



Tiger Box 1U4 Assembly Guide

<i>Product Overview</i>	3
<i>Site Installation</i>	5
<i>Hardware Monitoring</i>	18
<i>Post Installation Maintenance</i>	21
<i>System Restore</i>	23
<i>Initial Setup of the Appliance</i>	24

© Copyright 2019 Tiger Technology. All rights reserved.

TO THE EXTENT ALLOWED BY LOCAL LAW, NEITHER TIGER TECHNOLOGY NOR ITS THIRD PARTY SUPPLIERS MAKE ANY OTHER WARRANTY OR CONDITION OF ANY KIND, WHETHER EXPRESS OR IMPLIED, WITH RESPECT TO THE TIGER TECHNOLOGY PRODUCTS, AND SPECIFICALLY DISCLAIM THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, SATISFACTORY QUALITY, AND FITNESS FOR A PARTICULAR PURPOSE.

Limitations of Liability

To the extent allowed by local law, the remedies provided in this Warranty Statement are the customer's sole and exclusive remedies.

TO THE EXTENT ALLOWED BY LOCAL LAW, EXCEPT FOR THE OBLIGATIONS SPECIFICALLY SET FORTH IN THIS WARRANTY STATEMENT, IN NO EVENT SHALL TIGER TECHNOLOGY OR ITS THIRD PARTY SUPPLIERS BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WHETHER BASED ON CONTRACT, TORT, OR ANY OTHER LEGAL THEORY AND WHETHER ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Local Law

This Warranty Statement gives the customer specific legal rights. The customer may also have other rights that vary from state to state in the United States, from province to province in Canada, and from country to country elsewhere in the world.

To the extent that this Warranty Statement is inconsistent with local law, this Warranty Statement shall be deemed modified to be consistent with such local law. Under such local law, certain disclaimers and limitations of this Warranty Statement may not apply to the customer. For example, some states in the United States, as well as some governments outside the United States (including provinces in Canada), may:

Preclude the disclaimers and limitations in this Warranty Statement from limiting the statutory rights of a consumer (e.g., the United Kingdom);

Otherwise restrict the ability of a manufacturer to enforce such disclaimers or limitations; or Grant the customer additional warranty rights, specify the duration of implied warranties which the manufacturer cannot disclaim, or not allow limitations on the duration of implied warranties.

FOR CONSUMER TRANSACTIONS IN AUSTRALIA AND NEW ZEALAND, THE TERMS IN THIS WARRANTY STATEMENT, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE, RESTRICT, OR MODIFY, AND ARE IN ADDITION TO, THE MANDATORY STATUTORY RIGHTS APPLICABLE TO THE SALE OF TIGER TECHNOLOGY PRODUCTS TO SUCH CUSTOMERS.

Tiger Technology reserves the right to revise and improve its products as it sees fit. This publication describes the state of this product at the time of its publication, and may not reflect the product at all times in the future.

THIRD-PARTY TRADEMARKS

All other brand names, product names, or trademarks belong to their respective holders.

Title: Tiger Box 1U4 Assembly Guide
Hardware model: 1.0
Date: December 27, 2019

Manual Revision and Control

Revision Record

Date	Description	Version
27 Aug 2014	Initial Draft	1.0
29 Nov 2017	Steps for performing system restore added.	1.0
29 Nov 2017	Initial setup of the appliance section added.	1.0
11 Jun 2018	Audible Alarm section added.	1.0

Congratulations on your purchase of Tiger Box 1U4, the starter version of Tiger Technology's all-in-one shared storage appliance. This manual describes how to install and connect Tiger Box 1U4 at your site - from unpacking the appliance to powering on the system and setting it up.

Before proceeding, make sure that you have read carefully all instructions, paying special attention to the following symbols used in this guide:



SAFETY WARNING



IMPORTANT NOTE



TIP

You can find the most up-to-date version of this manual at the following address:
<https://www.tiger-technology.com/software/tiger-store/docs>

Product Overview

Tiger Box 1U4 is a state of the art, high-performance shared storage system that offers the simplicity of NAS and the performance characteristics of a true SAN. The compact rack-mountable 1U appliance combines a metadata controller and highly optimized RAID 5 storage, comprised of 4 enterprise-class drives (drive capacity depends on specific configuration), which can be accessed by client computers via 8/16Gb Fibre Channel, 10Gb Ethernet and/or 1Gb Ethernet.

The appliance is shipped fully configured to you. To deploy it you should simply:

1. Rack-mount the appliance or install it on a table top (see “Install Tiger Box” on page 8).
2. Install the drive carriers in the enclosure (see “Installing the Drives” on page 9).
3. Connect the appliance to the power source and turn it on (see “Connecting The Appliance to The Power” on page 13).

4. Connect client computers to the ports of the appliance - 8/16Gb FC, 10GbE and/or 1GbE, depending on the model (see “Cabling Tiger Box” on page 15).
5. Perform the initial setup of the appliance (see “Initial Setup of the Appliance” on page 24).

Tiger Box 1U4 Features

- 1U, 19" rack-mount chassis with excellent anti-vibration mechanical design and thermal solution.
- RAID 5 shared storage comprised of 4 hot-swappable drives (a failed RAID drive can be replaced while the system is operating and no data on the volume will be lost).
- 8/16Gb Fibre Channel, 10GbE and/or 1GbE ports for connecting client computers.
- Redundant power supply (a failed power module can be replaced while the system is operating).
- 6 x dual-rotor cooling fan modules.
- 2 x internal 2.5" system drive (RAID 1).
- 1 x SAS port for directly connecting Tiger Box expansion chassis.
- Tiger Store software for shared storage management and diagnostics.

Package Content

The package you have received weighs approximately 25kg (55 lbs) and has the following dimensions:



It must contain the following:

- 1 x 1U, 19" rack-mount chassis
- 4 x 3.5" disks each installed in a hot-swappable drive carrier
- (optional) 1 x 3.5" spare disk installed in a hot-swappable drive carrier for online recovery of a failed RAID disk
- 1 x rack-mount rails kit:
 - 2 x slide rails
 - 8 x screws for attaching the rails to the rack
 - printed instructions for installing the rails
- 2 x power cables

- 1 x 1.80m UTP network cable
- 1 x system restore USB flash drive



Important: If any of the components listed above is missing from your shipment, please contact your reseller or Tiger Technology support immediately.



Important: Check if both warranty stickers at the back of the chassis are intact. If a warranty sticker is damaged, immediately contact Tiger Technology at support@tiger-technology.com

Hardware Overview

Note: The pictures used to illustrate the product in this manual may differ from the Tiger Box appliance you have received depending on the model and firmware version.

Technical Characteristics

Description	Specification
Chassis dimensions	27.59"(D) x 17.2" (W) x 1.71" (H) 700.7 mm (D) x 437 mm (W) x 43.5 mm (H)
Net weight (without drives installed)	approx. 20kg/44lbs
Gross weight (with RAID drives installed)	approx. 24kg/53lbs
Power Consumption Max	450 Watts
Power Consumption Idle	120 Watts
Power Supply Unit	High-efficiency 450W, 1 + 1 Redundant Power Supply with PFC, AC 100~240V Full Range, 50Hz~60Hz
Temperature Range	Operating: 10°C~35°C (50°F~94.9°F) Non-operating: -40°C~70°C (-40°F~158°F)
Humidity Range	5% ~85% non-condensing

Front View



Apart from the 4 drive bays for the drives comprising the shared storage, Tiger Box's front panel features the following elements:



- system reset button
- USB 2.0 port - for firmware updates and system recovery
- LED indicators for monitoring system activity (see “Monitoring the System Activity” on page 19).
- system power button

Rear View



The back of the appliance features the following elements:

- 2 x power supply modules
- System power button and system reset button
- 2 x SAS port for directly connecting a Tiger Box expansion chassis
- depending on the configuration you have purchased client connectivity through:
 - 8/16Gb FC ports;
 - 10Gb Ethernet ports;
 - 1Gb Ethernet ports;
- 1 x Ethernet port for public and Internet communication (Public port).
- 1 x Ethernet port for safety net access to the appliance (Admin port).

Tiger Box supports the following types of cables for connection of client computers and/or switches:

Clients via Fibre Channel — fibre optic cable with LC connectors for SFP+ transceivers.

Clients via 10GbE — depending on the 10GbE adapter model:

- fiber-optic cable with LC connectors for SFP+ transceiver or copper cable with SFP+ transceiver
- patch cable with RJ-45 modular connectors

Clients via 1GbE — patch cable with RJ-45 modular connectors.

Site Installation

Unpack Tiger Box



Important: Do not throw away any of the packaging components, until you ensure that the appliance works properly and there is no need to return any part.



Tip: It is advisable to keep all packaging components until the warranty of your appliance expires.

1. Cut the straps of the box, cut or remove the tape and open the flaps.



2. One by one take out the RAID drives and then their foam case.



3. Take out the foam case with the appliance and the bezel, holding it at each side, and place it on a surface, ensuring that the system remains stable.



Important: Tiger Box weighs approximately 20kg. Attempting to move it without assistance could cause personal injury. Request assistance and use proper lifting techniques when lifting the appliance.

4. Take out the cases with the rack rails kit and the cables.



5. Holding the appliance, remove the foam protectors.



6. Remove the bezel from the foam protector.



Install Tiger Box

Before installing Tiger Box 1U4 in a rack or on a table top, consider the limitations for maximum cable lengths, when deciding on the location of the appliance within your facility. Also check the appliance's technical characteristics to make sure that the rack/the table meets the physical, electrical, and thermal specifications.

Rack-mount Tiger Box

You can mount Tiger Box 1U4 in a standard, 19-inch-wide, four-post rack.



A rack-mount rails kit is included in your shipping. If you are installing Tiger Box in a rack, follow the instructions supplied in the rack-mount rails kit to install the appliance.



Tip: Install the heaviest devices in the lowest position in the rack. To make the lift of Tiger Box easier, insert the RAID drive carriers after installing the appliance in the rack.

Install Tiger Box on a Table Top

If you do not plan to install your Tiger Box 1U4 in a rack, and you opt for tabletop installation, ensure that:

- the surface is clean and in a safe location;
- the appliance is stable, its bottom faces down and its top faces up.



Tip: To determine the top and bottom of the appliance, use the text direction on the printed labels.

- the appliance is installed off the floor to avoid drawing dust accumulated on the floor into the interior of the appliance by the cooling fans.



Important: Excessive dust inside the appliance can cause overheating and component failures.

- there must be at least 50cm (19 inches) of clearance at the front and rear of the appliance for installing and replacing the RAID drives, or accessing network cables or equipment;
- the appliance receives adequate ventilation (it is not being installed in an enclosed cabinet where ventilation is inadequate);
- the appliance is not in close proximity to devices that emit strong electromagnetic waves;

Installing the Drives

Tiger Box is shipped to you with a pre-configured RAID 5 storage, comprised of 4 disks. Each disk is installed in a hot-swappable drive carrier. You can replace a failed hard disk, while Tiger Box is operating and no data on the storage will be lost (see “Replacing a Failed Drive” on page 21). For safety reasons, the drives in the carriers are shipped separately and you should install them yourself in the appliance.



Important: To prevent drive failure, in case the drives have been transported to you in cold environment (temperature less than 15°C/59°F), let the drives return to room temperature for at least 3 hours, before installing them in the enclosure.

Each drive is labeled and must be inserted in the drive bay corresponding to its number as described in this scheme:



Tip: If you intend to rackmount the appliance, to make the lift easier, insert the drive carriers after installing the appliance in the rack.



Warning: Before proceeding, make sure that the power cord is disconnected from the power source!



Important: To prevent electrostatic discharge (ESD), touch grounded metal before touching any of the appliance components. You can also prevent ESD when inserting the drive carrier into the enclosure, by holding the appliance enclosure with the other hand.

To install the drives:

1. Take out a drive carrier from its antistatic bag.



Important: Handle the hard drive by the sides only, making sure you don't touch the printed circuit board or the connectors.



2. Press upwards the lever release button on the front of the drive carrier.



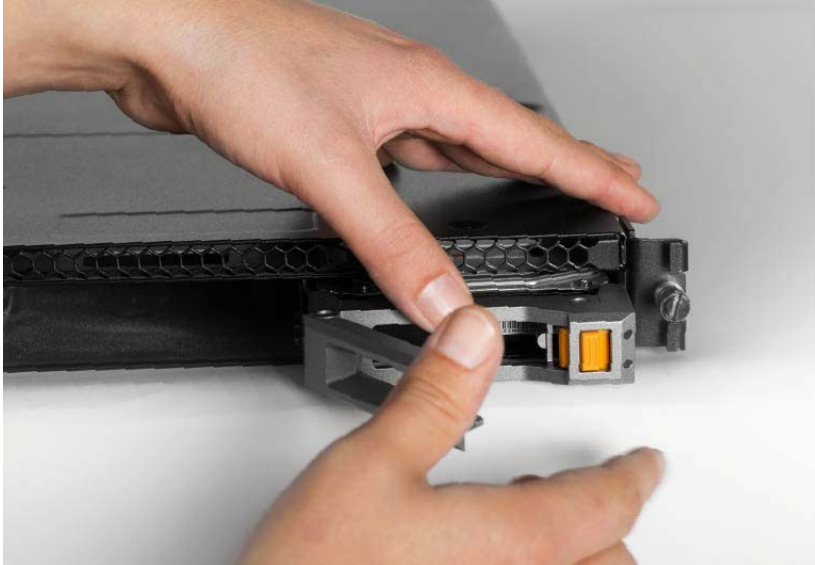
The lever opens.



3. Find the label on the drive that specifies its corresponding drive bay.



4. Slide the drive carrier into the corresponding slot until the lever makes contact with the enclosure.



5. Push the lever up to finish sliding the drive carrier into the drive bay. To ensure that the lever is locked, you must hear a clicking sound.



6. To check that the drive carrier is properly installed and makes full contact with the drive bay, try to pull it out without unlocking the lever.



Important: If the drive can be pulled out, repeat the steps for installing it from the beginning.

7. Repeat the above steps for each drive in the kit.

Install The Front Panel Bezel

Tiger Box is shipped with a bezel, which should cover the front panel.

You may have to remove the bezel in order to:

- monitor RAID drives activity (see steps on page 19)
- replace a failed RAID drive (see steps on page 21)
- power on/off or restart the appliance
- perform system restore.



Tip: You can install/remove the bezel at any time without having to turn off or dismount the appliance from the rack.

To install the bezel:

1. Insert the tabs on each end of the bezel into the flanges on each side of the appliance's front panel.



2. Using your index finger, push inward the release latch at each side of the bezel and slightly push the bezel to the front panel until you hear a clicking sound.



To remove the bezel, with your index finger push inward the release latches at each

side of the bezel and gently pull it away from the front panel:



Connecting The Appliance to The Power

Your Tiger Box 1U4 is shipped to you with two power supply modules, installed in the rear of the appliance. These modules supply redundant power to Tiger Box - should a power supply module fail, you can replace it while the system is operating (see “Replacing a Failed Power Module” on page 21). You can replace a failed power module only with a power module of the same model.

To connect the appliance to the power supply:

1. Plug the power cord in the power socket of the power supply module.



2. Connect the power cord to the power outlet.

If the appliance is properly connected, the power module LED indicator will display solid green light. If there's problem with the module installation, its LED indicator is red (blinking or solid) or there is no light at all.



Powering On The Appliance



To power on the appliance:

Note: If the front panel bezel is installed, to power on/off or restart the appliance you must first remove the bezel, following the steps in “Install The Front Panel Bezel” on page 12.

1. Press once the power button  on the front panel of the appliance.
2. Wait until the power status LED at the front becomes solid green.

To power off the appliance:



Important: It is advisable to always attempt to shut down the appliance through the web UI, before resorting to hard shut down.

Press continuously the power button  on the front panel of the appliance, until the power status LED's light goes off.

To restart the appliance:



Important: It is advisable to always attempt to restart the appliance through the web UI, before resorting to forced restart of the system.

Press the Reset button on the front panel of the appliance.

Cabling Tiger Box

Tiger Box 1U4 features a Public network port for connection to a computer, from which to perform the initial setup of Tiger Box and assign IP addresses to all available network ports. Before cabling Tiger Box 1U4 it is important to carefully plan the topology of your network. Client computers can connect to Tiger Box as SAN clients (connected via Fibre Channel) or LAN clients (connected via 1GbE or 10GbE). While SAN clients need the additional network connection (through a 1GbE/10GbE port) for metadata exchange with Tiger Box, LAN clients use only one network port for both data traffic and metadata exchange. As metadata overhead is kept to an absolute minimum, there's no need to connect each SAN client to a separate network port, but rather connect them to the Public port through an Ethernet switch and spare the remaining network ports for connecting LAN clients. You can connect client computers directly to the available FC/10GbE/1GbE ports for full bandwidth, or you can expand the number of connected clients by deploying FC/Ethernet switches. Note that in this configuration the bandwidth available to each node decreases, as additional nodes are added.

Important: If you want to connect your Fibre Channel clients using multipathing, prior to connecting them to the appliance, contact Tiger Technology support for instructions.

Tiger Box also allows you to team the ports of a single 1/10GbE NIC (the Ethernet switch or the client computer NIC must support link aggregation). Besides allowing a network card to be accessed through a single IP address, and sparing you the need to specify a separate IP address for each port, port teaming also can provide more bandwidth through a single IP address.



Important: It is advisable when planning the topology of the network, to make sure that no client computer has more than one network connection (through two or more IP addresses) to the appliance - for example, direct connection through a 10GbE port and connection through an Ethernet switch.

Additionally, Tiger Box 1U4 features an Admin network port, which is assigned a preset IP address, which you cannot change. The Admin port is designed as a safety net, providing you with access to web interface in case you misconfigure the appliance's network identification and fail to connect to it.

To connect a computer to the Public port:

1. Plug one end of the network cable provided in the shipment in the port with label Public port.



2. Plug other end of the network cable in the LAN port of the computer, from which you want to perform the initial setup.

Note: If you intend to provide SAN computers with network communication to the appliance through the Public port, once you perform the initial setup, you can disconnect the computer, from which you have performed the setup, and connect the Public port to an Ethernet switch, to which to connect all SAN computers.

To connect a SAN computer:

Note: Your Tiger Box shipment does not include fiber optic and copper Fibre Channel cables. The FC ports are with optical SFPs.

1. If your fiber-optic cable has protective caps, remove them.
2. Plug one end of the fiber-optic cable into the SFP socket of the appliance port.



3. Do one of the following:

- Plug other end of the fiber-optic cable in the port of the Fibre Channel card of the client computer.
- Plug other end of the fiber-optic cable in the port of the Fibre Channel switch and then connect the switch to the client computer's FC port.

Note: If you opt for interconnection via switch, refer to your switch documentation for further setup instructions.

4. Plug one end of the network cable into one of the available network ports of the appliance.

Note: As metadata overhead is kept to an absolute minimum, there's no need to connect each SAN client to a separate network port, but rather connect them to

the Public port through an Ethernet switch and spare the remaining network ports for connecting LAN clients.



5. Do one of the following:

- Plug other end of the network cable in the port of the network card of the client computer.
- Plug other end of the network cable in the port of the Ethernet switch and then connect the switch to the client computer's network port.

Note: If you opt for interconnection via switch, refer to your switch documentation for further setup instructions.

To connect a LAN computer via 10GbE port:

Note: Your Tiger Box shipment does not include copper and fiber-optic cables.

1. Plug one end of the cable into the 10GbE port of the appliance.



2. Do one of the following:

- Plug other end of the cable in the 10GbE port of the client computer.
- Plug other end of the cable in the 10GbE port of the Ethernet switch and then connect the switch to the client computer's 10GbE port.

Note: If you opt for interconnection via switch, refer to your switch documentation for further setup instructions.

To connect a LAN computer via 1GbE port:

Note: Your Tiger Box shipment does not include twisted pair cables.

1. Plug one end of the cable into the network port of the appliance.



2. Do one of the following:
 - Plug other end of the cable in the network port of the client computer.
 - Plug other end of the cable in the port of the Ethernet switch and then connect the switch to the client computer's network port.

Note: If you opt for interconnection via switch, refer to your switch documentation for further setup instructions.

To connect a computer to the Admin port:

1. Plug one end of the network cable provided in the shipment in the port with label Admin port.



2. Plug other end of the network cable in the LAN port of the computer, from which you want to access the web interface.

Important: The Admin port is designed solely as a safety net, allowing you to access the web interface, when you have misconfigured the appliance's network identification and fail to access it from any computer.

Hardware Monitoring

Audible Alarm

The appliance sounds an audible alarm (beeping), in case of a power supply error - a power module has failed or is not present. To confirm the problem, check the power status LED on the front panel bezel (see "Monitoring the System Activity" on page 19).

Note: The alarm continues beeping until the problem is resolved.

Monitoring the System Activity

The LEDs on the bezel of Tiger Box allow you to monitor the system activity. You can monitor the system activity without removing the front panel bezel:



Indicator	LED color	Status	Description
 system activity LED	green	solid	system is idle
	green	slow blinking (once a second)	maintenance operations running while system is idle (like disk defragmentation, for example)
	green	fast blinking (more than 4 times a second)	system is busy
 network activity LED	amber	blinking	online
	-	-	offline or no transaction
 power failure LED	red	solid	power supply error or no power
	-	-	OK

fan failure LED 	red	blinking	error or fan failure
	-	-	OK
power status LED 	green	blinking	stand by (power is on, but the system is not turned on)
		solid	power on

Monitoring RAID Drives Activity

Note: To monitor RAID drives activity, you should remove the front panel bezel.

You can monitor the activity of the RAID drives using the LED indicators on the top of each HDD carrier:



Indicator	LED color	Status	Description
HDD power (right indicator)	blue	solid	HDD power on
	-	-	HDD power off
HDD status (left indicator)	green	blinking	data I/O activity
	green	solid	(SAS disks) idle state
	red	solid	HDD failure or error
	-	-	(SATA disks) idle state



Important: To diagnose RAID drive failure, it is advisable to regularly check the RAID status in the Storage page of Tiger Store's web UI (refer to the Tiger Store Administration Guide). Degraded RAID status indicates that a drive has failed and needs to be replaced with the spare drive, following the steps described in "Replacing a Failed Drive" on page 21.

Monitoring Client Connectivity

You can monitor the connectivity of SAN/LAN clients using the LED indicators on the FC/10GbE/1GbE ports respectively.

FC ports

Your configuration can include 8Gb or 16Gb FC cards. The FC cards are set up to work in auto mode i.e. their ports transmit data depending on the connectivity mode of the client's (or the switch's) FC card. You can view the transmission mode through any FC port using the LED indicators above it. If the FC port LED's light is off the port is inactive.

8Gb Cards

Indicator	LED color	Status	Description
left	green	solid	2Gb mode
right	green	solid	4Gb mode
both	green	solid	8Gb mode

16Gb Cards

Indicator	LED color	Status	Description
left	green	solid	4Gb mode
right	green	solid	8Gb mode
both	green	solid	16Gb mode

10 GbE Ports

You can view the status of your connection through a 10GbE port using the LED indicator above it.

Indicator	LED color	Status	Description
activity LED (left indicator)	green	blinking	The adapter is sending or receiving network data at up to 10Gbps.
	-	-	No network activity on the link.

link LED (right indicator)	amber	solid or blinking	The 10GbE LAN card is initialized.
	-	-	The adapter is not receiving power or the 10GbE LAN card is not initialized.

1 GbE Ports

You can view the status of your connection through an 1 GbE port using the LED indicators above it.

Indicator	LED color	Status	Description
speed LED (left indicator)	amber	solid	Operating as a Gigabit connection (1000 Mbps).
	green	solid	Operating as a 100-Mbps connection.
	-	-	Operating as a 10-Mbps connection.
link LED (right indicator)	green	blinking	There is activity on this port.
	-	-	No link is established.

Monitoring Power Supply

You can monitor the activity of the power modules using their LED indicator:



Indicator	LED color	Status	Description
-----------	-----------	--------	-------------

power module	green	blinking	system is in stand by mode
		solid	system is in normal mode
	red	blinking	no power
		solid	power module failure

Post Installation Maintenance

Replacing a Failed Drive

You can replace a failed hard disk, while Tiger Box 1U4 is operating and no data on the storage will be lost. If your order includes a spare drive, it is shipped to you pre-installed in a drive carrier and is ready to replace the one that has failed.

You can also replace a failed drive with a drive not included in your shipment. In this case the new drive must be exactly the same size and make as the one that has failed. Additionally, you should uninstall the failed drive from its drive carrier and then install the replacement drive in the carrier.



Important: Periodically check the RAID status in the Storage page of Tiger Store's web UI. Degraded RAID status indicates that a drive has failed and needs to be replaced. If more than one RAID drive fails, the RAID will become inaccessible and data loss is possible.

To replace a failed RAID disk with the spare drive:



Important: To prevent electrostatic discharge (ESD), touch grounded metal before touching any of the appliance components. You can also prevent ESD when inserting the drive carrier into the enclosure, by holding the appliance enclosure with the other hand.

1. Remove the front panel bezel.
2. Find the failed drive - its HDD status LED indicator (the left indicator) is red.
3. Press the lever button on the front of the drive carrier to release the lever and gently pull out the drive carrier.



Important: If by accident you pull out other than the failed drive, the RAID becomes offline. Insert back the healthy drive and wait until the RAID is again online. After that find the failed drive and proceed with the steps.

4. (if your order does not include a spare drive) Uninstall the failed drive from its drive carrier and then install the replacement drive in the carrier.
5. Insert the drive carrier with the spare disk into the drive bay, following the steps on page 9.
6. When the HDD status LED of the drive stops blinking, rebuild the RAID, following the steps described in the Tiger Store Administration Guide.



Important: Make sure you order an additional spare drive in case another RAID drive fails in the future.

Replacing a Failed Power Module

Your Tiger Box 1U4 is shipped to you with two power supply modules, installed in the rear of the appliance. These modules supply redundant power to Tiger Box - should a power supply module fail, you can replace it while the system is operating. You can replace a failed power module only with a power module of the same model.

To replace a failed power module:

1. Find the failed power module (the light of its LED indicator is solid red).



2. Unplug its power cable from the module's socket.



3. Holding the lever of the power module with your index finger, push the side tab to the right and slide out the unit from the appliance.



4. Slide in the new power module and hear the side tab click into the bay.



5. Plug the power cable in the module's socket and power on the appliance.



System Restore



Important: Do not plug the USB flash drive from your Tiger Box appliance shipment in the USB port of any other computer.

Use the USB flash drive included in your Tiger Box appliance shipment to restore the appliance to the factory default settings in case of system malfunction or failure.

Important: All your settings (IP addresses, defragmentation preferences, password for the web interface, etc.) will be lost after restoring the system to the default factory settings.

Follow the instructions below or contact Tiger Technology support for assistance at: support@tiger-technology.com

To perform system restore:

1. Shut down the appliance.
2. Plug the USB flash drive in the USB port of the appliance and press the power button to start it.
When the system restore finishes, the appliance automatically shuts down.
3. Unplug the USB flash drive and press the power button of the appliance to start it.
4. Wait several minutes until the appliance node shuts down again and then press the power button to start it.

Note: On appliances shipped before 20 December 2016, the system restarts automatically instead of shutting down one last time before the appliance is ready. To ensure that the system restore is finalized, wait between 5 and 10 minutes before attempting to access it.

Initial Setup of the Appliance

Before you begin work with the product on a Tiger Box appliance, you need to perform its initial setup. The initial setup includes the following procedures:

- Configure the IP address of each network port of the appliance (see “Configure the IP Addresses of the Appliance” on page 26).
- Change the name of the appliance (see “Change the Name of The Appliance” on page 27).
- Specify the time and date settings of the appliance (see “Specify The Time and Date Settings of the Appliance” on page 28).
- Set the environment in which Tiger Box operates - workgroup or Active Directory domain (see “Select The Deployment Environment of Tiger Box” on page 28).

Once you go through the initial setup, Tiger Box can operate normally without having to change any of its settings. Later on you can change any of the settings that you have specified during the initial setup from any computer that has access to Tiger Store’s web interface.

You can perform the initial setup of the appliance in the web interface of your storage server.

Access the Web Interface

Tiger Box appliances are shipped to you with preset IP address of the Public port (172.16.100.100) and a preset address of the Admin port (1.2.3.4 or 1.21.32.1), if such port is predefined by vendor.

Note: The Admin port is designed as a safety net in case you misconfigure the appliance’s network identification and fail to connect to it. For detailed procedure, refer to steps on page 25.

To access the web interface of the appliance for the first time, your computer should be connected to the Public port of the appliance and should use an IP address that is on the same subnet as the preset IP address of the Public port. During the initial setup of Tiger Box, you can change the IP address of the Public port and of all other network ports of the appliance (except the Admin port), letting all computers on the same network (with or without the Tiger Client software installed) access Tiger Store’s web interface.

To access the web interface of the appliance for the first time:

1. Connect your computer to the Public port of the appliance directly or through an Ethernet switch.

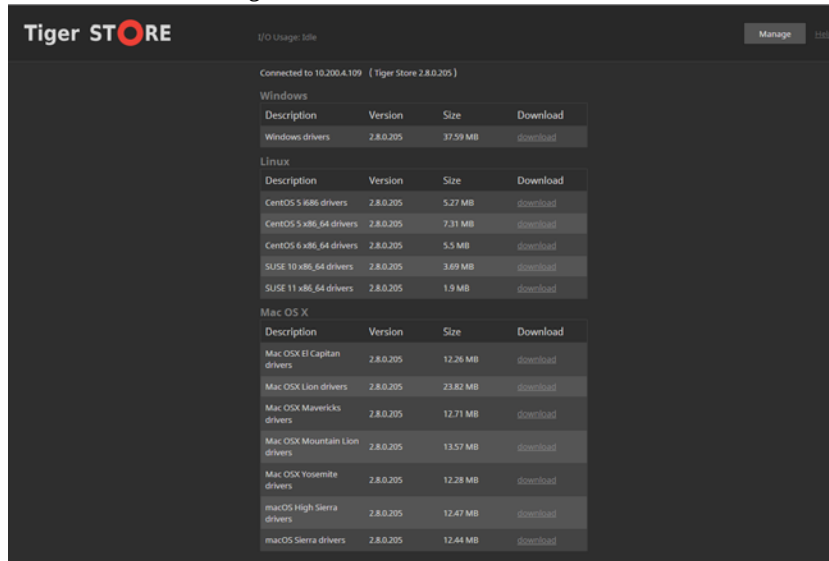
Important: It is advisable to connect directly to the Public port, if another computer on the network has the same IP address (172.16.100.100), as conflicts may arise.
2. Make sure the IP address of your computer is on the same subnet as the Public port (set it to 172.16.100.101, for example).

Note: For more details about changing your IP address, refer to the documentation of your operating system).

Tip: Once you finish the initial setup and set another IP address to the Public port, you can revert back to your old IP address.
3. In a web browser, type the pre-defined IP address of the appliance for the Public port:
172.16.100.100

4. Press Enter.

The web interface of Tiger Store loads.

5. Click Manage and enter the following password:
admin**To access the web interface through the Admin port:**

Important: You can access the appliance through the Admin port if such port is predefined by your vendor.

1. Set the IP address of the computer on which you will connect to the Admin port to be on the same network as the preset IP address of the Admin port - 1.21.32.1 (for Tiger Box appliances shipped before 01 November 2016) or 1.2.3.4 (for Tiger Box appliances shipped after 01 November 2016).

Important: Even though your Tiger Box may be keeping the original IP address (1.21.32.1), should you restore on the appliance a firmware image from a USB flash drive, which has been sent to you after 01 November 2016, the IP address of the Admin port will change to 1.2.3.4.

For example, if the Admin port of your appliance uses IP address 1.21.32.1, set the IP address of your computer to 1.21.32.2 and the subnet mask to 255.255.255.0. If

the Admin port of your appliance uses IP address 1.2.3.4, set the IP address of your computer to 1.2.3.10 and the subnet mask to 255.255.255.0.

2. Connect the computer to the Admin port of the appliance.

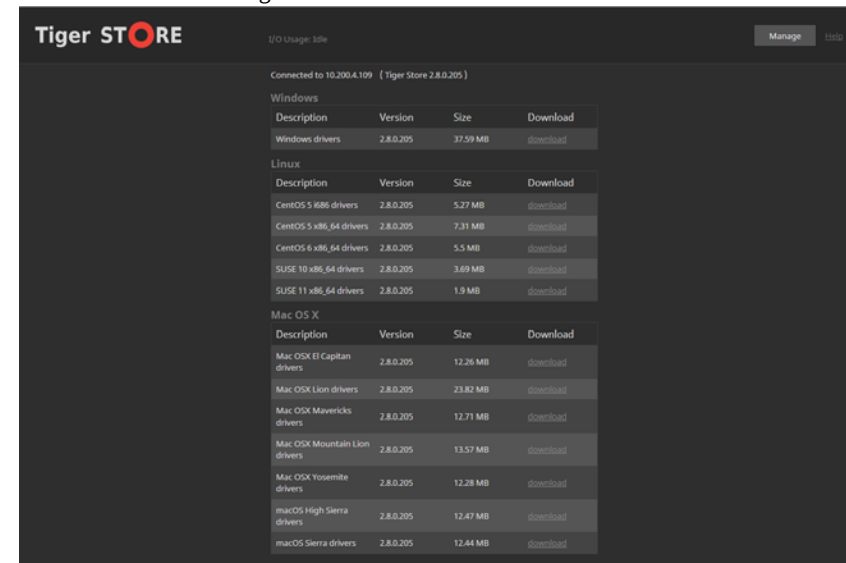
3. In a web browser, type the preset IP address of the appliance for the Admin port:
1.21.32.1

or

1.2.3.4

4. Press Enter.

The web interface of Tiger Store loads.



5. Click Manage and type the password for the web interface.

Configure Appliance Identification and Connectivity

Each Tiger Box appliance is identified in the network by IP address and name (by default, this is the serial number of the appliance).

The appliance must have an IP address for each network port through which it communicates with Tiger Clients (directly or via an Ethernet switch). The IP address of each network port must be on the same LAN as the Tiger Client that will communicate with the appliance through this port. For more information, refer to “Configure the IP Addresses of the Appliance” on page 26.

Tiger Box supports teaming of the ports of each network card. If you choose to team the ports of a network card, all its ports will be accessible through just one IP address. To benefit from ports teaming, you must use an Ethernet switch, which supports Link Aggregation Control Protocol (IEEE 802.1ax, LACP) and is set up for teaming.

Additionally, Tiger Box allows you to assign two or more IP addresses to the same network card, thus making it accessible from networks on different subnets.

Changing the name of the appliance can be useful to more easily identify your appliance on the network or, if you deploy more than one Tiger Box appliances in your organization, to facilitate you in distinguishing them. For more information, refer to “Change the Name of The Appliance” on page 27.

Team/Unteam Network Ports

To facilitate you with assigning IP addresses to the network ports of the appliance, Tiger Box allows you to team the ports of a single network card. This way all ports of a network card will be accessible through a single IP address.

Important: To benefit from ports teaming, you must use an Ethernet switch, which supports Link Aggregation Control Protocol (IEEE 802.1ax, LACP) and is set up for teaming.

You can unteam the ports of a network card at any time. When you unteam the ports of a network card, they are automatically assigned the IP addresses they have had before teaming them - either the default ones assigned by the appliance, or the ones you have manually specified. Should you decide to team the ports again, you will have to specify the IP address manually again.

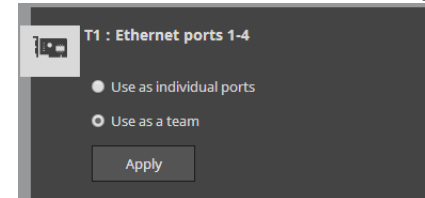
To team/unteam the ports of a network card:

1. In the left pane of Tiger Store’s web interface, click System and then Network Configuration.

The page lists all detected network cards, except the Public port and the Admin port, if such is predefined.

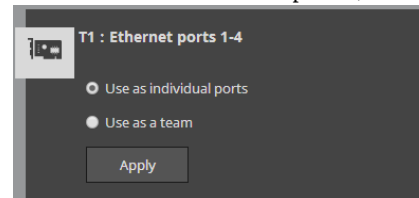
2. In the tile of a network card, do one of the following:

- Select Use as a team, and then click Apply.



The teamed ports are listed on the IP Configuration page, where you can assign an IP address to them.

- Select “Use as individual ports”, and then click Apply.



The ports are listed on the IP Configuration page individually with their previous IP addresses (the ones you have manually specified, or, if none has been specified, the default ones).

Configure the IP Addresses of the Appliance

Your Tiger Box appliance can have any of the following network ports:

Public port — 1GbE port designed to connect the appliance to your corporate network and provide it with access to shared resources and the Internet and also used for metadata exchange between the appliance and Fibre Channel Tiger Clients.

1/10GbE ports — designed to provide for both data and metadata traffic of Tiger Clients connected to the appliance via 10GbE connection.

You must set an IP address for each network port through which the appliance is connected to Tiger Clients (directly or via an Ethernet switch) - the Public port and all other available network ports or port teams. The IP address you assign to each network port must be on the same subnet as the Tiger Client that will communicate

with the appliance through this port. If computers in your facility are already interconnected in a LAN, you can simply assign an IP address to the Public port in the same subnet.

When a LAN client can reach the appliance both through the Public port and another faster port, to ensure that the Tiger Client always mounts the shared volumes over the faster connection, it is advisable to set the IP addresses of the faster ports of both the appliance and the Tiger Client to be on a separate subnet of the LAN used by the Public port. For more information refer to the “Assigning IP Addresses to Network Ports” best practices topic in the latest version of the product release notes.

Important: Whenever you introduce changes to the IP settings of Tiger Box, on all Tiger Clients you may have to re-add the appliance to the storage servers list, in order to ensure that they can connect to it.

IP Addresses Limitations

When assigning IP addresses to the network ports of Tiger Box, make sure that you avoid the following IP addresses as they are either link-local addresses or are in use by Tiger Box services:

- Link-local addresses in the range 169.254.0.0 - 169.254.255.255
- IPMI addresses in the range 1.1.1.0 - 1.1.1.255

To assign an IP address to a network port:

1. In the left pane of Tiger Store’s web interface, click System and then IP Configuration.

The IP Configuration page loads. It lists the tiles of the Public port and all individual and/or teamed network ports.

2. In the tile of the respective port or team, enter the IP address and subnet mask.

The screenshot shows the 'Public' network configuration interface. It includes a tree icon and the title 'Public'. Below this, there are four rows of configuration fields: IP Address (10.200.6.37), Subnet (255.255.0.0), IP Address (empty), and Subnet (empty). Each row has a '+' and '-' button to its right. Below these are fields for Router (10.200.0.1) and DNS Server (10.200.200.14). At the bottom is an 'Apply' button.

Note: As the Public port is also used for connection to the Internet, you can also specify router and DNS server details.

3. (optional, to assign additional IP address) Click the + button and add an additional IP address and subnet mask for the same network port.

Tip: You can add as many IP addresses to the same port, by clicking the “+” button. To remove one of the IP addresses, simply click “-” next to it.

4. Click Apply.

Change the Name of The Appliance

By default, each Tiger Box appliance is shipped to you with a pre-configured name - the appliance’s serial number, printed at the back of the chassis and visible in the About page of the web interface.

Note: If you rename a Tiger Box appliance after client computers have already added it to their storage servers list, you may have to manually edit the appliance’s name on client computers (refer to the “Tiger Client User’s Guide”).

To rename the appliance:

Important: To rename the appliance you will have to reboot it.

1. In the left pane of Tiger Store's web interface, click System and then Settings.
2. In Appliance Name, enter a new name of the appliance and click Apply.

3. Confirm that you want to change the name of the appliance when prompted.
4. In the left pane, select System and then Maintenance.
5. In System Reset drop down box, select “Full system reboot” and then click Full system reboot.

Specify The Time and Date Settings of the Appliance

To ensure the normal work of Tiger Box, you should set the time and date of the appliance as soon as you turn it on. It is advisable to use the same date and time settings on all computers on your Tiger Box network.

To specify the time and date settings of the appliance:

1. In the left pane of the web interface, click System and then Settings.
2. In Date and Time, select the desired date, time zone and specify the exact time.

3. Click Set Date and Time.

Select The Deployment Environment of Tiger Box

By default, Tiger Box is configured to operate in workgroup environment - the appliance is pre-configured as a member of the WORKGROUP workgroup and any user that can connect to it, has access to all resources on the shared volumes. If your appliance is on the same network as an Active Directory domain controller, you can add the appliance to the domain and benefit from access permissions to files and folders for domain users. For the purpose, you should simply specify the domain name and authenticate as a user that has permissions to join computers to the selected Active Directory domain.

You can switch the network environment in which Tiger Box is deployed from workgroup to domain and vice versa at any time.

Important: *Setting the network environment of Tiger Box requires that you reboot the appliance.*

To set domain environment for Tiger Box:

1. In the left pane of the web interface, click System and then Settings.
2. In Domain Info, click Domain.

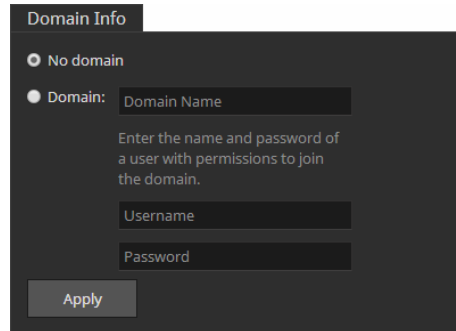
3. In the respective fields, enter the domain name and the user name and password of a user that can join computers to the specified Active Directory domain.
4. Click Apply.
5. In the left pane, select System and then Maintenance.

6. In System Reset drop down box, select Full System Reboot and then click Full system reboot.

When the appliance is online again, accesses to files/folders on the shared volumes are authenticated against the specified Active Directory domain.

To set workgroup environment for Tiger Box:

1. In the left pane of the web interface, click System and then Settings.
2. In Domain Info, click No domain.

The screenshot shows the 'Domain Info' configuration page. At the top, there is a tab labeled 'Domain Info'. Below it, there are two radio button options: 'No domain' (which is selected) and 'Domain:'. The 'Domain:' option is followed by a text input field labeled 'Domain Name'. Below this, there is a text input field labeled 'Username' and another labeled 'Password'. A text instruction reads: 'Enter the name and password of a user with permissions to join the domain.' At the bottom of the form is an 'Apply' button.

The domain controller may require that you authenticate yourself as a user authorized to remove computers from the domain.

3. Click Apply.
4. In the left pane, select System and then Maintenance.
5. In System Reset drop down box, select Full System Reboot and then click Full system reboot.

When the appliance is online again, all users that can mount the shared volumes have unrestricted access to all files/folders on it.