



American
Megatrends

StorTrends® 3400 Dual Controller IP-SAN Storage Appliance Setup Guide (StorTrends iTX version 2.8)

MAN-3400-SG
04/22/2011

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Revision History

12/30/2010	Preproduction Release
04/15/2011	Added Licensing Information and Updating and Removed Maximum Physical and Theoretical Capacity Information
04/22/2011	Updated term from Canister to Controller

NOTE:

All screen captures are for representative purposes only. Your actual screen may look different. You may have a newer version and build of the StorTrends software and/or a different hardware configuration; such as a different StorTrends Dual Controller IP-SAN storage appliance. Most of the screen captures found in this document were taken from the StorTrends 3400i storage appliance. However, the basic usage remains the same.

Thank You

Thank you for purchasing the StorTrends® 3400 Dual Controller IP-SAN storage appliance. Please take a few minutes to review this Setup guide before beginning the installation process. If you require a further explanation of any item covered in this guide, please refer to the installation instructions on your CD.

This manual is written for the end-user to get up and running with the unit as quickly as possible. Installation and maintenance should be performed by experienced technicians only.

Disclaimer

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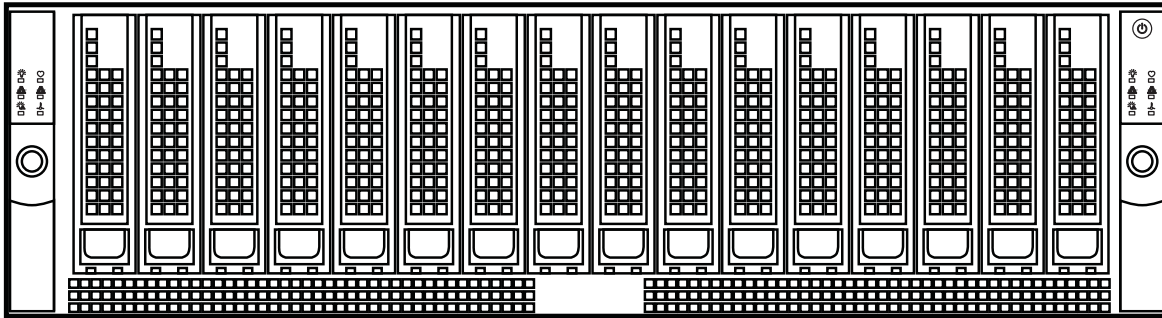
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Hardware Installation



Overview

This section provides a quick setup checklist to get your StorTrends® 3400 Dual Controller IP-SAN storage appliance up and running. Following the steps in the order given should enable you to have the system operational within a minimal amount of time.

NOTE:

Follow the steps in the order given to complete the installation process in a minimal amount of time. Read this section in its entirety before you begin the installation procedure outlined in this section.

Unpack the StorTrends® 3400 Dual Controller IP-SAN Storage Appliance

You should inspect the box the StorTrends® 3400 Dual Controller IP-SAN storage appliance was shipped in and note if it was damaged in any way. If the server itself shows damage, you should file a damage claim with the carrier who delivered it.

Decide on a suitable location for the rack unit that will hold the StorTrends® 3400 Dual Controller IP-SAN storage appliance. It should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated. You will also need it placed near a grounded power outlet. Read the Rack and Server Precautions in the next section.

Preparing for Setup

The box the StorTrends® 3400 Dual Controller IP-SAN storage appliance was shipped in includes the following:

- a StorTrends 3400 Dual Controller IP-SAN storage appliance
- Two Power Cords
- Two KVM Dongle to connect Monitor, USB Keyboard and Serial port
- Rails
- Rail Screws
- StorTrends CD

NOTE:

Your StorTrends Dual Controller IP-SAN storage appliance ships with the StorTrends software preloaded on it.

Your StorTrends 3400 Dual Controller IP-SAN storage appliance may or may not ship with everything listed in the *Retail Packing List*. Contact your AMI authorized reseller to find out what is shipped with your StorTrends® 3400 Dual Controller IP-SAN storage appliance if the contents do not match the ones listed in this document.

Choosing a Setup Location

- Leave enough clearance in front of the rack to enable you to open the front door completely (~25 inches).
- Leave approximately 30 inches of clearance in the back of the rack to allow for sufficient airflow and ease in servicing.

WARNING!

RACK PRECAUTIONS

- ENSURE THAT THE LEVELING JACKS ON THE BOTTOM OF THE RACK ARE FULLY EXTENDED TO THE FLOOR WITH THE FULL WEIGHT OF THE RACK RESTING ON THEM.
- IN A SINGLE RACK INSTALLATION, STABILIZERS SHOULD BE ATTACHED TO THE RACK.
- IN MULTIPLE RACK INSTALLATIONS, THE RACKS SHOULD BE COUPLED TOGETHER.
- ALWAYS MAKE SURE THE RACK IS STABLE BEFORE EXTENDING A COMPONENT FROM THE RACK.
- YOU SHOULD EXTEND ONLY ONE COMPONENT AT A TIME - EXTENDING TWO OR MORE SIMULTANEOUSLY MAY CAUSE THE RACK TO BECOME UNSTABLE.

WARNING!

SERVER PRECAUTIONS

- **REVIEW THE GENERAL SAFETY PRECAUTIONS.**
- **DETERMINE THE PLACEMENT OF EACH COMPONENT IN THE RACK BEFORE YOU INSTALL THE RAILS.**
- **INSTALL THE HEAVIEST SERVER COMPONENTS ON THE BOTTOM OF THE RACK FIRST, AND THEN WORK UP.**
- **USE A REGULATING UNINTERRUPTIBLE POWER SUPPLY (UPS) TO PROTECT THE SERVER FROM POWER SURGES, VOLTAGE SPIKES AND TO KEEP YOUR SYSTEM OPERATING IN CASE OF A POWER FAILURE.**
- **ALLOW THE POWER SUPPLY UNITS AND HOT PLUG SERIAL ATA DRIVE TO COOL BEFORE TOUCHING THEM.**
- **ALWAYS KEEP THE RACK'S FRONT DOOR AND ALL PANELS AND COMPONENTS ON THE SERVERS CLOSED WHEN NOT SERVICING TO MAINTAIN PROPER COOLING.**
- **WHEN REMOVING THE HARD DISK DRIVE, UNLOCK THE LATCH AND WAIT APPROXIMATELY ONE MINUTE TO ALLOW THE HARD DISK DRIVE MOTOR TO STOP BEFORE PULLING THE HARD DISK DRIVE OUT.**

General Safety Precautions

WARNING!

GENERAL SAFETY PRECAUTIONS

- KEEP THE AREA AROUND THE STORTRENDS® 3400 DUAL CONTROLLER IP-SAN STORAGE APPLIANCE CLEAN AND FREE OF CLUTTER.
- THE STORTRENDS® 3400 DUAL CONTROLLER IP-SAN STORAGE APPLIANCE WEIGHS APPROXIMATELY 100 LBS. (17.3 KG) WHEN FULLY LOADED. WHEN LIFTING THE SYSTEM, TWO PEOPLE AT EITHER END SHOULD LIFT SLOWLY WITH THEIR FEET SPREAD OUT TO DISTRIBUTE THE WEIGHT. ALWAYS KEEP YOUR BACK STRAIGHT AND LIFT WITH YOUR LEGS.
- DO NOT OPEN THE CHASSIS TOP COVER.
- WHILE WORKING ON THE SYSTEM, DO NOT WEAR LOOSE CLOTHING SUCH AS NECKTIES AND UNBUTTONED SHIRT SLEEVES, WHICH CAN COME INTO CONTACT WITH ELECTRICAL CIRCUITS OR BE PULLED INTO A COOLING FAN.
- REMOVE ANY JEWELRY OR METAL OBJECTS FROM YOUR BODY, WHICH ARE EXCELLENT METAL CONDUCTORS THAT CAN CREATE SHORT CIRCUITS AND HARM YOU IF THEY COME INTO CONTACT WITH PRINTED CIRCUIT BOARDS OR AREAS WHERE POWER IS PRESENT.

Rack Mounting Considerations

Feature	Description
Ambient Operating Temperature	If installed in a closed or multi-unit rack assembly, the ambient operating temperature of the rack environment may be greater than the ambient temperature of the room. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature (T _{mra}).
Reduced Airflow	Equipment should be mounted into a rack so that the amount of airflow required for safe operation is not compromised.
Mechanical Loading	Equipment should be mounted into a rack so that a hazardous condition does not arise due to uneven mechanical loading.
Circuit Overloading	Consideration should be given to the connection of the equipment to the power supply circuitry and the effect that any possible overloading of circuits might have on over current protection and power supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
Reliable Ground	A reliable ground must be maintained at all times. To ensure this, the rack itself should be grounded. Particular attention should be given to power supply connections other than the direct connections to the branch circuit (for example, the use of power strips, and so on.).

Installing the System into a Rack

This section provides information on installing the StorTrends 3400 into a rack with the rack rails provided. If the StorTrends 3400 has already been mounted into a rack, you can skip this step.

There are a variety of rack units on the market that may mean the assembly procedure will differ slightly. You should also refer to the installation instructions that came with the rack unit you are using.

Requirements

The rack rails supplied with your system are designed to be used with four post rack enclosures. The rack rails mount between the posts and are designed to be quickly installed.

In order for you to use the supplied rack rails, your rack enclosure must conform to the following:

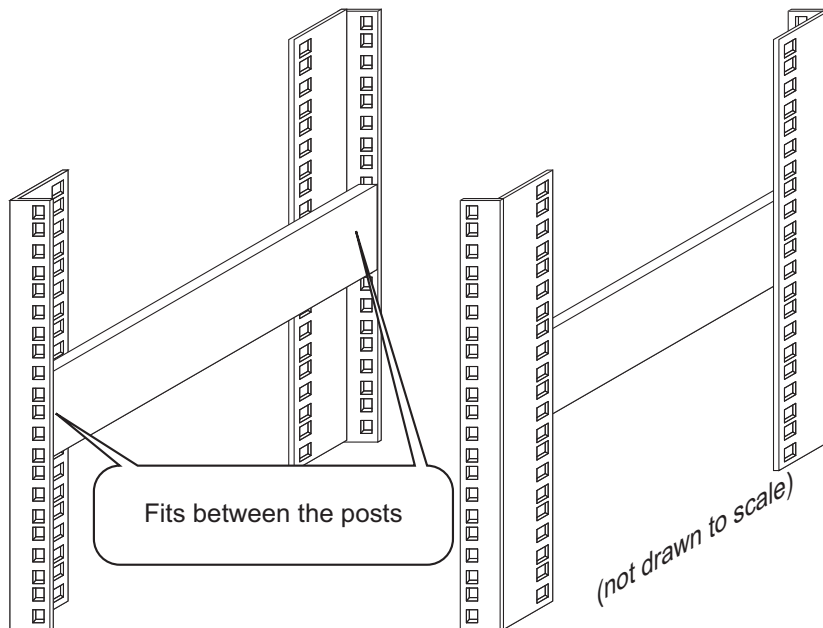
- must be a 19 inch rackmount cabinet
- must be at least 27 inches deep
- must have square holes on the posts (sometimes referred to as, "rapid rack holes.")
- must have a side clearance of 0.75 inches in between the posts, from square mounting hole to square mounting hole.

Meaning if you take a (0.75 inch) wide by (5.75 inch) tall by (the amount of space between the posts) length of wood and place it between the posts, it should not be exposed in a way that would restrict you from sliding your system into your rack enclosure.

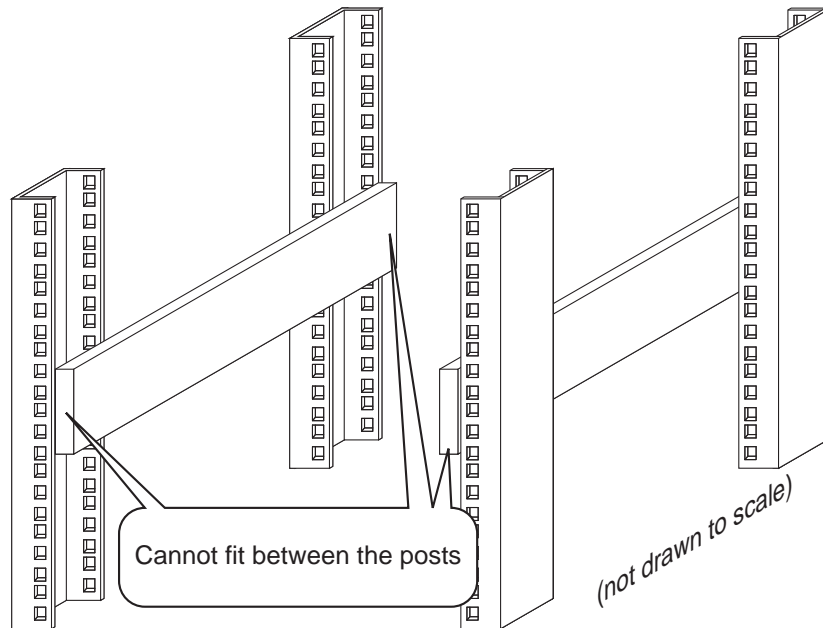
NOTE:

If you are using a rack enclosure that does not have enough space to fit the included rack rails, you can use either an L bracket or a rack shelf.

Correct type of four post rack enclosure



Wrong type of four post rack enclosure

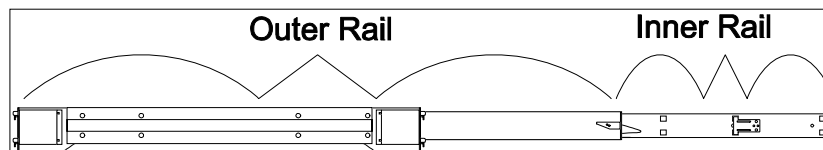


Inspection

Remove both the left (marked L) and right (marked R) rack rails from their plastic bags. Both the left and right rack rails have two sections to them.

- inner rail
- outer rail

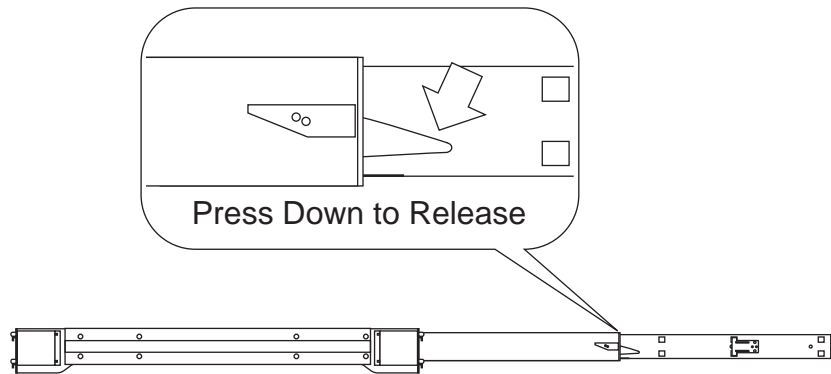
Rack Rail Sections



Separating the Rail Sections

The inner rack rail needs to be slid out from the outer rack rail prior to installation. To slide the inner rack rail from the outer rack rail, fully extend the rack rail until the inner rack rail slides to its locking position.

Rack Rail Release Tab



While lifting the locking tab on the inner rack rail, slide the inner rack rail out from the outer rack rail.

Inner Rail Fully Released



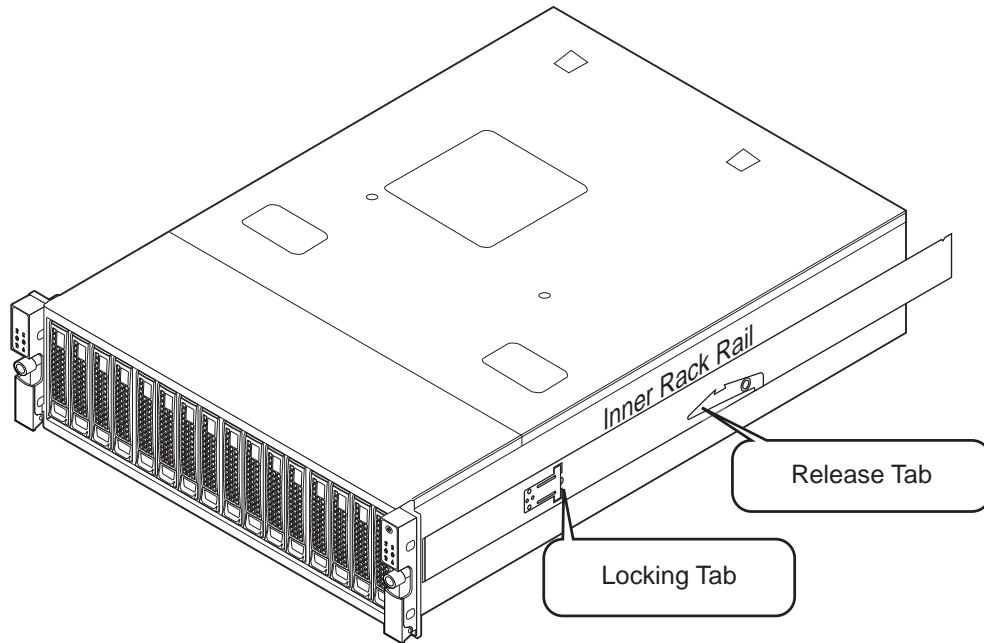
Attaching the Inner Rack Rails to the Chassis

The inner rack rail has openings that line up with the side of the chassis. Match the inner rack rail to the appropriate side of the chassis.

Slide the inner rack rail into its locking position. You will hear a snap when this happens and the inner rack rail will become securely affixed to the side of the chassis.

Screw the inner rack rail to the side of the chassis.

Inner Rail Attached to Chassis



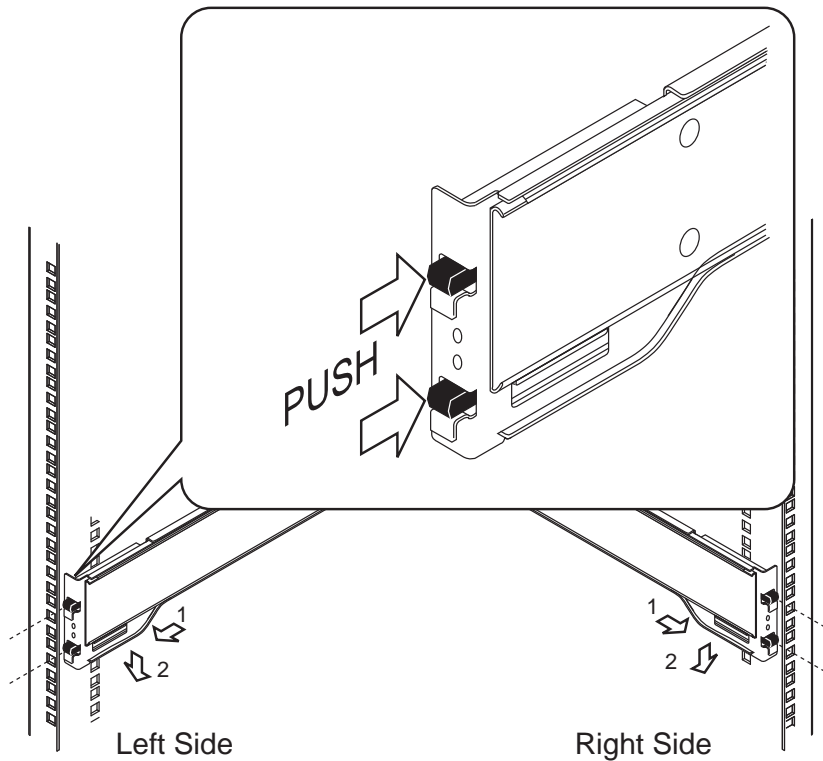
NOTE:

The inner rack rails are marked LH and RH, which corresponds to the left side and right side of the chassis.

Installing the Outer Rack Rails into the Rack

Locate the front of the outer rack rail and attach it to the rack. To do this, simply push the outer rack rail into the back of the rack post. The plastic securing pins will retract so that you can latch the outer rack rail into place. Once the outer rack rail is latched into place the securing plastic pins will pop back out.

Quick Rail Installation



Sliding the rear of the outer rack rail until it comes into contact with the back post. Make sure that the outer rack rail is level and secure it to the port in the same manner as you did with the front of the outer rack rail.

Secure the outer rack rail to the rack posts with four screws. Two for the front post and two for the rear post.

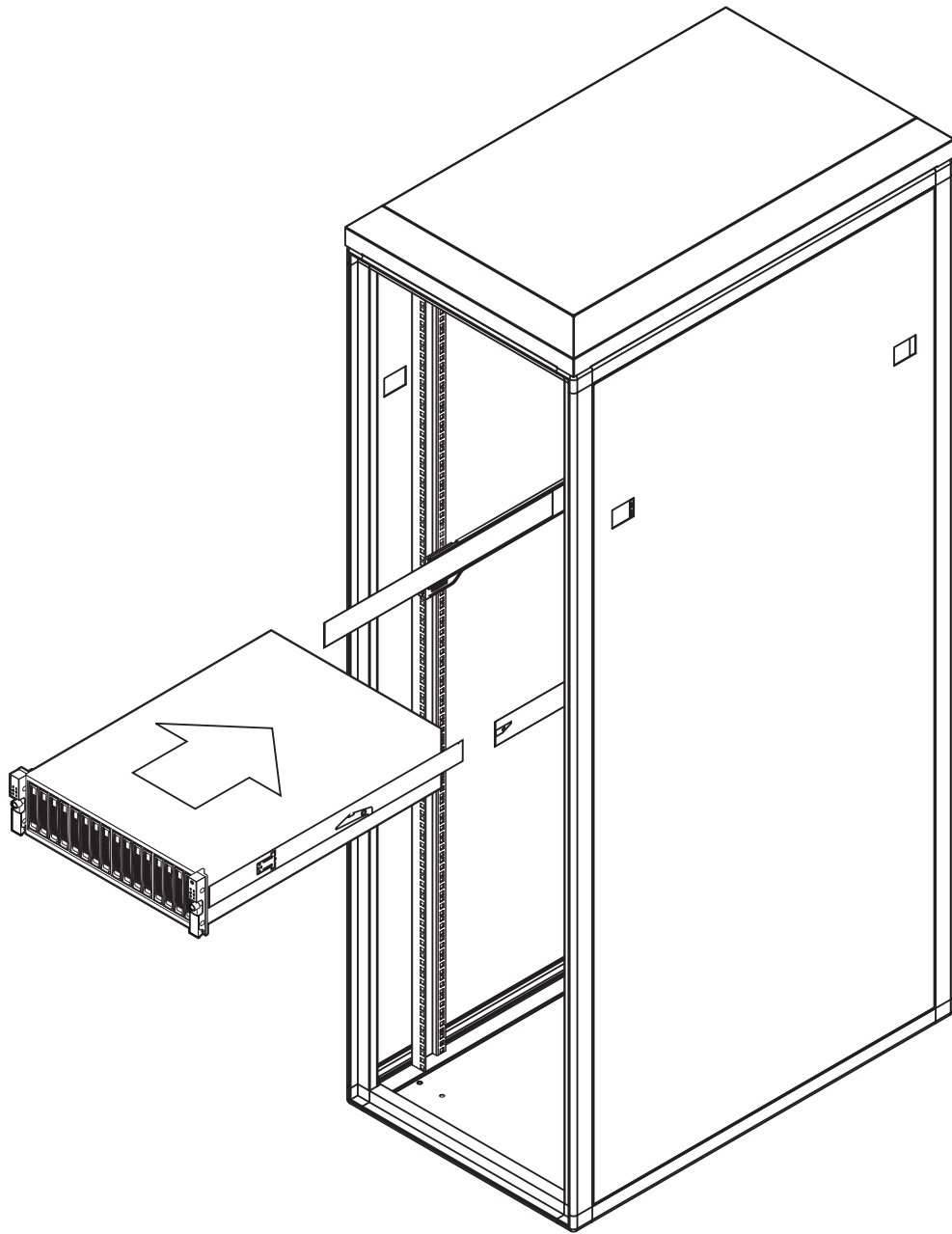
Repeat this process with the remaining outer rack rail.

Line up the inner rack rails of the chassis with the outer rack rails on the rack.

Slide the chassis into place until it comes to a stop.
Verify that both sides of the chassis come to a stop at the same location.

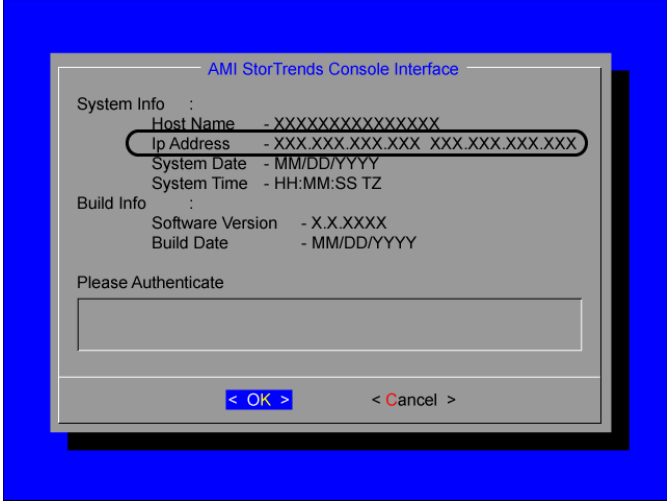
Lift the locking tab on the inner rack rails so that you can slide the chassis all the way into the rack.

Slide System into Enclosure



Completing the Hardware Installation

Next, you should check to make sure that the hard disk drives have been properly inserted and have not come loose in transit.

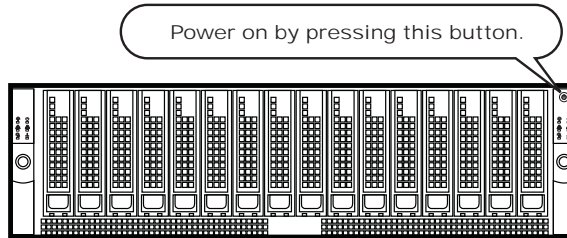
Step	Description
1	All hard disk drives can be accessed from the front of your StorTrends Dual Controller IP-SAN storage appliance. Verify that the hard disk drive trays are inserted all the way into its bay.
2	Verify that all cables in your rack are not obstructing the airflow of your StorTrends Dual Controller IP-SAN storage appliance.
3	Connect your network cable(s).
4	Insert the <i>KVM Dongle</i> and connect your USB keyboard and monitor.
5	The last thing you must do is to provide input power to your StorTrends Dual Controller IP-SAN storage appliance. Plug the two power cords from the power supply units into a high-quality power strip that offers protection from electrical noise and power surges. It is recommended that you use an uninterruptible power supply (UPS).
6	Power your StorTrends Dual Controller IP-SAN storage appliance on.
7	Once the StorTrends Dual Controller IP-SAN storage appliance is fully operational, you will see the following screen. Write down the IP Address listed in the "Ip Address" field. Since you have more than one NIC, there will be more than one IP Address listed. 

NOTE:

Your StorTrends Dual Controller IP-SAN storage appliance ships with the StorTrends software preloaded in it.

Connect to the StorTrends® Storage Appliance

Step One: Power your system on

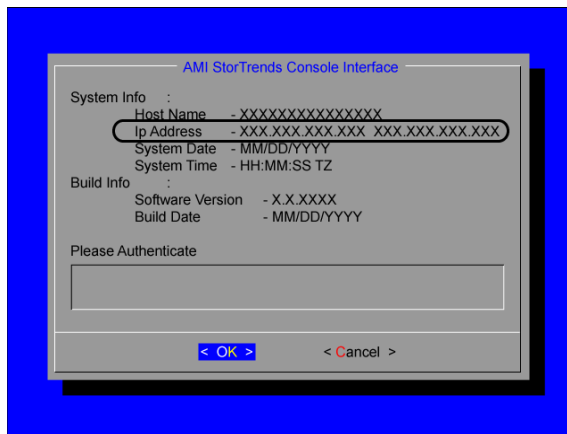


Step Two: Get the IP address

Once the StorTrends® storage appliance is fully operational, you will see the following screen. Write down the IP Address listed in the “*Ip Address*” field. If you have both NICs connected to your network with a DHCP server, there will be two IP Addresses.

NOTE:

There is an IP address that starts with 192.168.123.x. This IP address is an internal team network between the *Left Controller* and *Right Canisters*.



STOP!

Once again, **WRITE DOWN** the IP Address listed in the “*Ip Address*” field. Go to **ANOTHER COMPUTER** on the same network to continue with the configuration.

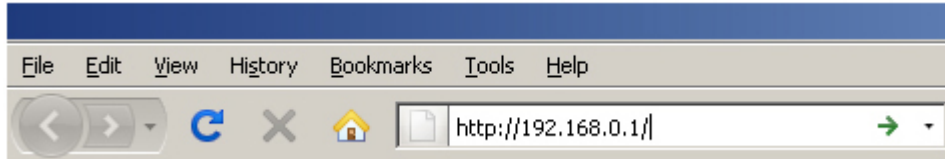
Step Three: Connecting from another System

STOP!

If you have already configured a *Virtual IP Address*, skip this section. This section is meant only for initial connectivity.

Type the physical IP Address of your StorTrends Dual Controller IP-SAN Storage Appliance into your Internet Browser. (Microsoft Internet Explorer 6.0 Service Pack 1 and Mozilla Firefox 1.5.04 or later are supported)

You can initially connect to your StorTrends Dual Controller IP-SAN Storage Appliance using **http://**, followed by the physical IP Address of your storage appliance.



You can initially use the physical IP Address on either the *Left Controller* or the *Right Controller* and on any of its physical NIC ports.

In this example, we will use the following as your network connection settings:

Physical NIC Location	Physical IP Address
Left Controller NIC1	192.168.0.1
Left Controller NIC2	Not plugged in
Right Controller NIC1	192.168.0.2
Right Controller NIC2	Not plugged in

NOTE:

The default *User Name* and *Password* is as follows:

Field	Defaults
User Name	itxadmin
Password	password

So, in this example, if you decide to use the *Left Controller NIC1* to login, you can initially use **192.168.0.1** to gain access.



The screenshot shows a login window titled "Login To- 192.168.0.1". It contains two input fields: "User Name" and "Password". A "Login" button is located at the bottom right of the form.

You can also log into the Right Controller NIC1 by using **192.168.0.2** to gain access.



The screenshot shows a login window titled "Login To- 192.168.0.2". It contains two input fields: "User Name" and "Password". A "Login" button is located at the bottom right of the form.

Step Four: Configuring a Virtual IP Address

Use of a *Virtual IP Address* is required on the StorTrends Dual Controller IP-SAN Storage Appliance. The basic reason behind this is because, since the StorTrends Dual Controller IP-SAN Storage Appliance has two controllers (*Left Controller* and *Right Controller*), the StorTrends Dual Controller IP-SAN Software uses the *Virtual IP Address* to provide seamlessly redundancy.

When you initially log into one of your *Controllers* on your StorTrends Dual Controller IP-SAN Storage Appliance using one of its physical IP addresses, you will automatically enter into the *Network Configuration Wizard*. The *Network Configuration Wizard* allows you to configure an *Alias IP Address* for it; otherwise known as a *Virtual IP Address*.

NOTE:

- In this User's Guide, "Virtual IP Address," and "Alias IP Address," are used interchangeably. A *Virtual IP Address* is an *Alias IP Address* and vice versa.
- You must configure a *Virtual IP Address* on your StorTrends Dual Controller IP-SAN Storage Appliance.

We will use the same configuration as in the previous example:

Physical NIC Location	Physical IP Address
Left Controller NIC1	192.168.0.1
Left Controller NIC2	Not plugged in
Right Controller NIC1	192.168.0.2
Right Controller NIC2	Not plugged in

To log into your StorTrends Dual Controller IP-SAN Storage Appliance, you can use any of the Physical IP Addresses.

In this example we have two Physical IP Addresses to choose from. We will use the Left Controller, NIC1.



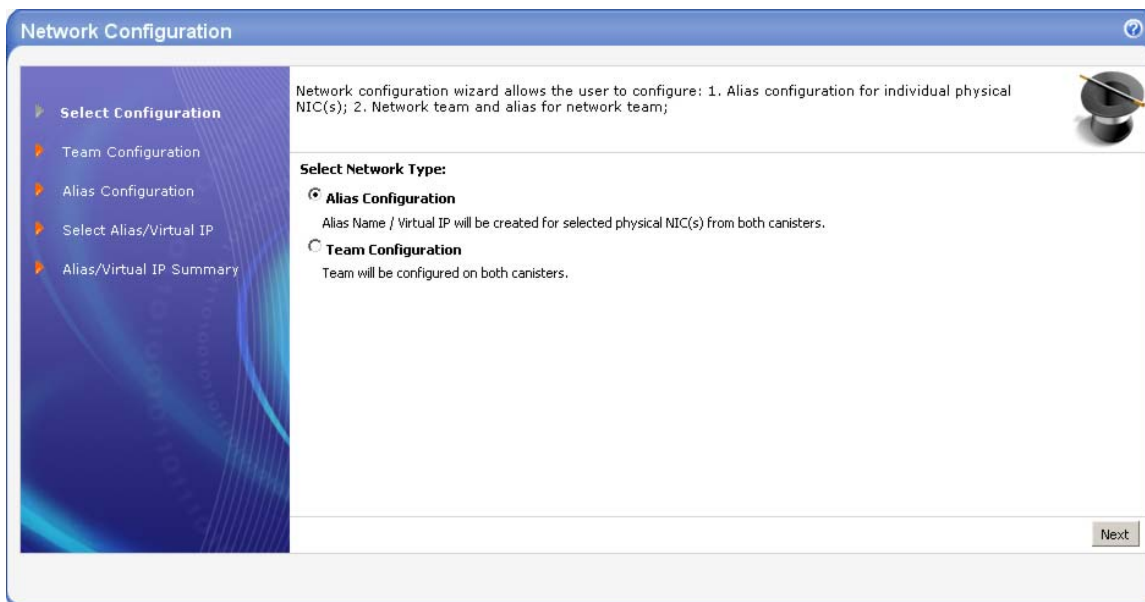
Login To- 192.168.0.1

User Name

Password

Login

Immediately after your initial login attempt, you are taken to the *Network Configuration Wizard*. In the *Network Configuration Wizard*, you must configure an *Alias IP Address*; otherwise known as a *Virtual IP Address*.



You are given a couple of options:

Option	Select his option if...
Alias Configuration	You have a single NIC in each <i>Controller</i> being used.
Team Configuration	You want to configure <i>Network Teaming</i> on both <i>Controllers</i> that has both NIC1 and NIC2 connected to a <i>Switch</i> that supports <i>Network Teaming</i> .
	NOTE: You must configure Network Teaming prior to configuring the <i>Virtual IP Address</i> ; otherwise known as the <i>Alias IP Address</i> .

STOP!

- Have only a single NIC in each *Controller* connected to your network? Continue on to the *Alias Configuration Option* section.
- Have more than two NICs in **each** *Controller* connected to your network and want to configure *Network Teaming*? Skip ahead to the *Team Configuration Option* section.

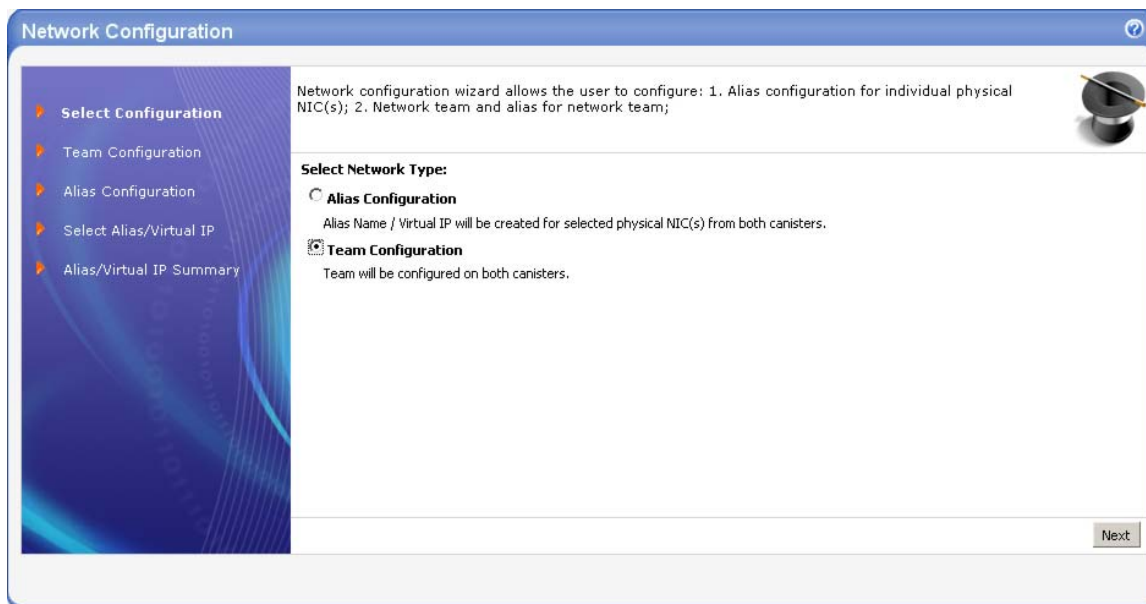
Alias Configuration Option

Step	Action
1	Make sure <i>Alias Configuration</i> is selected and click <i>Next</i> .
2	Select a NIC from the list. NOTE: Only NICs that are not assigned an Alias are listed.
3	Enter the <i>Alias Name</i> you want to use in the <i>Alias Name</i> field. Use only alpha-numeric characters. Special characters (such as #, \$ and %) are not supported. The maximum length allowed is nine (9) characters. For example, entering RC in <i>Alias Name</i> field will create an <i>Alias Name</i> of Alias-RC .
4	Enter the <i>Virtual IP Address</i> that you want to use in the <i>Virtual IP</i> field. For example, 192.168.0.200 .
5	Enter the <i>Portal Tag</i> number that you want to use in the <i>Portal Tag</i> field. For example, 1, 2, 3 or 4 .
6	Click <i>Next</i> to view the <i>Alias/Virtual IP Summary</i> page. Click <i>Finish</i> to create the <i>Virtual IP Addresses</i> with your settings.

STOP!

If this is your first time logging into your StorTrends Dual Controller IP-SAN Storage Appliance, skip ahead to the *Using the Quick Setup Wizard* section.

Team Configuration Option



Step	Action
1	Make sure <i>Team Configuration</i> is selected and click <i>Next</i> .
2	Select at least two NICs from the list of NICs displayed. Make sure that both NICs are from the same Subnet.
3	Select the type of teaming from the drop-down list box: <ul style="list-style-type: none"> Balanced Round Robin Dynamic Link Aggregation (802.3AD) Balance TLB
4	Click <i>Next</i> and a <i>Team</i> is created for both <i>Controllers</i> .
5	Enter the <i>Alias Name</i> you want to use in the <i>Alias Name</i> field. Use only alpha-numeric characters. Special characters (such as #, \$ and %) are not supported. The maximum length allowed is nine (9) characters. For example, entering RC in <i>Alias Name</i> field will create an <i>Alias Name</i> of Alias-RC .
6	Enter the <i>Virtual IP Address</i> that you want to use in the <i>Virtual IP</i> field. For example, 192.168.0.200 .
7	Click <i>Next</i> to view the <i>Alias/Virtual IP Summary</i> page. Click <i>Finish</i> to create the <i>Virtual IP Addresses</i> with your settings.

STOP!

If this is your first time logging into your StorTrends Dual Controller IP-SAN Storage Appliance, skip ahead to the *Using the Quick Setup Wizard* section.

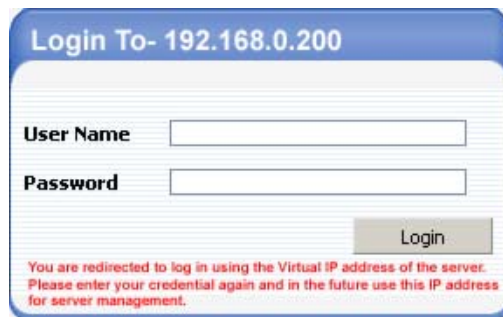
Future Login Information

From this point forward, only use the *Virtual IP Address* to access your StorTrends Dual Controller IP-SAN Storage Appliance.

NOTE:

You should always use the Virtual IP Address that you assigned to your StorTrends Dual Controller IP-SAN Storage Appliance.

If you use the Physical IP Address, you will automatically be redirected to your *Virtual IP Address*.



Login To- 192.168.0.200

User Name

Password

Login

You are redirected to log in using the Virtual IP address of the server.
Please enter your credential again and in the future use this IP address
for server management.

You will also be prompted with a warning message:

“You are redirected to log in using the Virtual IP address of the server. Please enter your credential again and in the future use this IP address for server management.”

Write down the *Virtual IP Address* (also known as the *Alias IP Address*) of your StorTrends Dual Controller IP-SAN Storage Appliance. The *Virtual IP Address* will be located in your Internet browser address bar.

Step Five: Logging On Using your Virtual IP Address

STOP!

Make sure that you login to the *Virtual IP Address* that you configured. If not, you will be redirected to the Virtual IP Address and will also be prompted with a warning message: **“You are redirected to log in using the Virtual IP address of the server. Please enter your credential again and in the future use this IP address for server management.”**



The image shows a web-based login interface. At the top, it says "Login To- 192.168.0.200". Below this, there are two text input fields. The first is labeled "User Name" and the second is labeled "Password". To the right of the "Password" field is a button labeled "Login".

You will be prompted to provide a username and password before you can gain access to your StorTrends Dual Controller IP-SAN Storage Appliance. Enter your username and password.

Field	Defaults
User Name	itxadmin
Password	password

NOTE:

- When you login using the default **itxadmin** password, you have full administrative powers. It is advised that once you login, you change the password.
- It is advised that you change the **root** password in the *Command Line Interface* (CLI). Changing the password and basic CLI usage is not described in this document.
- Both the user name and password are case sensitive.

Using the Quick Setup Wizard

Quick Setup Wizard: Before You Begin

Use the following instructions as a basis.

NOTE:

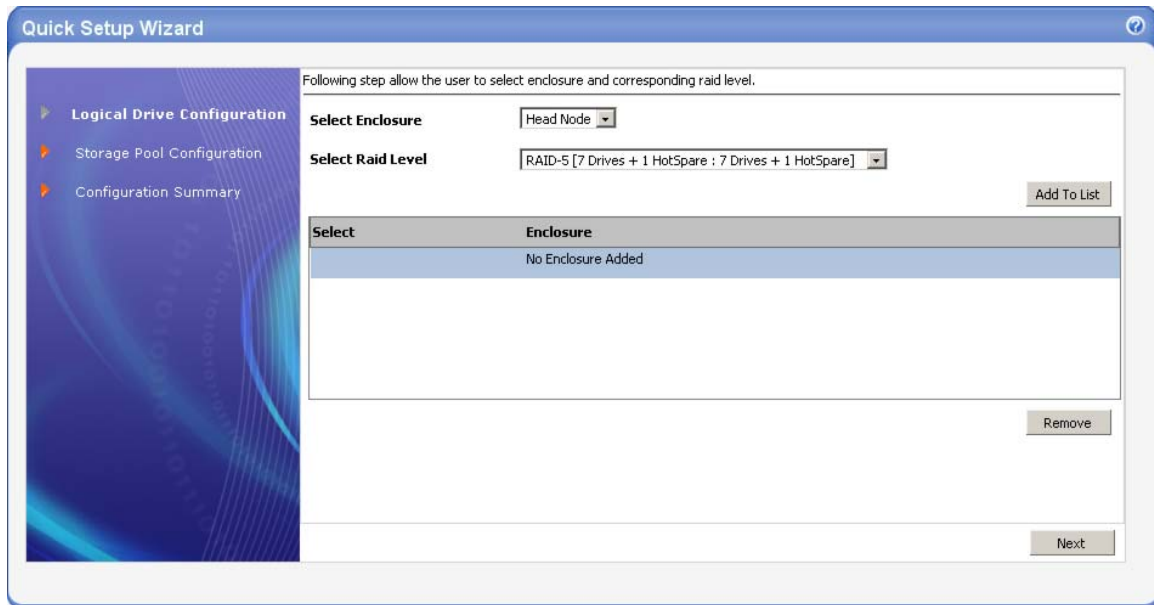
The *Quick Setup Wizard* will select all the physical hard disk drives present in the StorTrends Dual Controller IP-SAN storage appliance to create the RAID array and Storage Pool(s). Twenty percent of the physically available hard disk space should be reserved if you are planning to use snapshot storage.

Step One: Quick Setup Wizard

If the storage has not been configured on your StorTrends Dual Controller IP-SAN storage appliance, you will be prompted to run the *Quick Setup Wizard*. The *Quick Setup Wizard* will get you up and running in the shortest amount of time possible.

NOTE:

The *Quick Setup Wizard* will select the enclosures present in the StorTrends Dual Controller IP-SAN storage appliance and list the RAID options to create your first *Storage Pool*.



Step Two: Logical Drive Configuration

Step	Action
1	Select the <i>Enclosure(s)</i> [<i>Head Node/JBODs</i>] from the dropdown list. JBODs will be listed if there is a JBOD attached to you the StorTrends Dual Controller IP-SAN storage appliance. By default, <i>Head Node</i> is selected.
2	Select the type of <i>RAID Level</i> to be configured for the <i>Storage Pool</i> . The following is a list of <i>RAID Levels</i> supported: <ul style="list-style-type: none"> • RAID 5[7 Drives + 1 HotSpare : 7 Drives + 1 HotSpare] This will create two <i>Logical Drives</i> with RAID 5 and two <i>Storage Pools</i>. • RAID 50[7 Drives + 1 HotSpare : 7 Drives + 1 HotSpare] This will create two <i>Logical Drives</i> with RAID 5 and single <i>Storage Pool</i>. • RAID 5[15 Drives + 1 HotSpare] This will create a single <i>Logical Drive</i> with RAID 5 and a single <i>Storage Pool</i>.
3	Left click on <i>Add To List</i> button to add the options selected to the list box.
4	Left click the <i>Next</i> button to continue.

NOTE:

- To remove an *Enclosure* from the list box, select it (by placing a check mark in the box next to the *Enclosure* to be removed) and left click on the *Remove* button.
- If any *Logical Drives/Storage Pools* are not present for the RAID-A option, other unused enclosures will not be listed in enclosure list. You have to create a *Logical Drive/Storage Pool* for the respective *Enclosure* for the RAID-A option before proceeding to other *Enclosures*.

Step Three: Storage Pool Configuration

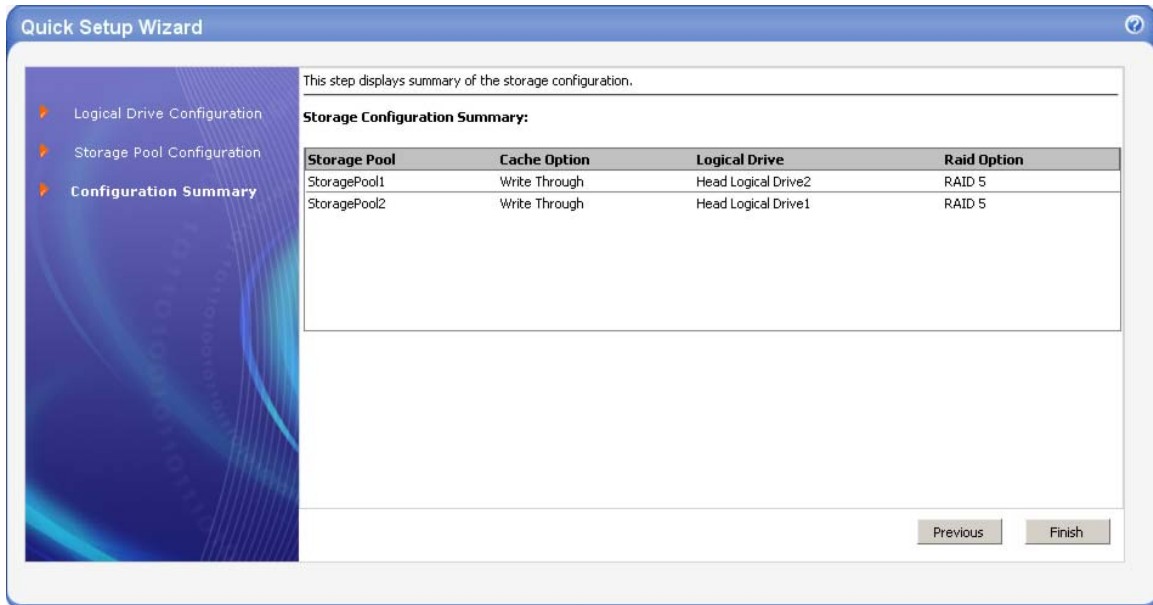
This step allows the user to select *Logical Drives* to be created as *Storage Pools*.

Step	Action
1	Enter a name for the <i>Storage Pool</i> to be created.
2	Select <i>Cache Option</i> from the dropdown list box. <i>Write Through</i> , <i>Write Back</i> and <i>Force Write Back</i> are the <i>Cache Options</i> supported.
3	Select the <i>Logical Drive</i> from the list by checking the required <i>Logical Drive</i> and left click on the <i>Add To List</i> button.
4	Click the <i>Next</i> button to continue.

NOTE:

To remove a *Logical Drive* from the list box, select it (by placing a check mark in the box next to the *Logical Drive* to be removed) and left click on the *Remove* button.

Step Four: Configuration Summary



This step displays a summary of your storage configuration.

Step	Action
1	Review your configuration.
2	Click on the <i>Finish</i> button to configure your <i>Storage Pool(s)</i> .

NOTE:

Use the *Previous* button to make changes to your configuration.

Do not close the window or click anywhere else until the operation completes.

The image shows a 'Quick Setup Wizard' window with a blue header and a sidebar on the left. The sidebar contains three items: 'Logical Drive Configuration', 'Storage Pool Configuration', and 'Configuration Summary', with the last one being selected. The main area contains the text 'This step displays summary of the storage configuration.' followed by a table titled 'Storage Configuration Summary:'. The table has four columns: 'Storage Pool', 'Cache Option', 'Logical Drive', and 'Raid Option'. It lists two storage pools: 'StoragePool1' and 'StoragePool2', both with 'Write Through' cache options and 'RAID 5' raid options. At the bottom right, there are 'Previous' and 'Finish' buttons. At the bottom center, there is a red warning message: 'Please wait while RAID array and storage pool are being created. This might take a few minutes...' followed by a progress indicator consisting of ten small squares, the first three of which are filled.

Quick Setup Wizard

This step displays summary of the storage configuration.

Storage Configuration Summary:

Storage Pool	Cache Option	Logical Drive	Raid Option
StoragePool1	Write Through	Head Logical Drive2	RAID 5
StoragePool2	Write Through	Head Logical Drive1	RAID 5

Previous Finish

Please wait while RAID array and storage pool are being created. This might take a few minutes... ■■■■■■■■■■

Step Five: All Done No Errors

The screenshot displays the ManageTrends web interface. The top navigation bar includes the ManageTrends logo, health indicators for Hardware Health and System Health (both green), and links for About, Help, itxadmin, and Sign Out. A left-hand navigation tree shows the following structure:

- Event Log
- Dashboard
- Left Canister
 - System Performance
 - Control Panel
- Right Canister
 - System Performance
 - Control Panel
- Storage
 - StoragePool1
 - Volumes
 - Targets
 - SRM
 - StoragePool2
 - Volumes
 - Targets
 - SRM
 - Replication
 - Snap Assisted

The main content area displays details for StoragePool1 and StoragePool2. Each pool has a table with the following data:

Name	Capacity	Exact Space	Available Space	Status
StoragePool1	1610.95 GB	0 GB	1610.95 GB	Online
StoragePool2	1610.95 GB	0 GB	1610.95 GB	Online

Below each table is a 3D cylinder chart representing storage usage. For StoragePool1, the chart shows 0% used (orange) and 100% available (blue). For StoragePool2, the chart shows 0% used (orange) and 100% available (blue).

Volume Configuration Wizard

Volume Configuration Wizard: Before You Begin

Use the following instructions as a basis.

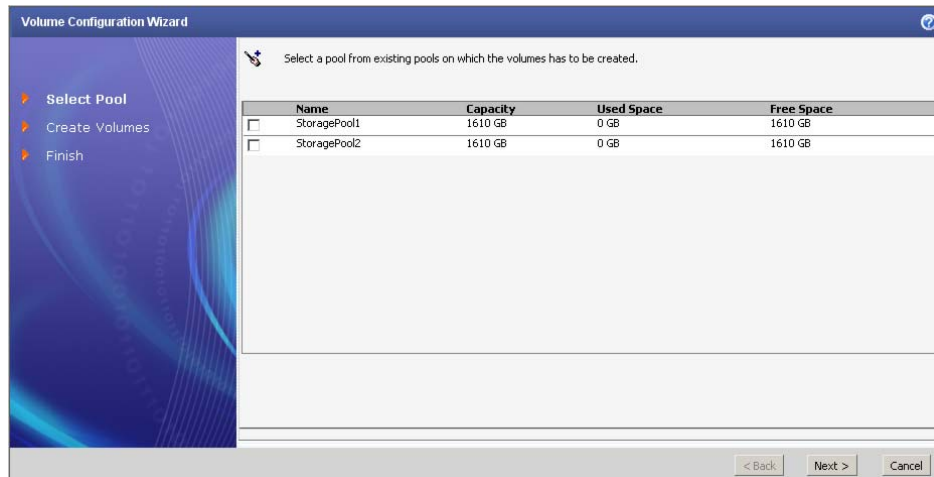
Step One: Volume Wizard



If your *SAN Virtual Volume* has not been configured on your StorTrends Dual Controller IP-SAN storage appliance, you can run the *Volume Configuration Wizard*. The *Volume Configuration Wizard* will get you up and running in the shortest amount of time possible.

Click the *Volume Wizard* link to get started.

Step Two: Select Storage Pools



Select the *Storage Pools* that you want to configure *SAN Virtual Volumes* on and click *Next*.

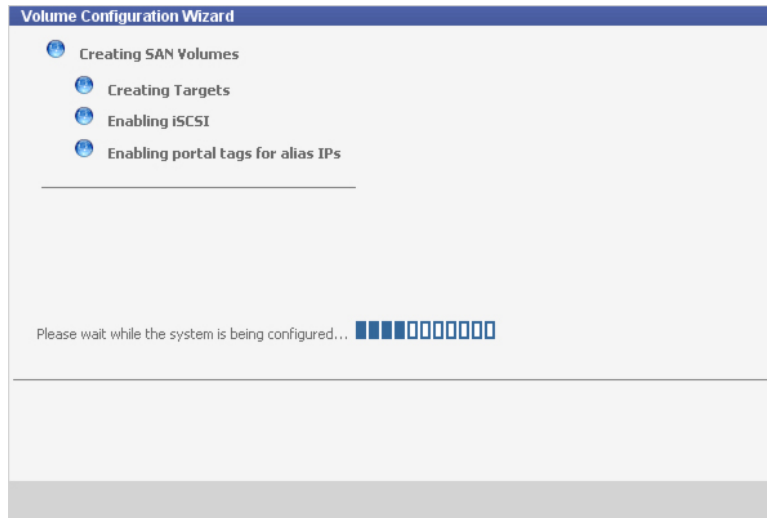
Step Three: Create Volumes

This section allows you to create your *SAN Virtual Volume* and configure your *Target* information. Fill out the form and click *Add to List*. The options and buttons are explained in the following table:

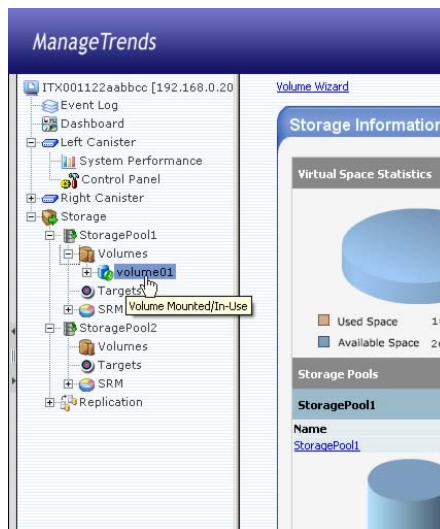
Field/Button	Definition
Volume Name	In the <i>Enter Volume Name</i> field, enter a name for your <i>SAN Virtual Volume</i> . The <i>SAN Virtual Volume Name</i> must be alphanumeric, not have any spaces and be between one and 63 characters in length.
Volume Size	In the <i>Enter Volume Size</i> field, enter the size (GB) that you want to use for your <i>SAN Virtual Volume</i> .
Dialect Type	By default, this is set to <i>SAN</i> and cannot be modified.
Provisioning Type	Can be <i>Thin</i> or <i>Exact</i> Provisioning. <ul style="list-style-type: none"> If you select <i>Thin</i>, the volume can be assigned a size greater than the actual physical size of the storage device. If you select <i>Exact</i>, the volume size cannot exceed the actual physical space available in your StorTrends Storage Appliance.
Chunk Size	By default the <i>Chunk Size</i> is set to <i>64K</i> .
Create New Target	In the <i>Create New Target</i> field, type in a name for your <i>Target</i> . The <i>Target Name</i> must be alphanumeric, not have any spaces and be between one and 255 characters in length which includes the base name also. Lowercase names are required since these target names will be used during replication.
Add to List button	This button places the <i>SAN Virtual Volume</i> settings that you want to use into the list. It will not create the <i>SAN Virtual Volumes</i> until you click <i>Finish</i> .
Remove from List button	This button allows you to remove a <i>SAN Virtual Volume</i> configuration from the list.

Once you are satisfied with the *SAN Virtual Volumes* in your list, click *Finish*.

Step Four: All Done No Errors



Once you click *Finish*, the wizard begins to create your *SAN Virtual Volumes* based on the values that you have entered. The progress of the wizard will be displayed. Do not close the window or click anywhere else until the operation completes.

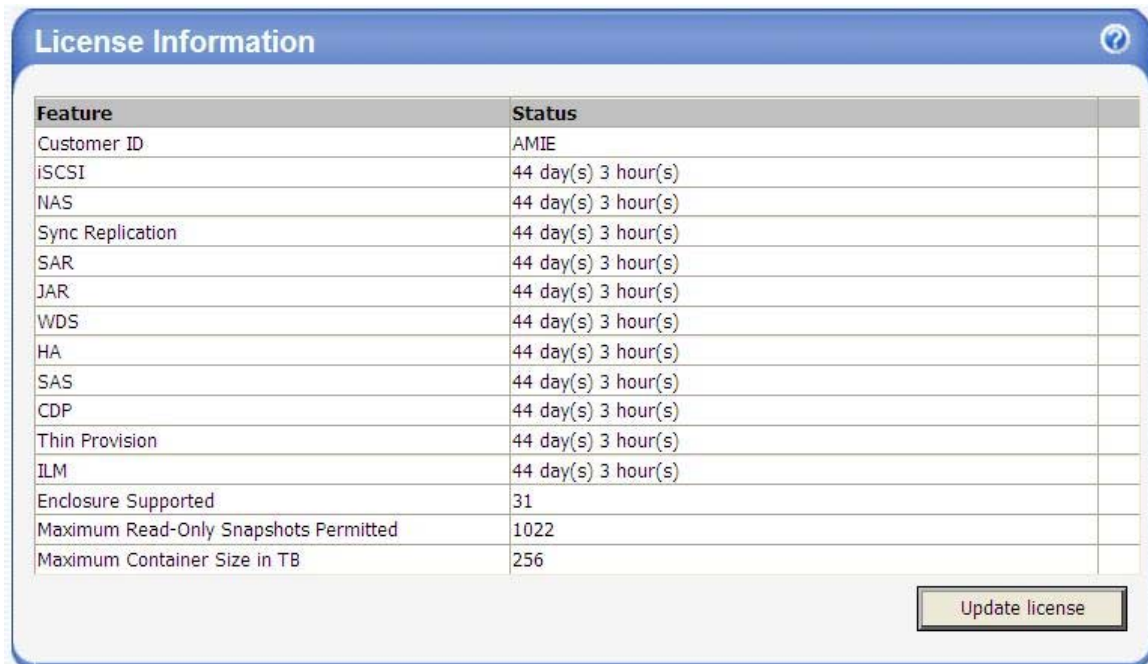


Once all your *SAN Virtual Volumes* have been created, you will be able to access the Volume by clicking on it from the tree menu.

STOP!

YOU SHOULD NOW BE UP AND RUNNING.

License Information Page



The screenshot shows a window titled "License Information" with a help icon in the top right corner. Below the title bar is a table with two columns: "Feature" and "Status". The table lists various features and their current status. At the bottom right of the window is a button labeled "Update license".

Feature	Status
Customer ID	AMIE
iSCSI	44 day(s) 3 hour(s)
NAS	44 day(s) 3 hour(s)
Sync Replication	44 day(s) 3 hour(s)
SAR	44 day(s) 3 hour(s)
JAR	44 day(s) 3 hour(s)
WDS	44 day(s) 3 hour(s)
HA	44 day(s) 3 hour(s)
SAS	44 day(s) 3 hour(s)
CDP	44 day(s) 3 hour(s)
Thin Provision	44 day(s) 3 hour(s)
ILM	44 day(s) 3 hour(s)
Enclosure Supported	31
Maximum Read-Only Snapshots Permitted	1022
Maximum Container Size in TB	256

Update license

This page allows you to view the various licensing options and current settings for your copy of the StorTrends software.

The StorTrends software comes with a License Key that is valid for a trial period of 45-days and it has most of the features enabled. Following your 45-day trial period, you can upgrade to an unlimited or customized license by entering the appropriate license key that you obtain from your AMI Support Representative.

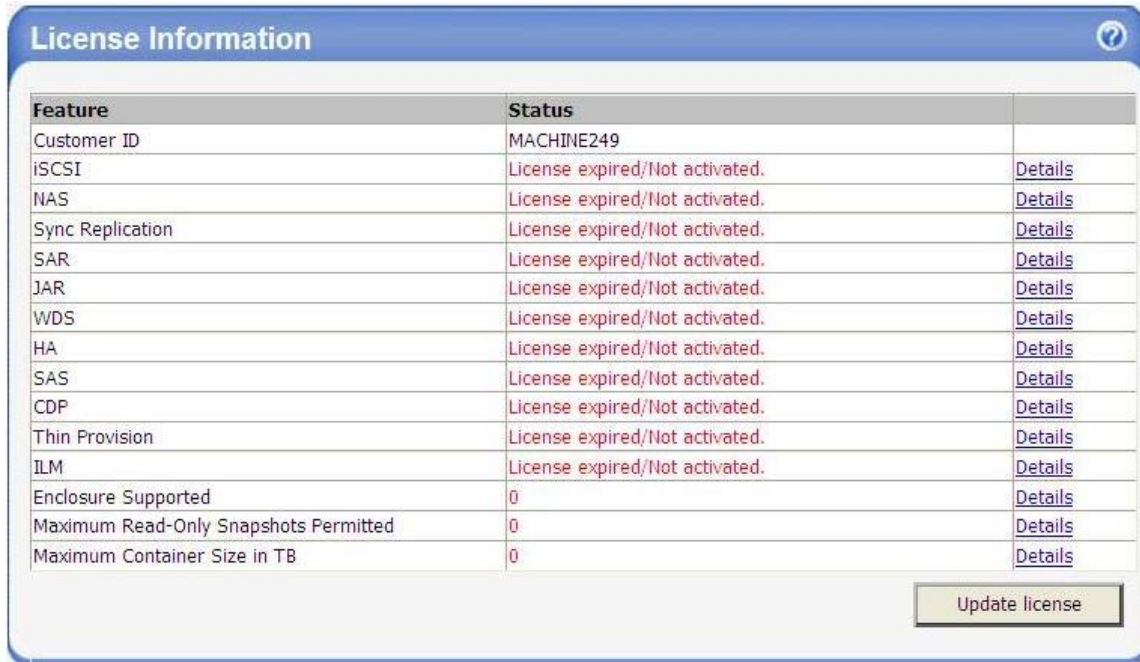
The license can be updated via the *Update License* button. The Update License screen provides you with the StorTrends software Service Key that will be required any time you make changes or upgrades to the licensing of your product.

NOTE:

Your Service Key is required in order for your License Key to be generated. Each StorTrends Service Key is generated from hardware that is specific to a single storage appliance unit and thus it cannot be used to license or upgrade any other storage appliances. Also note that you can email yourself a copy of the Service Key by clicking on the Email Service Key button that you can later forward on to AMI Support Representatives when you're ready to make changes.

After your changes have been processed by an AMI Support Representative, you'll receive a new license key in the form of a text document. After you save the new key to a location on your hard drive, use the Browse button to navigate to the location of that file, and then simply select the Update License button to complete the process.

Updating an Expired License



Feature	Status	
Customer ID	MACHINE249	
iSCSI	License expired/Not activated.	Details
NAS	License expired/Not activated.	Details
Sync Replication	License expired/Not activated.	Details
SAR	License expired/Not activated.	Details
JAR	License expired/Not activated.	Details
WDS	License expired/Not activated.	Details
HA	License expired/Not activated.	Details
SAS	License expired/Not activated.	Details
CDP	License expired/Not activated.	Details
Thin Provision	License expired/Not activated.	Details
ILM	License expired/Not activated.	Details
Enclosure Supported	0	Details
Maximum Read-Only Snapshots Permitted	0	Details
Maximum Container Size in TB	0	Details

Update license

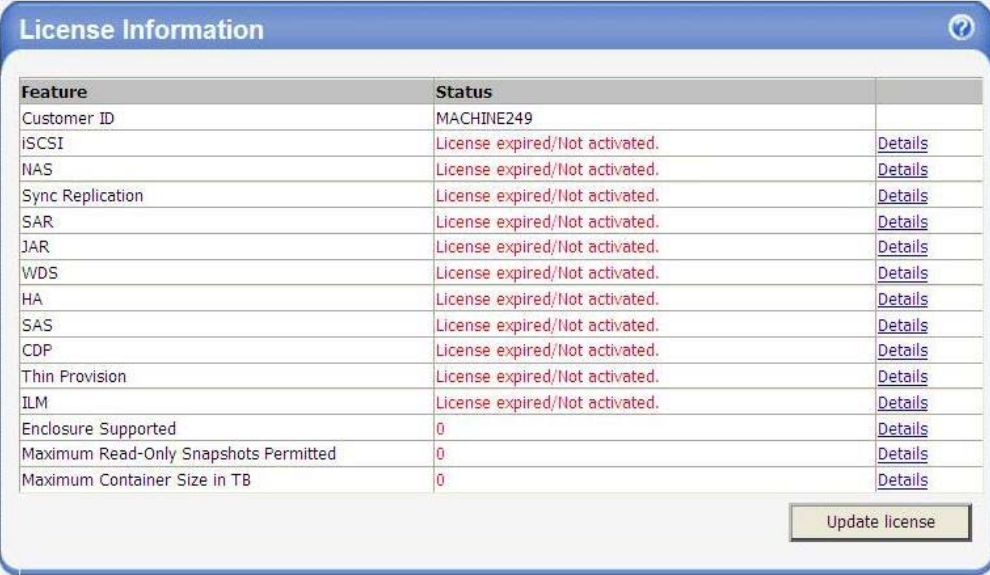
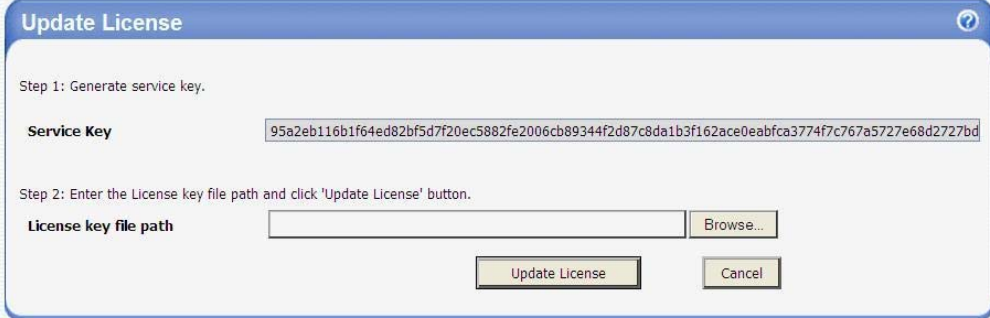
NOTE:

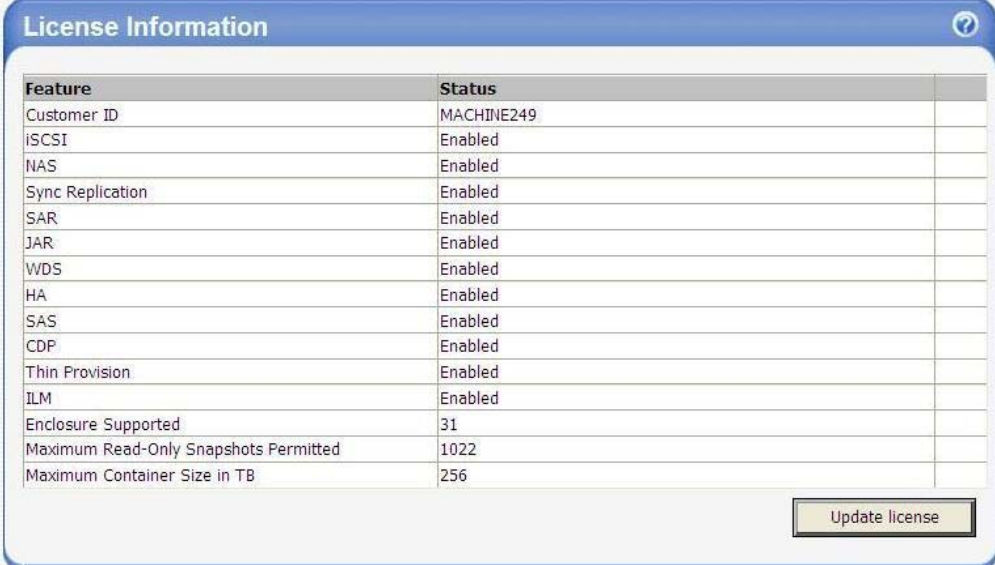
All screen captures are for representative purposes only. Your actual screen may look different. You may have a newer version and build of the StorTrends software and/or a different hardware configuration; such as a different StorTrends storage appliance. Most of the screen captures found in this document were taken from the StorTrends 3200i storage appliance. However, the basic usage remains the same.

In the event that your 45 day evaluation expires before you have entered your License key, you will receive a message stating the following:

“The license is unavailable/expired for both the SAN and NAS features. You need to upgrade to a valid license for at least one of the features in order to continue managing this server.”

This page displays when you try to log into the StorTrends storage appliance to manage it.

Step	Description																																																
1	Log into the StorTrends storage appliance.																																																
2	<p>The first thing you will see is the License Information screen stating the following: “The license is unavailable/expired for both the SAN and NAS features. You need to upgrade to a valid license for at least one of the features in order to continue managing this server.”</p>																																																
	 <p>The screenshot shows a window titled "License Information" with a table of features and their status. The status for all features is "License expired/Not activated." There is an "Update license" button at the bottom right.</p> <table border="1" data-bbox="391 499 1344 913"> <thead> <tr> <th>Feature</th> <th>Status</th> <th></th> </tr> </thead> <tbody> <tr> <td>Customer ID</td> <td>MACHINE249</td> <td></td> </tr> <tr> <td>iSCSI</td> <td>License expired/Not activated.</td> <td>Details</td> </tr> <tr> <td>NAS</td> <td>License expired/Not activated.</td> <td>Details</td> </tr> <tr> <td>Sync Replication</td> <td>License expired/Not activated.</td> <td>Details</td> </tr> <tr> <td>SAR</td> <td>License expired/Not activated.</td> <td>Details</td> </tr> <tr> <td>JAR</td> <td>License expired/Not activated.</td> <td>Details</td> </tr> <tr> <td>WDS</td> <td>License expired/Not activated.</td> <td>Details</td> </tr> <tr> <td>HA</td> <td>License expired/Not activated.</td> <td>Details</td> </tr> <tr> <td>SAS</td> <td>License expired/Not activated.</td> <td>Details</td> </tr> <tr> <td>CDP</td> <td>License expired/Not activated.</td> <td>Details</td> </tr> <tr> <td>Thin Provision</td> <td>License expired/Not activated.</td> <td>Details</td> </tr> <tr> <td>ILM</td> <td>License expired/Not activated.</td> <td>Details</td> </tr> <tr> <td>Enclosure Supported</td> <td>0</td> <td>Details</td> </tr> <tr> <td>Maximum Read-Only Snapshots Permitted</td> <td>0</td> <td>Details</td> </tr> <tr> <td>Maximum Container Size in TB</td> <td>0</td> <td>Details</td> </tr> </tbody> </table>	Feature	Status		Customer ID	MACHINE249		iSCSI	License expired/Not activated.	Details	NAS	License expired/Not activated.	Details	Sync Replication	License expired/Not activated.	Details	SAR	License expired/Not activated.	Details	JAR	License expired/Not activated.	Details	WDS	License expired/Not activated.	Details	HA	License expired/Not activated.	Details	SAS	License expired/Not activated.	Details	CDP	License expired/Not activated.	Details	Thin Provision	License expired/Not activated.	Details	ILM	License expired/Not activated.	Details	Enclosure Supported	0	Details	Maximum Read-Only Snapshots Permitted	0	Details	Maximum Container Size in TB	0	Details
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3	Left click the <i>Update License</i> button.																																																
4	The Update License page will open containing the Service Key and a place where you can enter the path of the License key file path.																																																
	 <p>The screenshot shows a window titled "Update License" with two steps. Step 1: Generate service key. The Service Key field contains a long alphanumeric string. Step 2: Enter the License key file path and click 'Update License' button. The License key file path field is empty, with a 'Browse...' button next to it. There are 'Update License' and 'Cancel' buttons at the bottom.</p>																																																

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4	<p>In the <i>License Key File Path</i> field and if you have the License key already, type the path or browse to the License key file. If you do not have the License key file yet, contact an AMI Support Representatives to obtain one.</p> <p>After your license has been processed by an AMI Support Representative, you will receive a License key in the form of a text document. After you save the new key to a location on your hard drive, use the Browse button to navigate to the location of that file, and then simply select the Update License button to complete the process.</p>																																
5	<p>The options you have licensed will be marked “Enabled”.</p>  <p>The screenshot shows a window titled "License Information" with a table of features and their status. The table has two columns: "Feature" and "Status". The features listed are: Customer ID (MACHINE249), iSCSI (Enabled), NAS (Enabled), Sync Replication (Enabled), SAR (Enabled), JAR (Enabled), WDS (Enabled), HA (Enabled), SAS (Enabled), CDP (Enabled), Thin Provision (Enabled), ILM (Enabled), Enclosure Supported (31), Maximum Read-Only Snapshots Permitted (1022), and Maximum Container Size in TB (256). There is an "Update license" button at the bottom right of the window.</p> <table border="1" data-bbox="391 636 1349 1052"> <thead> <tr> <th>Feature</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td>Customer ID</td> <td>MACHINE249</td> </tr> <tr> <td>iSCSI</td> <td>Enabled</td> </tr> <tr> <td>NAS</td> <td>Enabled</td> </tr> <tr> <td>Sync Replication</td> <td>Enabled</td> </tr> <tr> <td>SAR</td> <td>Enabled</td> </tr> <tr> <td>JAR</td> <td>Enabled</td> </tr> <tr> <td>WDS</td> <td>Enabled</td> </tr> <tr> <td>HA</td> <td>Enabled</td> </tr> <tr> <td>SAS</td> <td>Enabled</td> </tr> <tr> <td>CDP</td> <td>Enabled</td> </tr> <tr> <td>Thin Provision</td> <td>Enabled</td> </tr> <tr> <td>ILM</td> <td>Enabled</td> </tr> <tr> <td>Enclosure Supported</td> <td>31</td> </tr> <tr> <td>Maximum Read-Only Snapshots Permitted</td> <td>1022</td> </tr> <tr> <td>Maximum Container Size in TB</td> <td>256</td> </tr> </tbody> </table>	Feature	Status	Customer ID	MACHINE249	iSCSI	Enabled	NAS	Enabled	Sync Replication	Enabled	SAR	Enabled	JAR	Enabled	WDS	Enabled	HA	Enabled	SAS	Enabled	CDP	Enabled	Thin Provision	Enabled	ILM	Enabled	Enclosure Supported	31	Maximum Read-Only Snapshots Permitted	1022	Maximum Container Size in TB	256
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