

bruAPP™
BACKUP & RECOVERY APPLIANCE

ADMINISTRATORS GUIDE
INSTALLATION and GETTING STARTED



Backup You Can Trust™



bruAPP™ Backup Appliance Administrator's Guide

Made in U.S.A.

COPYRIGHT STATEMENT

TOLIS Group, Inc., et al
Copyright © 2001–2018 TOLIS Group, Inc. All rights reserved.

Your right to copy this manual is limited by copyright law. Making copies or adaptations without prior written authorization from TOLIS Group, Inc. is prohibited by law and constitutes a punishable violation of the law. To receive permission to reprint or copy information, contact tolispr@tolisgroup.com.

NOTICE OF TRADEMARKS AND SERVICE MARKS

BRU, bruAPP, bruAPP/OS, the TOLIS Group “three-man” Logo, the BRU “b” Logo, BRU Server, BRU Server Agent, BRU Server Server, and BRU Server Console are trademarks or registered trademarks of TOLIS Group, Inc.

“Backup You Can Trust” and “Because It’s the Restore that Matters” are service marks of TOLIS Group, Inc.

The absence of a product, service name or logo from this list does not constitute a waiver of TOLIS Group's trademark or other intellectual property rights concerning that product, service name or logo.

Throughout this manual trademarks are used. TOLIS Group, Inc. states that we are using any and all trademarked names in an editorial fashion and to the benefit of the trademark owner with no intention of infringement of the trademark. For TOLIS Group legal information, please contact brulegal@tolisgroup.com.

NOTICE OF LIABILITY

The information in this manual is distributed “as is” and without warranty. While every precaution has been taken in the preparation of this book, TOLIS Group, Inc. nor its resellers and representatives shall have any liability to any person or entity with respect to any loss or damage caused or alleged to be caused directly or indirectly by the information and instructions contained in this manual or by the computer software and hardware described within.

TOLIS Group, Inc. may revise this publication from time to time without notice.

UPDATE INFORMATION

TOLIS Group, Inc. will always work to ensure that the data contained in this manual is kept up to date. **PLEASE NOTE, DUE TO MANY MODELS, CONFIGURATIONS, AND CUSTOM CONFIGURATIONS, PICTURES IN THIS MANUAL MAY DIFFER FROM YOUR UNIT, HOWEVER, CONCEPTS AND INFORMATION STILL APPLIES.**

PRINTING HISTORY

May 2004:	First Edition
August 2008:	Second Edition
October 2010:	Third Edition
November 2010:	Fourth Edition
March 2012:	Fifth Edition
July 2013	Sixth Edition
April 2014	Seventh Edition
April 2015	Eighth Edition
March 2016	Ninth Edition
January 2018	Tenth Edition
September 2018	Eleventh Edition

Table Of Contents

1 - Important Warranty Information	9
Removing the bruAPP Chassis Cover	9
USB Devices	9
SAS HDD Devices	9
Non-Warranty Repair Information	9
Shipment Packaging Required for RMA.....	9
2 - Thank you!	10
Contact TOLIS Group, Inc.	10
General Inquiries	10
BRU Sales	10
Technical Support	10
3 - bruAPP Box Contents	11
4 - Installation and Connections	12
Initial Connections	12
Connecting a Tape Device.....	13
3U and 4U Chassis SAS Tape Connection.....	13
Fibre-Channel (FC) Tape Devices	13
5 - Rack Installation	14
Identifying the Sections of the Rack Rails	14
Installing the Rear Inner Rails	14
Installing the Rack Rails	15
Installing the 1U/3U/4U bruAPP into the Rack	15
Installing the 1U bruAPP into a Telco Rack	15
Installing the 3U/4U bruAPP into a Telco Rack	16
Rack Mounting Considerations.....	16
Rack Precautions.....	16
Server Precautions	16
Ambient Operating Temperature.....	16
Reduced Airflow.....	17
Mechanical Loading.....	17
Circuit Overloading	17
Reliable Ground.....	17
6 - Powering On Your bruAPP	18
Tower Systems	18
1U Rackmount Systems	18
3U/4U Rackmount Systems	19
7 - Initial Configuration	20

Network Setup	20
Configure Ethernet Port 0	20
Configure Ethernet Port 1	22
Apply Network Settings	22
Setting the Date & Time	22
Set the Date	22
Setting the Time	23
Manually Set the Time	23
Automatically Set the Time	23
Applying the System Date & Time — NTP	24
Setting the RAID Administrator	25
RAID Administrator SMTP Configuration	25
Setting the bruAPP Admin Password	25
Performing the Initial Hardware Scan	26
Final Step: Reboot	27
Setup BRU Server Agents	27
8 - Additional Options	28
bruAPP/OS Main Menu	28
Support Information	28
System Reboot	28
System Poweroff	28
BRU Server Main Menu	28
bruAPP Stage Status	28
BRU Server Text Console	29
BRU Server Hardware Scan	30
BRU Server Agent Configuration	31
BRU Server Daemon Restart	31
BRU Server License & Version Information	31
Update License Information	32
Change Password	32
System Configuration Menu	32
bruAPP/OS Update Check	33
bruAPP/OS Network Settings	34
bruAPP/OS Network Configuration	34
bruAPP/OS Network Test	34
bruAPP RAID Configuration	36
RAID Administration	36
Rebuild RAID	39
bruAPP/OS Date/Time Settings	41
NTP Settings	41
Setting the Timezone	42
Manually Syncing the Time	42

Viewing the Current System Time	42
Viewing the NTP Log	42
Appendix A: End User License Agreement	43
1. LICENSE AND USE RESTRICTIONS.....	43
2. WARRANTY AND DISCLAIMER.....	43
3. LIMITATION OF LIABILITY.....	44
4. GENERAL	44
Appendix B: Saved Settings	45
Network Settings	45
ETH0 (NIC 1)	45
ETH1 (NIC 2).....	45
System.....	45
RAID Administrator	45
Date/Time Settings	45
Appendix C: Tape Compatibility Notice	46
Incompatible Tapes.....	46
Appendix D: 3-Year Limited Hardware Warranty bruAPP	47
Global Limited Warranty and Technical Support.....	47
Hardware Limited Warranty	47
General terms.....	47
Exclusions.....	48
Exclusive Remedy	49
Limitation of liability	49
Customer Responsibilities	50
Types of Hardware Warranty Service	50
Parts-only warranty service	51
Advanced unit replacement warranty service.....	51
General.....	51
Appendix E: Open Source @ TOLIS Group	52

1 - Important Warranty Information

The bruAPP Backup Appliance is not a general purpose server and should not be considered as such. It is not a SAN, NAS, SMB share, Xsan, Xserve RAID or anything similar to a shared network volume. It should be considered a backup “toaster” in that it is a single function appliance.

Attempts to bypass the normal unit startup sequence, including system BIOS settings, will be considered a violation of the included software End User License Agreement (EULA) (Appendix A of this document) and will also result in the immediate termination of any and all warranties associated with the unit.

Removing the bruAPP Chassis Cover

Removal of the bruAPP Backup Appliance chassis cover without authorization from TOLIS Group will void the hardware warranty associated with the unit. There are no user-serviceable parts located inside of the system and in the event the unit needs to be returned for warranty service, if there is any evidence of tampering with internal components the repair will be performed under Non-Warranty Repair.

USB Devices

Do not connect any USB peripherals (excluding USB keyboards), unless directed to do so by TOLIS Group, Inc. staff.

SAS HDD Devices

Do not connect a non-TOLIS Group disk device to the “Disk” SAS port on the back of the bruAPP Backup Appliance. Doing so can damage the bruAPP/OS and the bruAPP RAID array.

Non-Warranty Repair Information

Non-Warranty Repair is performed at customer expense. This includes, but is not limited to, all required shipping charges, any hardware replacement costs, a hardware refurbishment fee, and possibly a system reconfiguration fee.

Shipment Packaging Required for RMA

Please note for shipping purposes, your bruAPP Backup Appliance may be shipped with the hard disks separate from the chassis unit. **Please note, an extra HDD is included for warranty purposes only, only use this extra bruAPP HDD for failed HDD replacement under direction of TOLIS Group support only.**

DO NOT THROW THE bruAPP SHIPPING BOX AWAY, it is specially designed to protect the bruAPP in shipment and moving situations.

2 - Thank you!

Thank you for purchasing this bruAPP™ Backup Appliance. TOLIS Group is fully committed to providing solutions that deliver unsurpassed data recovery reliability, are easy to use, and perform critical work while affording excellent value.

We trust our commitment will be reflected throughout your experience with our products and our company, and encourage open communication and feedback. It's one of the ways that we learn how to make ourselves, and our products, even better. So please stay in touch.

Again, your business is very much appreciated, and we look forward to serving you.

Contact TOLIS Group, Inc.

General Inquiries

TEL: 480-505-0488

FAX: 480-505-0492

E-Mail: bruinfo@tolisgroup.com

WWW: <http://www.tolisgroup.com>

HOURS: 9AM to 5PM Mountain Standard Time (MST - Arizona, U.S.A.) (GMT -0700)

BRU Sales

TEL: 480-505-0488

FAX: 480-505-0492

E-Mail: brusales@tolisgroup.com

WWW: <http://www.tolisgroup.com>

HOURS: 9AM to 5PM Mountain Standard Time (MST - Arizona, U.S.A.) (GMT -0700)

Technical Support

TEL: 480-505-1814

WWW: <http://support.bru.com> to create a ticket

HOURS: 9AM to 5PM Mountain Standard Time (MST - Arizona, U.S.A.) (GMT -0700)

3 - bruAPP Box Contents

Your bruAPP Backup Appliance shipping box(es) contains the following items:

- The bruAPP Backup Appliance (hard drives may ship installed on certain models, or in a separate box on other models).
- Rackmount hardware for rackmount units
- bruAPP Quickstart Guide for initial bruAPP hardware setup.
- bruAPP warranty card.
- Additional notes as applicable.

PLEASE NOTE, DUE TO MANY MODELS, CONFIGURATIONS, AND CUSTOM CONFIGURATIONS, PICTURES IN THIS MANUAL MAY DIFFER FROM YOUR UNIT, HOWEVER, CONCEPTS AND INFORMATION STILL APPLIES.



Installation and use of the bruAPP Backup Appliance constitutes your agreement with the End User License Agreement (EULA) found in Appendix A. If you do not agree to the EULA, you may not install or use the bruAPP Backup Appliance in any way.

Please visit the bruAPP Backup Appliance documentation page on the web at <http://tolisgroup.com/bruapp-backup-appliance.html>

4 - Installation and Connections

You've unpacked your bruAPP Backup Appliance, now please locate the following components:

- The bruAPP system (Rackmount or Tower)
- Component Box containing:
 - Power Cord (U.S. 120VAC 3 Prong)
 - Front or rear panel keys (on certain models)
 - Rail Kit Box
 - 1 extra HDD for immediate failed HDD replacement. Do not use this HDD unless instructed by TOLIS Group to do so.

Initial Connections

For the initial installation of your bruAPP unit, plug your keyboard and monitor (mouse not required), at least one network cable into GLAN0 (Ethernet port closest to the monitor port), and the power cord on the back panel as outlined in Fig. 2.1 below (some models may differ, however, concept is the same).

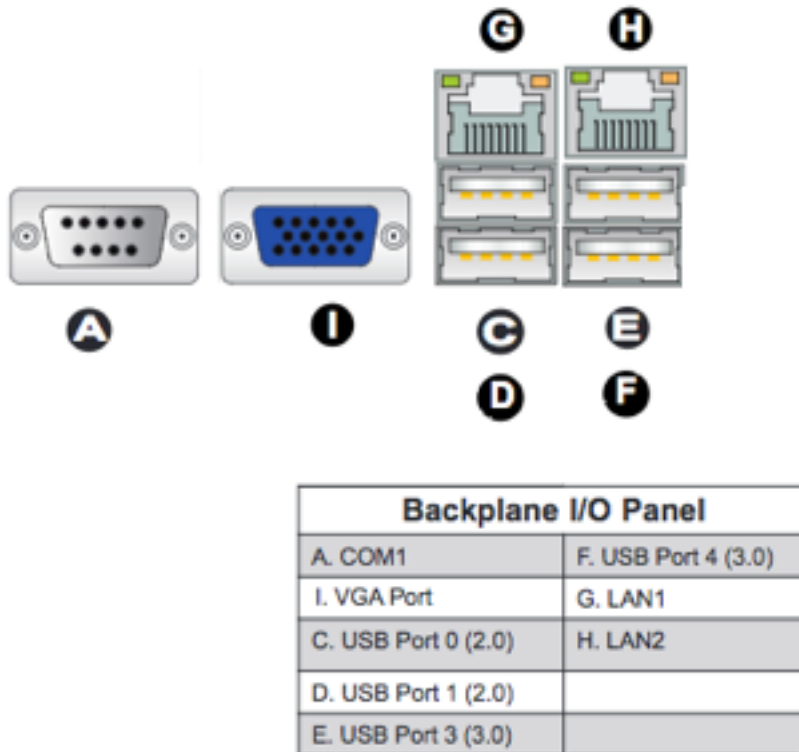


Figure 4.1 – bruAPP Backup Appliance Rear I/O Panel

Note: Tower System arrangement is vertical, and some 1U/2U/3U/4U chassis will differ slightly.

IMPORTANT: If your bruAPP chassis offers USB ports that are marked as “SS/USB,” do not use them as the bruAPP OS does not support the superspeed protocol at this time.

Connecting a Tape Device

If you are attaching a SAS or Fibre-Channel tape drive or library, connect it to the appropriate ports.

3U and 4U Chassis SAS Tape Connection

bruAPP 3U and 4U Backup Appliances have two external SAS ports. One is labeled “Tape” (usually the top port) and the other is labeled “Disk” (usually the bottom port) and when connecting the tape device to your 3U or 4U bruAPP, you must plug the tape device into the “Tape” port only as shown in figure 4.2.

The “Disk” port is for planned future expansion of the bruAPP Backup Appliance for customers needing to increase the total bruAPP RAID size.

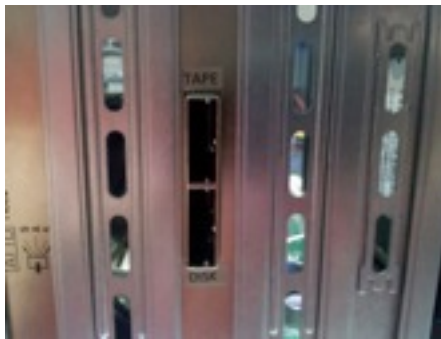


Figure 4.2 — The view of the 3U chassis SAS ports for disk and tape connections.



WARNING:

The “Disk” port is for future expansion and use of the bruAPP Backup Appliance from TOLIS Group, is not to be used. Connecting a non-TOLIS Group disk to the “Disk” SAS port of the bruAPP Backup Appliance will cause damage to the bruAPP/OS, including the RAID array, and will result in return of the unit for Non-Warranty repair. Non-Warranty does not cover to/from shipping and includes a hardware refurbishment charge.

Fibre-Channel (FC) Tape Devices

For Fibre-Channel tape devices, you will need copper rather than optical cables. Otherwise, you will need to supply appropriate GBIC's to connect the optical cables to the mechanical/electrical connectors in the provided FC HBA.



If you have purchased your bruAPP Backup Appliance with a TOLIS Group Library (TGL1800, TGL2240, TGL4480, or TGL6800), the compatible SCSI, SAS, or Fibre-Channel cable will be included in the box with your tape library.

5 - Rack Installation

This section provides information on installing the 1U/3U/4U bruAPP Backup Appliance into a server rack unit with the rack rails provided. While the figures in this section show a 1U chassis, the concept for the 3U or 4U chassis is the same.

There are a variety of rack units on the market, which 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.



Warning

The 3U bruAPP Backup Appliance is capable of holding 16 hard drives. When fully loaded and the rail kit installed onto the 3U chassis, the net weight of the unit is approximately 90 lbs (40.82 kg). A 4U unit is 24 drives. The 4U is even heavier.

Therefore, install the bruAPP into the rack prior to inserting the hard drives to reduce the risk of injury.

Identifying the Sections of the Rack Rails

You may have received rack rail hardware in the same box as the 1U bruAPP Backup Appliance (two front inner rails should already be attached to the chassis). This hardware consists of two rear inner rails that secure to the chassis, one on each side just behind the pre-installed front inner rails. Note that these two rails are left/right specific.

Installing the Rear Inner Rails

First, locate the right rear inner rail (the rail that will be used on the right side of the chassis when you face the front of the chassis). Align the two square holes on the rail against the hooks on the right side of the chassis. Securely attach the rail to the chassis with M4 flat head screws. Repeat these steps to install the left rear inner rail to the left side of the chassis (see Figure 5.1). You will also need to attach the rail brackets when installing into a telco rack.

Locking Tabs: Both chassis rails have a locking tab, which serves two functions. The first is to lock the server into place when installed and pushed fully into the rack, which is its normal position. Secondly, these tabs also lock the server in place when fully extended from the rack. This prevents the server from coming completely out of the rack when you pull it out for servicing.

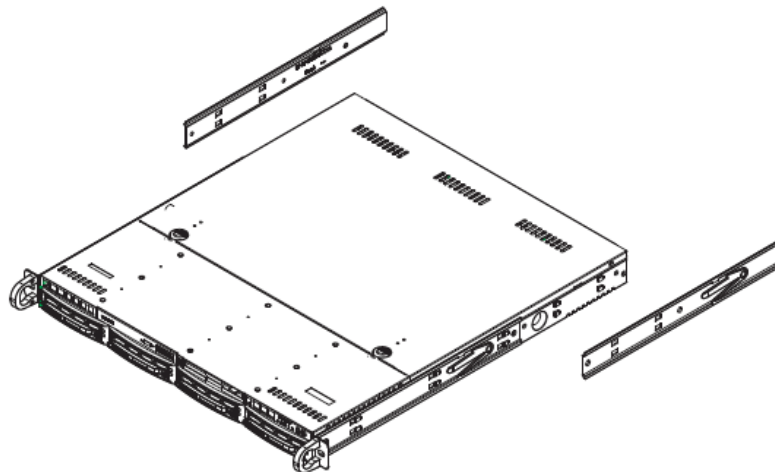


Figure 5.1 — Installing the left and right rails on a 1U bruAPP Backup Appliance chassis.

Installing the Rack Rails

Determine where you want to place the 1U bruAPP in the rack (see Rack Mounting Considerations below). Position the chassis rail guides at the desired location in the rack, keeping the sliding rail guide facing the inside of the rack. Screw the assembly securely to the rack using the brackets provided. Attach the other assembly to the other side of the rack, making sure that both are at the exact same height and with the rail guides facing inward.

Installing the 1U/3U/4U bruAPP into the Rack

You should now have rails attached to both the chassis and the rack unit. The next step is to install the server into the rack. If the hard drives have been installed into the chassis, you'll need to remove them prior to attempting to lift the chassis into the rack (see the warning at the start of this chapter). Do this by lining up the rear of the chassis rails with the front of the rack rails. Slide the chassis rails into the rack rails, keeping the pressure even on both sides (you may have to depress the locking tabs when inserting). See Figure 5.2.

When the server has been pushed completely into the rack, you should hear the locking tabs "click".

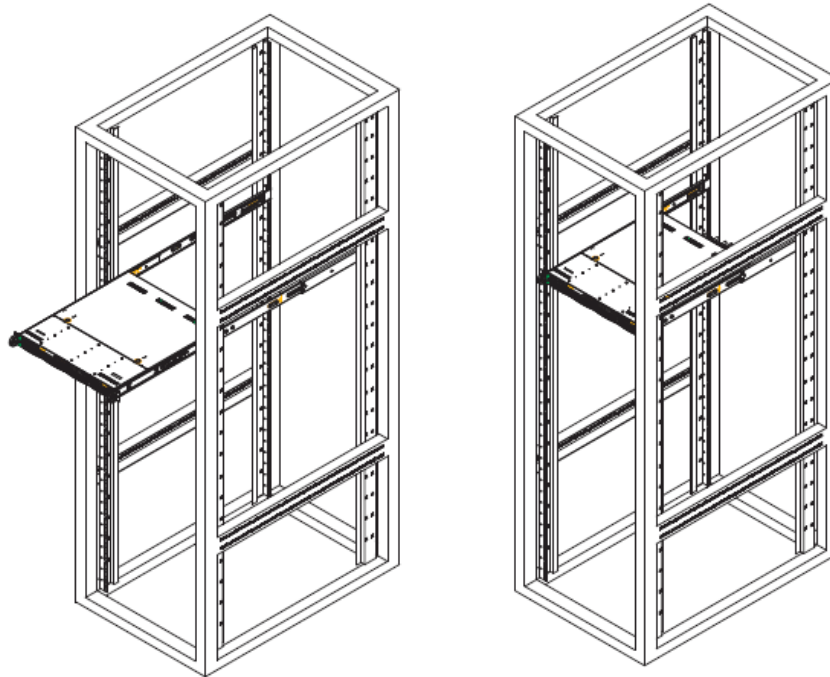


Figure 5.2 — Installing the rails into a server rack.

Installing the 1U bruAPP into a Telco Rack

To install the 1U bruAPP into a Telco type rack, use two L-shaped brackets on either side of the chassis (four total). First, determine how far the server will extend out the front of the rack. Larger chassis should be positioned to balance the weight between front and back. If a bezel is included on your server, remove it. Then attach the two front brackets to each side of the chassis, then the two rear brackets positioned with just enough space to accommodate the width of the rack. See Figure 5.3.

Finish by sliding the chassis into the rack and tightening the brackets to the rack.

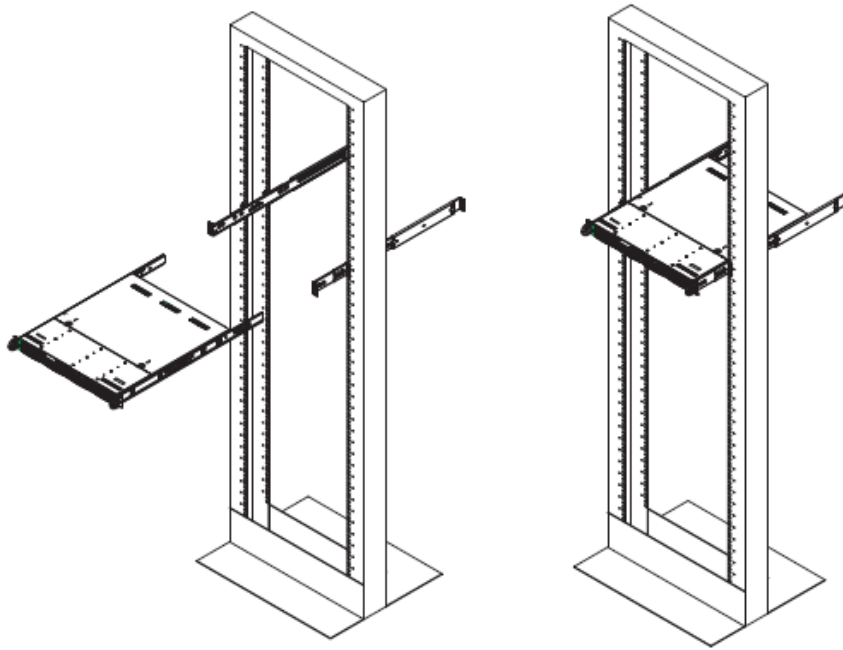


Figure 5.3 — 1U bruAPP Telco Rack Installation

Installing the 3U/4U bruAPP into a Telco Rack

This is not a supported installation method. Because of the high density drive count, the forward weight of the unit far exceeds the ability of a telco rack to support it properly.

Rack Mounting Considerations

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 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.

Server 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 hot plug SATA drives and power supply modules 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.

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 overcurrent 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 (i.e. the use of power strips, etc.).

6 - Powering On Your bruAPP

Depending on the bruAPP Backup Appliance that you ordered, the power button may be behind a faceplate, on the back of the unit, or may require a small pen or screwdriver to power on. Please use the appropriate section below for your bruAPP model.

Turn the unit on using a small tool such as a pen or small star screwdriver (do NOT use a pencil as lead particles could interfere with the switch operation over time).

Tower Systems

For **tower** systems, turn the unit on using the front panel power switch. If the unit does not turn on, check the switch on the power supply on the back of the unit and make sure that it is switched to the on position.

1U Rackmount Systems

For **1U rackmount** systems that have a faceplate/bezel, unlock the faceplate/bezel and remove by grasping the left end and swinging it outward from left to right. See figure 6.1. As chassis designs may vary between bruAPP models from the 1U unit described and shown below, your faceplate/bezel removal process may differ slightly.



Fig. 6.1 — Removal of the 1U chassis faceplate/bezel if applicable.

Once the faceplate/bezel has been removed, locate the Power and Reset switches. See figure 6.2. Power the bruAPP on by pressing the Power switch.

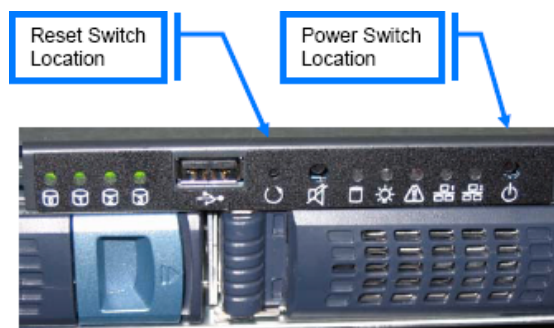


Figure 6.2 — Location of power and reset switches.

3U/4U Rackmount Systems

3U/4U rackmount systems do not have a faceplates/bezel. The power button is located on either the rear of the unit or on the front of the unit in the bottom-left (see figure 6.3) or bottom-right corner with the LED indicator lights below the power button.



Figure 6.3 — Front view for the bruAPP 3U chassis. Power button and LEDs are on the lower left side of the chassis, just under the rack handle.

7 - Initial Configuration

After the initial power-on, you will be prompted with the bruAPP/OS Welcome screen (figure 7.1). The following will walk you through each of the setup screens to fully setup your bruAPP Backup Appliance and configure it for use.



Figure 7.1 — bruAPP/OS Welcome Screen

From this point on, use the keyboard to navigate all of the bruAPP/OS screens. Use of the mouse is not supported and therefore mouse movements are ignored. Keystrokes are:

[TAB] key to move between setting options, the action buttons.

[ARROW KEYS] to highlight a desired option.

[SPACEBAR] to select your desired option.

[ENTER] will save the current settings and continue to the next option screen.



For future reference of all settings that you set, we suggest that you write the settings down in the “Saved Settings” section of this manual in the event that you need to reapply the settings to the values that you set originally.

Network Setup

The first part of the bruAPP/OS setup is to configure the bruAPP network settings. There are two Ethernet ports on the bruAPP. You may configure them to connect to two different networks (using subnets) or you may only connect one. If you use only one Ethernet port, make sure you plug in the Ethernet cable to the ETH0 port (closest to the VGA port).

It is strongly discouraged to connect both Ethernet ports to the same network unless you properly configure your network environment. Using both NICs on the same network may cause problems with backup operations.

Configure Ethernet Port 0

The first part of the network setup will be for the ETH0 port. To ensure consistent communication to the bruAPP, it is strongly advised to use static IP addresses for the bruAPP and any client machine you will be having the bruAPP backup. It is not required, but it will greatly reduce connectivity problems because of IP addresses changing in installations where DHCP is used for servers.

Using the arrow keys, highlight the option you want to have ETH0 be set to. Either manually set (static IP) or if the ETH0 port will use DHCP. See figure 7.2.

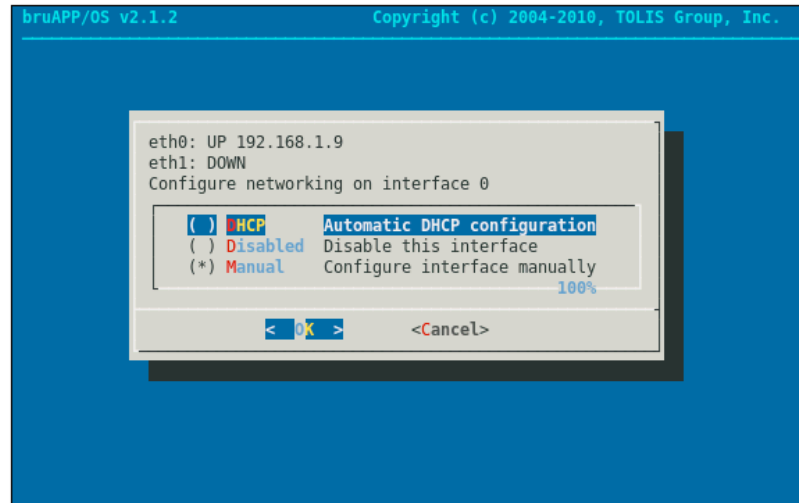


Figure 7.2 – Network Setup for ETH0.

Once you have highlighted “DHCP” or “Manual” for ETH0, press the [SPACEBAR] to select that option. Once the option is selected, press [ENTER] to move to the next screen.



If you selected “DHCP” then you will be moved to the ETH1 port configuration screen.

If you selected “Manual”, enter the IP address and network (subnet) mask that the ETH0 port will be using. Press [TAB] or use the arrow up/down keys to move between fields. See figure 7.3. Once you've entered the desired values, press [ENTER] to continue to the next screen.

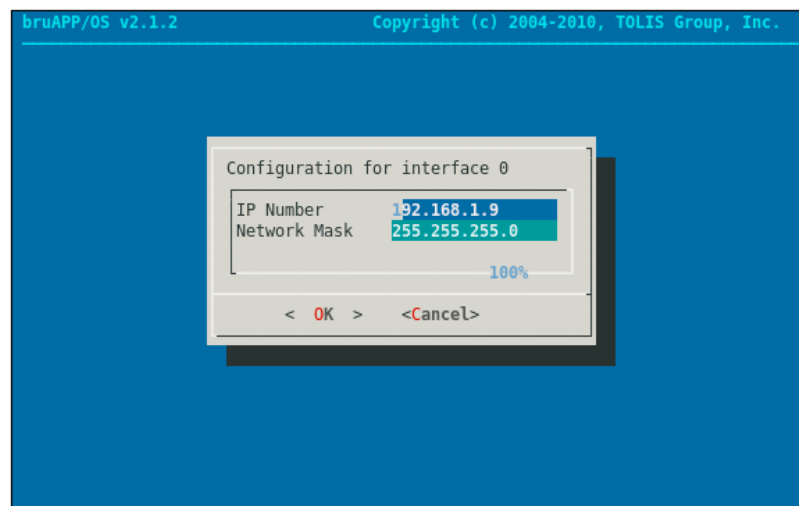


Figure 7.3 – IP and Network Mask (Subnet Mask) settings for ETH0.

Once you have configured the IP address and network mask it is now time to configure the bruAPP's hostname, gateway server and DNS servers. See figure 7.4.

Make sure that the hostname you enter is a unique name and is in a Fully Qualified Domain Name (FQDN) format (i.e. bruapp.domain.com). Entering just the hostname may cause network errors.

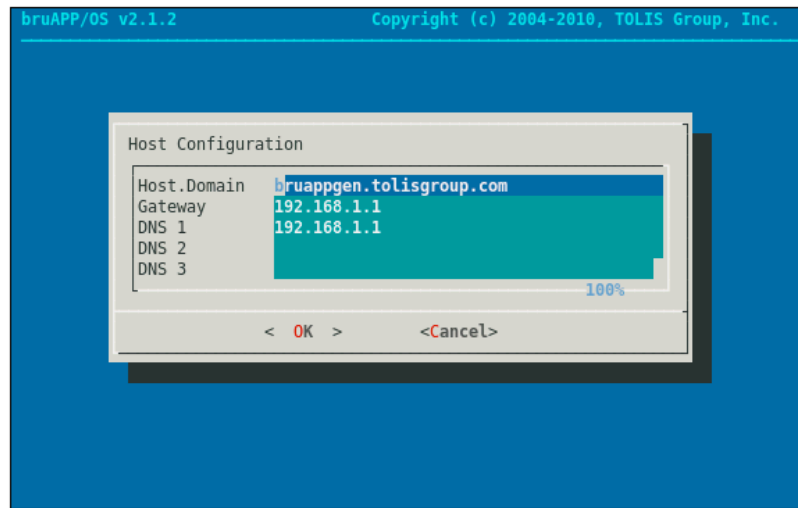


Figure 7.4 — Hostname, Gateway, and DNS server configuration.

Once you have finished with the Host Configuration of ETH0, you will be moved to the configuration of ETH1.

Configure Ethernet Port 1

Most bruAPP users will not configure the bruAPP to use ETH1 since most connect the bruAPP to a single network. If that is the case, then choose the “Disabled” option for ETH1 and press [ENTER] to move to the next screen.

If you are connecting the bruAPP to two different networks, then perform the setup for ETH1 in the same manner that you did for ETH0 using the second network values you want to be used.

Apply Network Settings

Once you have configured the settings for both Ethernet ports, the bruAPP/OS will now apply the settings, creating the appropriate files for proper network connectivity.

If DHCP is used, the IP addresses for ETH0 and ETH1 can be logged in the “Saved Settings” section of this manual.

Setting the Date & Time

The configuration of the bruAPP system date and time is first done manually, then you'll be prompted to configure the NTP settings.

Set the Date

Setting the date on the bruAPP/OS consists of selecting the Month, Year and the Day, in that order. Use the [TAB] and arrow keys to switch between fields and the change values within each field. Your date screen should look like figure 7.5.

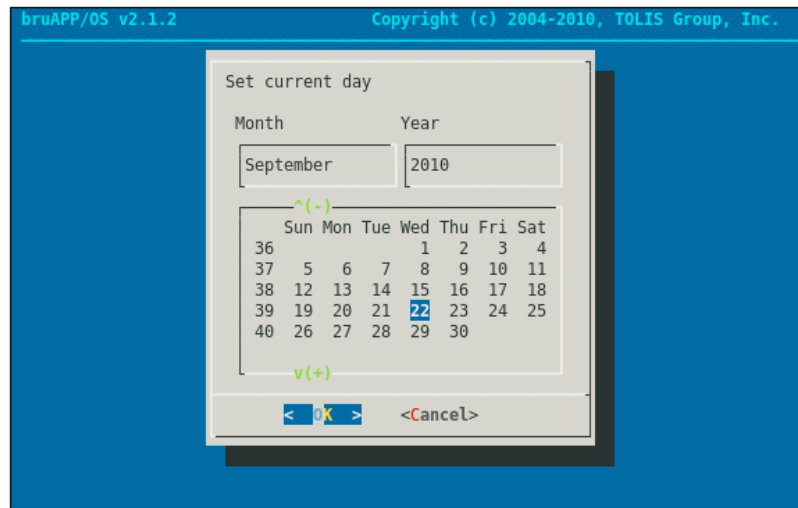


Figure 7.5 — Manually set the Month, Year and the Day for the bruAPP/OS.

Setting the Time

Manually Set the Time

The Time screen allows you to set the current time of the bruAPP manually. This is helpful for installations where there is not an in-house system that serves as a Network Time Protocol (NTP) server or access to the internet on port 123, the NTP port, is restricted.

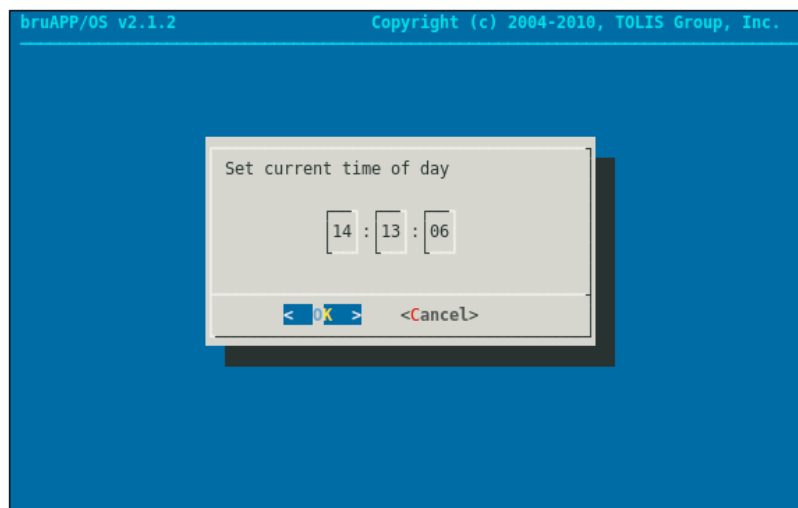


Figure 7.6 — Manually set the system time.

When you have completed the time and date, the bruAPP will set the system date and time based on the values you provided. A dialog will appear to report what the current system time has been set to. See figure 7.9.

Automatically Set the Time

The bruAPP/OS has the ability to set the system date and time using either an in-house NTP server or an internet NTP server. By default, the bruAPP/OS NTP service is configured to connect to public NTP servers (0.pool.ntp.org). If, however, you want to use an in-house machine or a different NTP server, the NTP set will allow you to do so.

First, select your timezone from the list of available timezones. See figure 7.7.

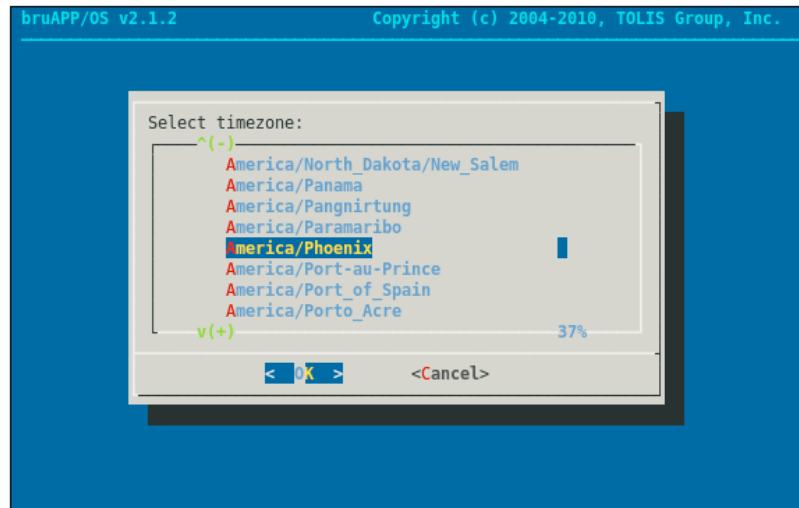


Figure 7.7 — Set the system's timezone.

To speed the process of going through the timezone list, which is in alphabetical order by region, use the [PAGE UP] and [PAGE DOWN] keys. Once you see your timezone in the list, use the arrow keys to move one-by-one to the desired timezone. Press [ENTER] to select the timezone and move to the NTP server configuration.

On the NTP server screen, figure 7.8, you may either leave the field set to “default” or you may enter your desired NTP server. If you choose to use the “default” option, the server 0.pool.ntp.org will be used to set the system date and time. For a complete list of time servers worldwide, visit www.ntp.org.

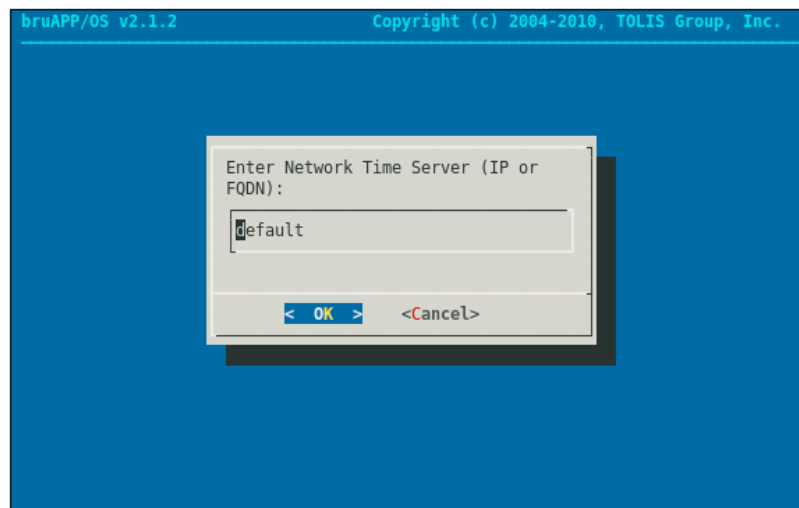


Figure 7.8 — NTP Server configuration.

You may either enter the FQDN of the time server or the IP address. Either are acceptable, however, please be aware that a valid DNS server entry is required on the bruAPP in order to resolve the FQDN to an IP address.

Applying the System Date & Time — NTP

Once you have configured both the manual and NTP settings, the bruAPP will now set the system time and display what the current system time has been set to (figure 7.9).

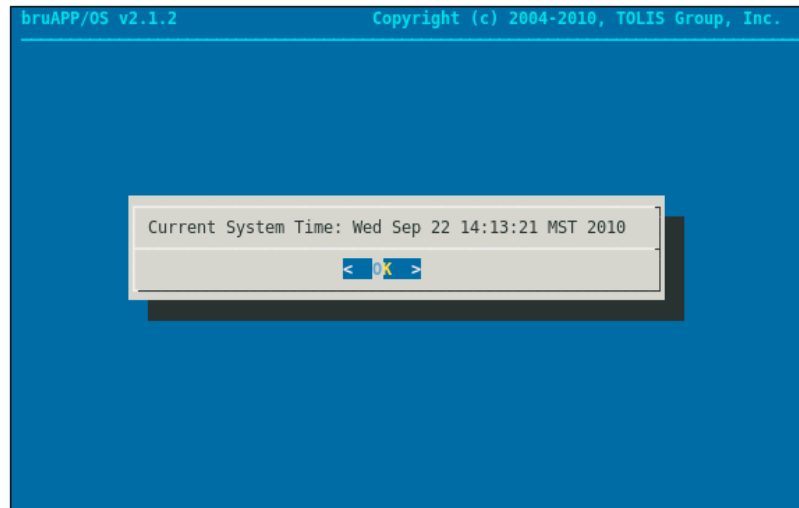


Figure 7.9 – Report of the current system time.

Setting the RAID Administrator

The bruAPP Backup Appliance requires a RAID administrator email address so that in the event that there's a RAID status update an email will be sent to the email address provided. See figure 7.10.

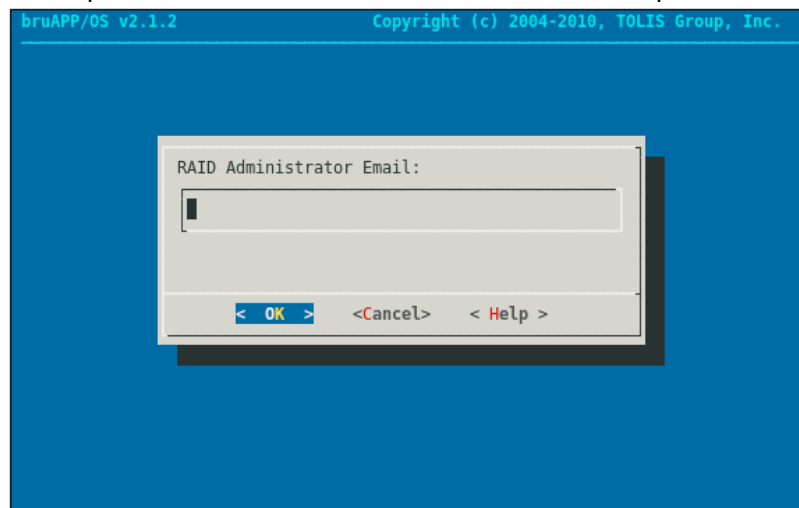


Figure 7.10 – RAID administrator email setup.

After the RAID administrator email has been entered, press [ENTER] to move to the next screen. A test email will be sent to the email address using the existing Mail eXchange (MX) record for the domain used.

RAID Administrator SMTP Configuration

This feature is currently being added to the bruAPP/OS. There is no current mechanism to allow SMTP authentication at this time.

Setting the bruAPP Admin Password

The bruAPP admin password is the same password as the 'admin' user for the BRU Server software. Changing the 'admin' password on the bruAPP will also change the 'admin' user password when logging into the BRU Server Console.

Using the same keystrokes in other screens, enter the password you want to use for the 'admin' user of both BRU Server and direct access to the bruAPP. For security purposes, when you type the password into the Administrator password screen (figure 7.11), nothing will appear as you type, continue to enter your password and press [ENTER].

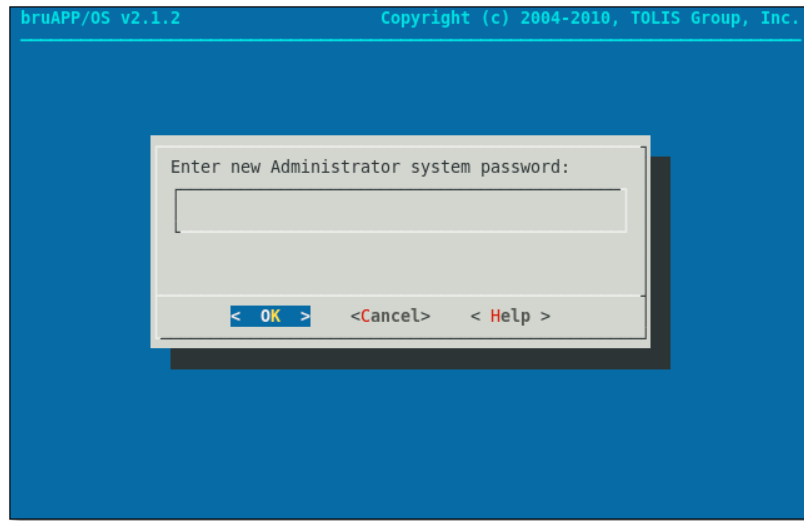


Figure 7.11 — Administrator password screen.

The next screen will appear just like the original Administrator password screen, this is a confirmation screen to ensure that you typed the password correctly the first time. If the first and second password entered do not match the process will need to be started over to ensure that the password that gets set is intentional.



Password Security: *The bruAPP will accept both simple and complex passwords of any length. It is up to you to create a password that adheres to your organization's security policies. It is recommended to keep the password between eight (8) and 16 characters in length.*

Performing the Initial Hardware Scan

Now that your bruAPP has been configured, the BRU Server software must now perform a hardware scan to detect any tape devices connected to the bruAPP for D2T or D2D2T operations. See figure 7.12.

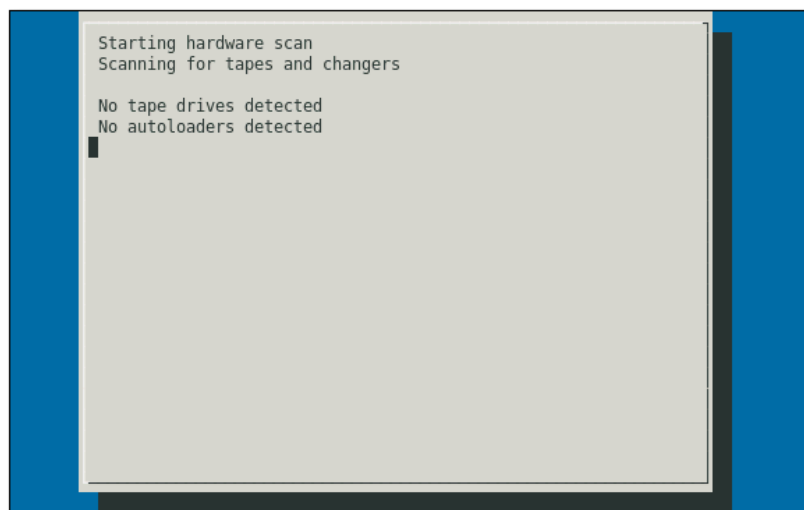


Figure 7.12 — BRU Server Hardware Scan.

Final Step: Reboot

When the hardware scan has completed you will see a dialog indicating that the hardware scan has completed (figure 7.13). At this point, the bruAPP will now reboot to set all system settings, match the system time with the hardware time, and perform other various final operations.

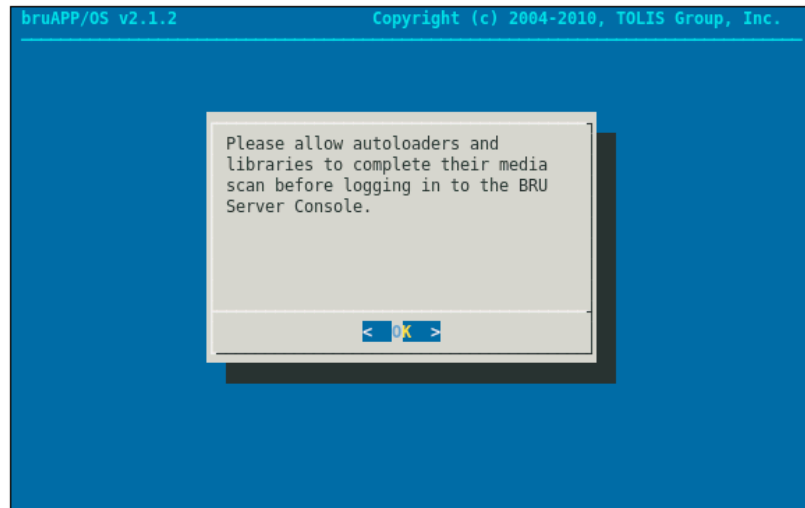


Figure 7.13 – BRU Server Hardware Scan completed dialog.

When the bruAPP has completed the reboot process, your bruAPP Backup appliance is now ready to use!

Setup BRU Server Agents

At this point, it is now time to setup your BRU Server Agents and BRU Server Console. Please refer to the BRU Server Admin Guide for information on installation and configuration of Agent and Console installations based on the operating system you will be using.

8 - Additional Options

The bruAPP/OS has other additional options and features that you can utilize if you choose to do so, but they are optional items and provided as an additional service or tool to aid in overall functionality of the BRU Server software running on the bruAPP Backup Appliance.

For example, the bruAPP/OS is equipped with a Network Time Protocol (NTP) daemon that ensures synchronization of the bruAPP/OS software and hardware clocks with official time servers and the goal of the NTP service on the bruAPP is to ensure that all BRU Server schedules run on-time. The bruAPP/OS does not provide the ability to be a NTP server.



Due to changes in the bruAPP/OS, the menu options below may not appear in the order they are displayed on the bruAPP/OS menu.

bruAPP/OS Main Menu

From the bruAPP/OS Main Menu, you have several options. For information on a specific menu option, see the categories below.

In addition to the System Configuration and BRU Server menus, you also have the ability to view the TOLIS Group Technical Support contact information, reboot the bruAPP, power off the bruAPP, or logout of the bruAPP.

Support Information

In case you need to contact TOLIS Group support and you don't have your Rolodex handy, you can select this option to view the current TOLIS Group contact information.

System Reboot

If you have changed the system timezone, performing a bruAPP/OS update or decide you need to reboot for any other reason, choosing this menu option will tell the bruAPP/OS to reboot the system.

System Poweroff

If you're changing hard disks due to a power failure, moving the bruAPP, or any other reason that you need to power off the bruAPP Backup Appliance, selecting this option from the main menu will tell the bruAPP/OS to power down.



When performing a system reboot or power off, the bruAPP appliance will do it immediately. Any currently running backups in progress by BRU Server will be terminated and they cannot be resumed from where the job was killed. If you do not want to terminate the running backups, you must wait until the backups have completed before performing a reboot or power down.

BRU Server Main Menu

From the bruAPP/OS Main Menu, use the arrow keys to highlight "BRU Server" and press [ENTER] to move to the BRU Server Main Menu.

bruAPP Stage Status

You can view the stage status of the bruAPP to determine the current amount of available space and the amount of used space.



This is only available on bruAPP Backup Appliances that have an internal RAID array. For bruAPP's that do not have a built-in RAID, and error message like the one in figure 8.1 will be displayed.

To get the bruAPP stage status, perform the following steps:

1. Login to the bruAPP/OS.
2. From the bruAPP/OS Main Menu, use the arrow keys to highlight “BRU Server” and press [ENTER].
3. From the BRU Server Main Menu, using the arrow keys again, highlight “Stage Status” and press [ENTER].
4. The bruAPP stage status window will appear.

If the stage status cannot be displayed, either because the RAID did not mount properly at boot or because your particular bruAPP model does not have an internal RAID, an error will be displayed like the one in figure 8.1.

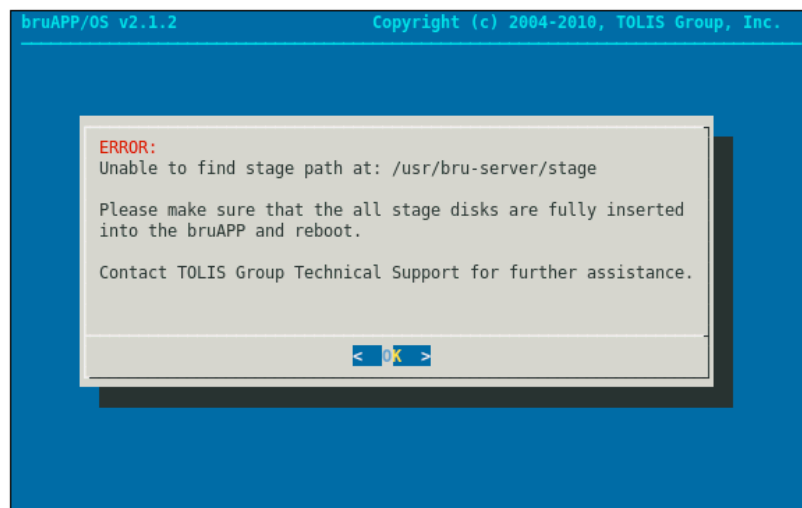


Figure 8.1 — Stage status error when the stage disk is not available.



bruAPP Stage Path

The stage path for BRU Server on the bruAPP is /usr/bru-server/stage. It should never be changed from that path. Changing the BRU Server stage path on the bruAPP to anything other than /usr/bru-server/stage will cause the stage backups to fail as that is the mount point for the bruAPP RAID.

For bruAPP's that do not have an internal RAID array, the BRU Server stage path must still be /usr/bru-server/stage to allow the unit to accept a RAID if hard drives are ever added in the future.

BRU Server Text Console

The bruAPP/OS has the BRU Server Text Console available for direct BRU Server access. To access the Server Text Console, press ALT-F2 (press and hold the ALT key then press the F2 key while holding the ALT key).

You'll be presented with the BRU Server Text Console. To get started, press [ENTER] and then login using the same username/password combination that you would normally use in the BRU Server Graphical Console from a remote system.

BRU Server Hardware Scan

In the event that you need to run a hardware scan on the bruAPP, use the “Hardware Scan” option to re-scan for tape devices, new or old, that have been connected to the bruAPP Backup Appliance.

You'll see the progress of the hardware scan (figure 8.2) while it runs.

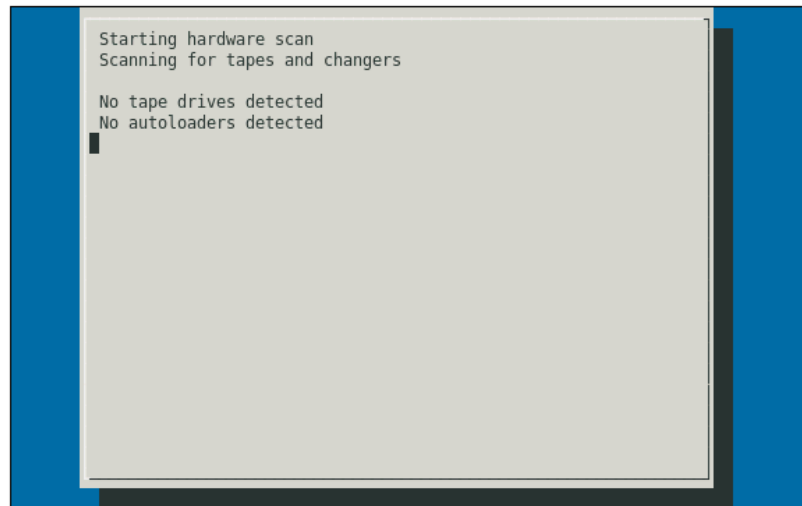


Figure 8.2 — BRU Server Hardware Scan status.



When connecting new tape devices to the bruAPP, a reboot of the bruAPP system is required in order for the bruAPP/OS to properly see and use the device in BRU Server.

When running a hardware scan, any backup or restore operations will be terminated. A warning is displayed (figure 8.3) to alert of this when the hardware scan is selected.

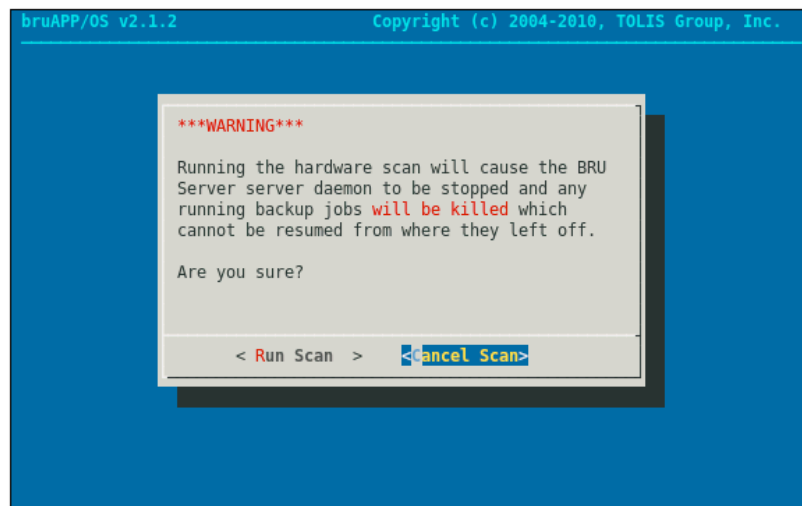


Figure 8.3 — BRU Server Hardware Scan warning.

If there are running operations in BRU Server when the hardware scan is performed they cannot be resumed from the point at which they were terminated. All operations must be started from the beginning.

BRU Server Agent Configuration

The bruAPP Backup Appliance ships with the BRU Server Agent software pre-installed and ready to be configured. If you want to backup the bruAPP system, including the BRU Server Environment, the Agent must be configured before you can run backups, just like any other BRU Server Agent system.

When you authenticate the BRU Server Agent to the BRU Server Server (the bruAPP itself), it will occupy a client license “seat”. Therefore, if your bruAPP ships with 25 clients, after authenticating the BRU Server Agent to the BRU Server Server you will have 24 remaining clients available for backup.

Tip: When you authenticate the BRU Server Agent running on the bruAPP to the BRU Server Server running on the bruAPP, it is suggested that you use the name “localhost” when prompted for the name of the BRU Server system.

Alternatively, you can use the IP address of 127.0.0.1.

BRU Server Daemon Restart

In the event that the BRU Server Server daemon needs to be restarted on the bruAPP, under the BRU Server Main Menu the “Restart” option will perform a BRU Server Server daemon restart.



Warning

When restarting the BRU Server Server daemon, any backup or restore operations that are running will be terminated. Once terminated, the backup/restore operation cannot resume from where it left off. The backup/restore operation must be started over from the beginning.

BRU Server License & Version Information

For support and informational purposes, the “View Details” option of the BRU Server Main Menu will display the currently set BRU Server License information and the current BRU Server version & build information. See figure 8.4.

This information may be requested by TOLIS Group Technical Support in the event that you need technical assistance with your bruAPP.

```
bruAPP/05 v2.1.2 Copyright (c) 2004-2010, TOLIS Group, Inc.
bruAPP/05 License Information
Registered Owner: bruAPP User
Serial Number: 0000-0000
License Key: NINE-WORD-KEY-GOES-HERE-THIS-IS-NOT-VALID
License Salt: 123456
Clients: 00
Encryption: N
Large Library Support: Y

BRU Server Version & Build Information
BRU Server Version: BRU Server 2.0.2 (C) 2002-2010
BRU Server Build Date: Built 16:22:05 09/24/2009
BRU Server Build Machine: anvil.tolisgroup.com
< OK >
```

Figure 8.4 — BRU Server License and Version information. This above example does not contain valid license information.

Update License Information

When you purchase additional clients for BRU Server, add large library support, or add the BRU Server Encryption module you will get a new license from BRU Sales. When you get this new information you may enter the license information, overwriting the old license (since it's no longer a valid/legal license) information by using the "License" option.

Figure 8.5 shows the BRU Server license screen. When you enter this new license, you must enter the information in the exact same way that it has been provided to you. This means that if the Registered Owner field is misspelled, you need to contact BRU Sales to have the license corrected and a new license provided to you with the correct spelling.

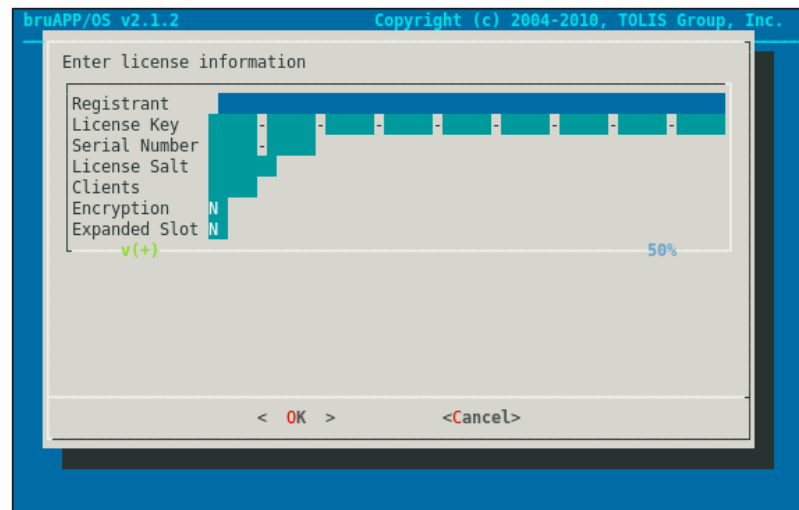


Figure 8.5 — BRU Server license screen.

This also applies if the company name has a hyphen, space, ampersand, or other special character in the name. All of the information must be entered EXACTLY as it has been given to you. The names "TOLIS Group, Inc." and "Tolis Group, Inc." are not the same.

In figure 8.3 it shows an example license. In the example license the Registered Owner field is "bruAPP User". When entering this, it will not be accepted as "BruApp User", "bruapp user", or even "bruAPP user". It must be entered as "bruAPP User" since that's the name the license was created from and therefore will not be valid as anything but "bruAPP User".

Change Password

In the event that you want to change the bruAPP/BRU Server 'admin' user password, select this option. You will be asked to enter the new password, followed by a password confirmation screen. Once the password has been applied, the system will reboot to ensure any logged in users of the BRU Server Console are automatically logged out.

System Configuration Menu

The bruAPP/OS System Configuration Menu has the options and tools for the bruAPP/OS itself. The changes made here not only affect the BRU Server software running on the bruAPP, but they may affect the overall functionality of the bruAPP Backup Appliance itself.

The System Configuration Menu, figure 8.6, shows the options that are available for bruAPP users.

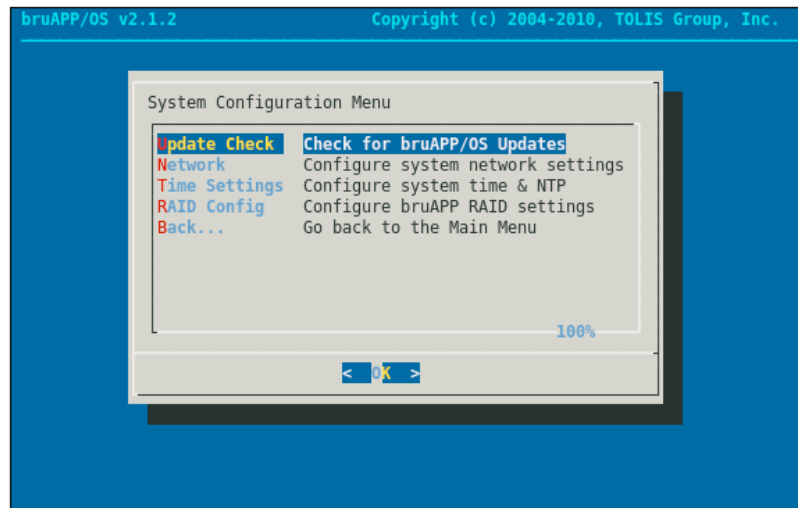


Figure 8.6 — bruAPP/OS System Configuration Menu.

bruAPP/OS Update Check

This option performs a check of the bruAPP/OS against the latest available version listed on the TOLIS Group website. An internet connection to the TOLIS Group servers (via port 80) is required in order for this option to work.

If your bruAPP/OS version is up-to-date, you'll see the message displayed in figure 8.7. If an update is available for the bruAPP/OS, you'll see an "Update Available" message.

In the event that there's an update that has become available for your bruAPP/OS, you can download the updated version, as well as any instructions on installing the update, from the TOLIS Group website at: <http://www.tolisgroup.com>.



In an effort to prevent problems during the update process the bruAPP/OS cannot be updated via the internet or while the system is running. The bruAPP must boot from update media in order to ensure a proper update process. At each bruAPP/OS release an upgrade guide is published to walk users through the overall update process. This guide can be obtained from the TOLIS Group website at <http://www.tolisgroup.com/>

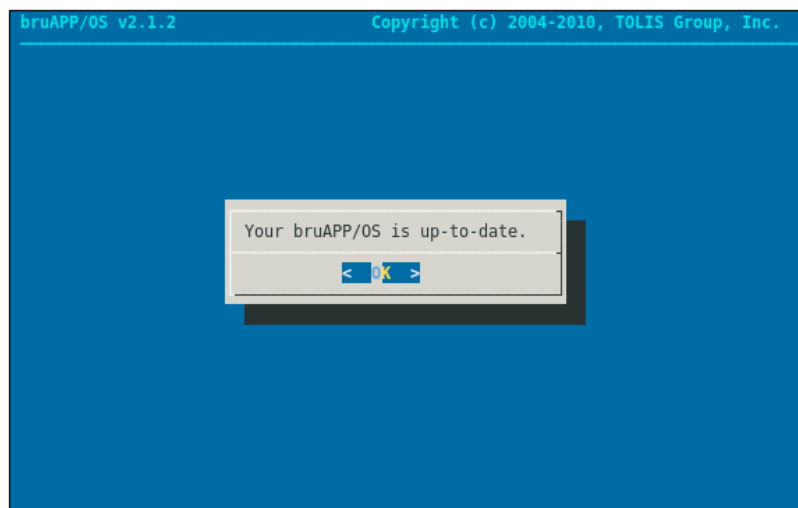


Figure 8.7 — Successful bruAPP/OS Update Check.

bruAPP/OS Network Settings

In the event that there are network changes that need to be made, the “Network” option of the System Configuration Menu will enable you to make any changes to any of the following network options:

- IP address for ETH0 and ETH1
- Subnet Mask for ETH0 and ETH1
- DNS 1, DNS 2, or DNS 3 servers
- Gateway IP address
- bruAPP system hostname

Changing any of these options will affect any network operations that are currently running, such as backup/restore operations or users using the bruAPP Web Interface.

bruAPP/OS Network Configuration

From the System Network Configuration menu, use the “Configure” option to make changes to the Ethernet settings, DNS, hostname, Gateway IP, and Subnet Mask.

bruAPP/OS Network Test

To assist in troubleshooting network issues on the bruAPP Backup Appliance, there are two tests that get performed for network configuration testing.

The first is an IP ping test. To conduct a general connectivity test, on the first screen (figure 8.8) enter the IP address of a system that is known to be connected to the network and working as expected. The IP address can also be an internet IP address to test internet connectivity from the bruAPP.

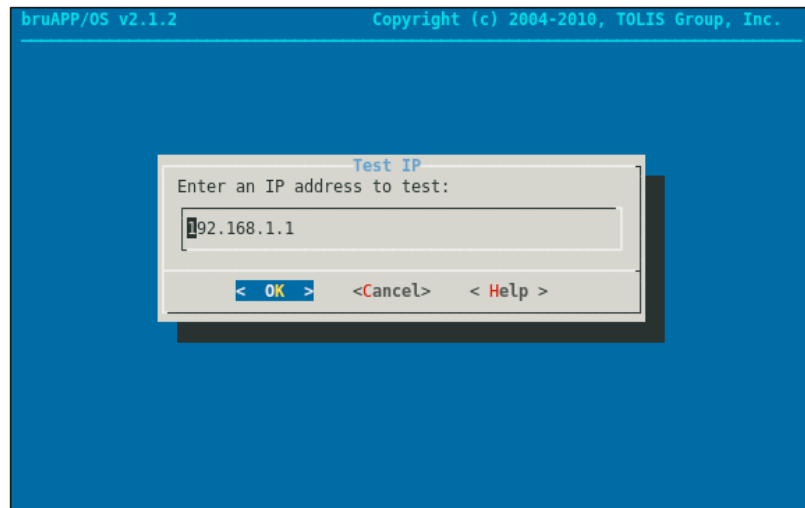


Figure 8.8 — Network Connectivity test using 'ping' to ping an IP address.

Once an IP address has been entered, select OK to conduct the test. Four ping attempts will be performed from the bruAPP to the IP address provided. See figure 8.9.

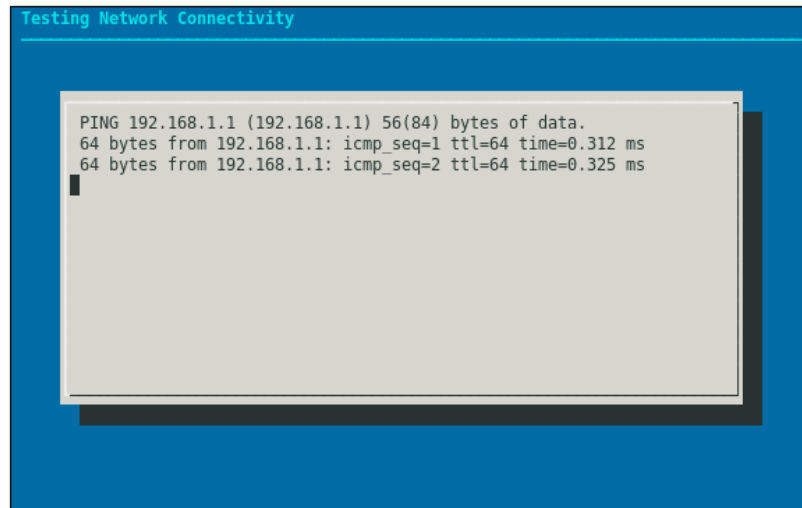


Figure 8.9 – Network Connectivity test active for an IP address.

The next test that can be performed from the bruAPP is a DNS test to test the overall DNS capabilities from the bruAPP. This is important for a number of reasons. The BRU Server software has its own built-in Mail Transfer Agent (MTA) and in order to email to a given email address, the BRU Server software performs an Mail eXchange (MX) record lookup for the given domain the email address. This MX lookup requires both internet access and proper DNS resolution.

Another purpose for DNS is to ensure that the BRU Server software can find the client machines that need to be backed up when BRU Server asks for the machine by name.

A number of other important factors apply with DNS and the bruAPP Network DNS test helps to debug many of those errors.

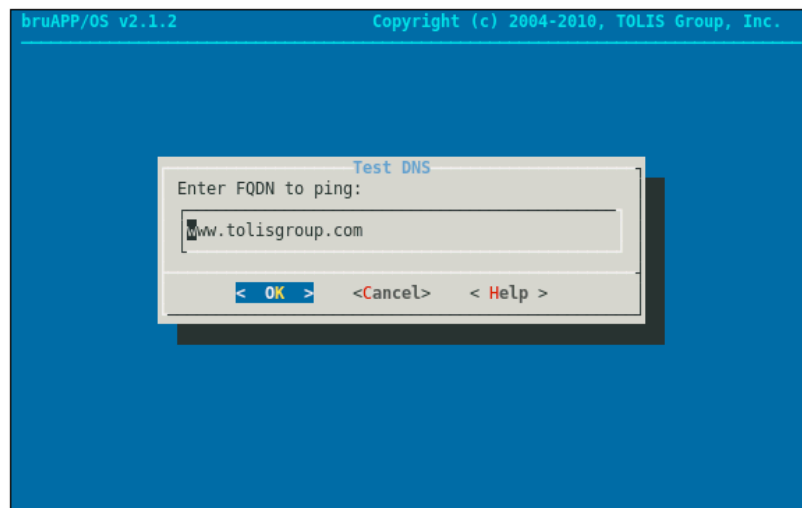
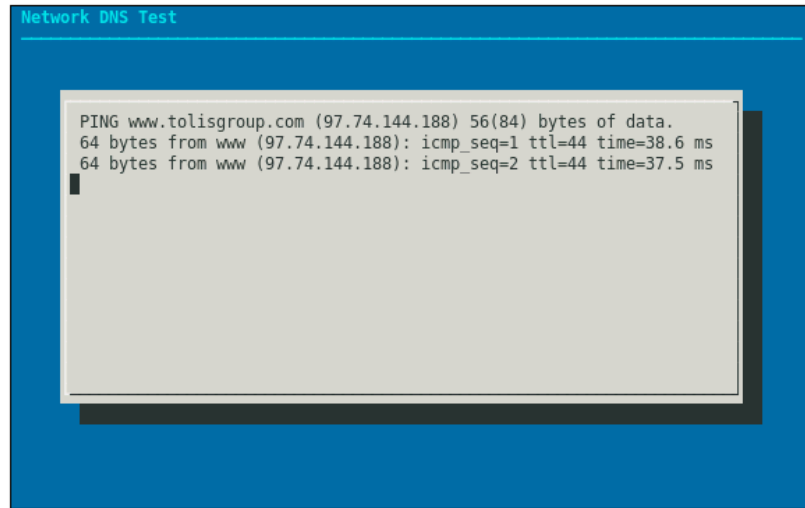


Figure 8.10 – Network DNS (FQDN) test for DNS resolution.

Figure 8.10 shows the DNS test prompt. In the field provided, you may enter any Fully Qualified Domain Name (FQDN) into this field provided that it's a valid FQDN that exists on either the Internet or local network.

To test Internet DNS, enter an outside server such as “www.tolisgroup.com” or your companies website. For an in-house system, enter the FQDN for the in-house system. After the address has been entered, select OK or press [ENTER] to conduct the test as shown in figure 8.11.

Once the test has completed, if there were errors, make any changes or adjustments to your IP, DNS, Gateway, or Subnet Mask as needed to ensure proper connectivity. Otherwise, upon successful completion, the network tests are done.



```
Network DNS Test

PING www.tolisgroup.com (97.74.144.188) 56(84) bytes of data.
64 bytes from www (97.74.144.188): icmp_seq=1 ttl=44 time=38.6 ms
64 bytes from www (97.74.144.188): icmp_seq=2 ttl=44 time=37.5 ms
```

Figure 8.11 — Network DNS test being performed on the bruAPP.

bruAPP RAID Configuration

The bruAPP RAID Configuration menu allows you to set the RAID Administrator email address, the person notified by the bruAPP for all RAID notifications (online, offline, disk failures, etc), and the ability to manually rebuild the bruAPP RAID array to the default RAID level as requested when the bruAPP was ordered.

Customers who ordered the bruAPP with RAID 5 and a hot spare, the unit will rebuild the RAID using level 5 with a hot spare. The same applies for RAID 0 (“stripe”), RAID 5, RAID 6, and RAID 6 with hot spare.

At this time, is it not possible to specify the RAID level that is used on the bruAPP by using the “Rebuild RAID” option.

RAID Administration

The RAID Administrator option allows for a single email address to be used for bruAPP RAID notifications sent out by the bruAPP/OS.

In addition to the RAID Administrator email address, notifications are displayed on the bruAPP Web Page in the event of a RAID alert. You can visit the bruAPP Web Page by typing in the hostname or IP address of the bruAPP Backup Appliance into your favorite browser’s address bar. If there is an alert, it will be displayed at the top of the page in a color-coded alert box.

RAID Notifications, priority levels, and descriptions can be found in figure 8.12.

Notification	Priority	Description
TestMessage	Test	<p>This is a test message since the 'test' command was given as RAID startup. This message will also be generated in the event that the RAID Admin email address was changed to test the new email address given.</p> <p>This email can be deleted and the rest of this message can be ignored.</p>
MoveSpare	Informational	<p>A spare drive has been moved from one array in the spare-group to another to allow a failed drive to be replaced.</p> <p>No further action is required by you at this time.</p>
NewArray	Informational	<p>A new RAID device has been detected in on the bruAPP Backup Appliance.</p> <p>No action is needed from you at this time.</p>
RebuildStarted	Informational	<p>The RAID array has begun the process of rebuilding. This can occur when a component of the RAID fails and the spare is started or when a failed component has been replaced and the spare is being returned to 'spare' status.</p> <p>No further action is required by you at this time.</p>
Rebuild	Informational	<p>The RAID has completed ___ percent of the rebuild process. Updates are periodically given at regular intervals. A final message will be sent when the rebuild process is completed.</p> <p>No further action is required on your part at this time.</p>
RebuildFinished	Informational	<p>The RAID array that was rebuilding is no longer rebuilding. Either because the rebuild completed successfully or because it was aborted.</p> <p>If the rebuild was aborted, an additional notification message will be sent following this message.</p> <p>No action is needed from you at this time.</p>
SpareActive	Informational	<p>A spare component device, which was being rebuilt to replace a faulty device, has been successfully rebuilt and has become active.</p> <p>No further action is required by you at this time.</p>
Degraded	Warning	<p>The RAID array appears to be degraded.</p> <p>At this time you should take appropriate actions to repair the disk in the RAID array that has caused the RAID to run in degraded mode.</p>

Notification	Priority	Description
Fail	High	An active component in the RAID array has been marked as faulty. The RAID spare, if available, will now be used. An additional alert will be sent indicating the next step.
FailSpare	High	A spare component device which was being rebuilt to replace a faulty device has failed. If another spare is available, it will be used. If no other spare devices are available then the RAID will run in degraded mode until both the spare and failed device are replaced. Perform appropriate actions to replace the failed spare disk.
DeviceDisappeared	High	The RAID array which was previously configured appears to no longer be configured. The RAID is not defined and is therefore no longer running. Check the RAID array, make sure that all disks are securely inserted into the bruAPP Backup Appliance and reboot the bruAPP.

Figure 8.12 — bruAPP RAID Alert message descriptions.

Colors in the priority field are the same colors used on the alert box displayed on the web interface.

In addition to these alerts, the web interface will display alerts that may occur during boot. The possible messages are shown in figure 8.13.

Web alerts will include a timestamp to inform you of when the alert was made.

Notification	Priority	Description
System Reboot	Informational	The bruAPP Backup Appliance has had a system configuration change that requires a system reboot in order for the change to become fully effective. Please reboot the bruAPP Backup Appliance as soon as possible to allow all changes to be properly made.
Server Restart	Informational	The BRU Server Server daemon has had a configuration change that requires the daemon to be restarted in order for the change to become effective. This type of change is any type of change to the BRU Server software itself, such as a license file change. Please restart the BRU Server server daemon on the bruAPP as soon as possible.

Notification	Priority	Description
DiskMissing	Warning	<p>The bruAPP RAID has reported disk ___ as missing from the RAID array. The RAID is therefore offline and all D2D backups are disabled.</p> <p>The bruAPP has detected that there is a tape device attached, please go to the bruAPP, acknowledge this warning by pressing [ENTER] to enable backup operations to the attached tape device. Once done, please contact TOLIS Group Technical Support for further assistance.</p> <p>The bruAPP will not finish it's boot sequence until an administrator has acknowledged this warning.</p>
TapeOnly	Warning	<p>The bruAPP has been set to Tape Only Mode because disk ___ is missing from the bruAPP RAID array. A tape device has been found to be connected to the bruAPP system and an administrator has acknowledged the missing bruAPP disk.</p> <p>Please contact TOLIS Group Technical Support for further assistance.</p>
MissingD2T	High	<p>The bruAPP RAID has reported disk ___ as missing from the RAID array. The bruAPP has also detected that there are no tape devices attached and therefore all backups, Disk-to-Disk and Disk-to-Tape, have been disabled. The unit is now offline.</p> <p>At this point, the bruAPP Backup Appliance cannot perform backup operations due to missing hardware and is halted.</p>
RAIDFailure	High	<p>The bruAPP RAID has detected a failure and needs immediate attention.</p> <p>This message will also cause an email to be sent to the bruAPP RAID Administrator.</p>

Figure 8.13 — bruAPP web alerts and descriptions.

Rebuild RAID

The bruAPP/OS allows the ability to completely rebuild the RAID array in the even that there have been too many disks fail or if there is any other reason in which the whole RAID needs to be completely erased and rebuilt from scratch.



Warning

The "Rebuild RAID" option will completely erase all RAID hard drives, including any data that resides on them, in order to properly rebuild the RAID array. If you have staged archives on the bruAPP RAID array, it is strongly advised that you perform an UpStage operation to move the archives from disk to tape so that you may restore from the BRU Server archives in the future.

The erase operation will not removed, alter, change, or update the BRU Server database in any way.

Prior to erasing the RAID array, two warning dialogs will be displayed (figures 8.14 and 8.15) alerting the user to what is going to happen to the bruAPP RAID.

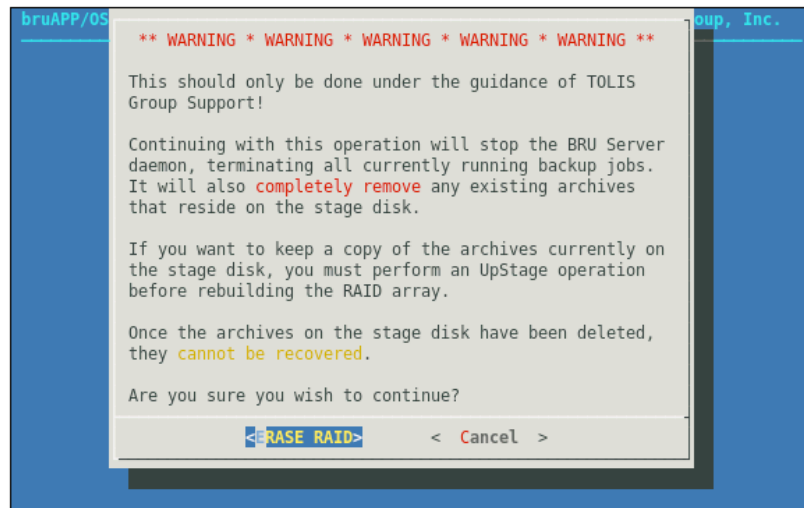


Figure 8.14 — The first bruAPP/OS RAID array erase warning.



Figure 8.15 — The second bruAPP/OS RAID array erase warning.

Both of the screens will default to “Cancel” in an effort to prevent an accidental erase of the bruAPP RAID array.



Warning

DO NOT power off, reset, unplug, or cut power to the bruAPP in any way when performing a rebuild of the RAID. Doing so may leave the bruAPP in an unusable state, thus requiring the unit to be returned to TOLIS Group for non-warranty repair.

If the erase process is instructed to proceed, the following steps are taken:

1. The BRU Server daemon is stopped. Any running backups will be terminated at once.
2. The bruAPP/OS will stop the RAID monitor.
3. The bruAPP/OS will unmount the RAID from the system.

4. Each disk in the RAID array will be erased, one-by-one. Thus removing any information about prior RAID volumes, partitions, filesystems, etc.
5. The bruAPP/OS will removed all of the known disks from the bruAPP RAID list.
6. The bruAPP Backup Appliance will reboot.

Upon reboot, the bruAPP will automatically rebuild the RAID array based on the initial configuration that was applied to the bruAPP when it was configured and shipped from TOLIS Group. It is not possible to change the RAID configuration using the “Rebuild RAID” option. If the bruAPP was ordered with RAID 5 and a hot spare drive, it will be rebuilt using RAID 5 with a hot spare.



When rebuilding a bruAPP that utilizes RAID 5 or RAID 6, the approximate time frame that the bruAPP RAID will be unusable or in “degraded” mode while the RAID rebuilds is approximately one hour for each terabyte of data. A 16-drive bruAPP with 2 TB hard drives (total 32 TB) will take approximately 32-hours to build using RAID 5 or 6.

bruAPP/OS Date/Time Settings

The bruAPP/OS can have the date and time set one of two ways. The first is through manual operation of the “System Time” option or by using the Network Time Protocol (NTP). You may use either an in-house NTP server or an internet NTP server.



The use of an internet NTP server requires that the bruAPP Backup Appliance have out-bound internet connectivity on port 123, in addition to being able to connect to a DNS server to resolve internet hostnames to IP addresses. If either service is blocked, the NTP update via the internet will fail.

NTP Settings

When using the NTP option of the bruAPP, you may either use the default NTP server (0.pool.ntp.org) or you may specify an internal NTP server. See figure 8.15.

When specifying your own NTP server, you may either use the IP address of the in-house NTP server system (no DNS required) or you may enter the hostname (DNS required).

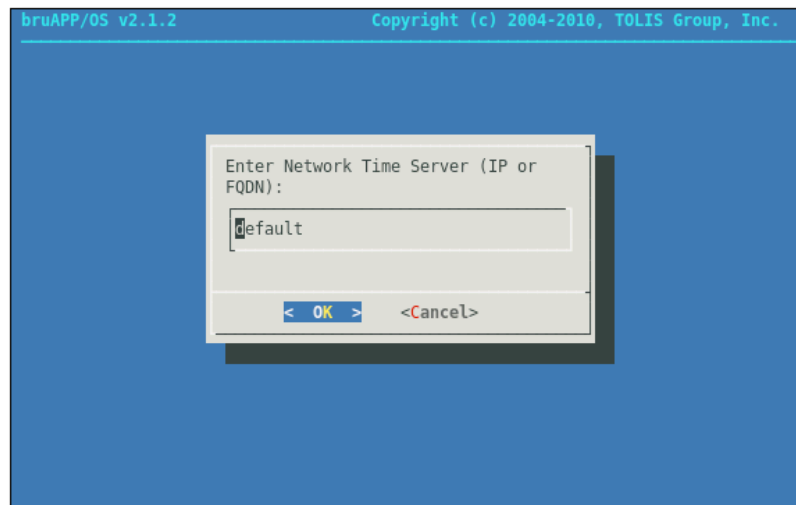


Figure 8.15 — Specifying an NTP server for the bruAPP.

If “default” or the field is left blank, the default NTP server of 0.pool.ntp.org will be used, thus requiring both internet access on port 123 and DNS services to resolve internet hostnames to IP addresses.



After the NTP server has performed its sync operation, the bruAPP/OS will request that you reboot the system to ensure that all system components are updated with the proper date and time (including timezone) settings.

Setting the Timezone

You can specify the timezone of the bruAPP by choosing your timezone from the Timezone list. Once changed, you'll be asked to reboot the bruAPP to ensure that the timezone settings take effect for all running services.

Manually Syncing the Time

To manually synchronize the bruAPP system time with the currently defined timezone and NTP server, choose the "Sync Time" option.

Viewing the Current System Time

To view the current system time, choose the "Current Time" option to view the current date and time of the bruAPP Backup Appliance.

Viewing the NTP Log

If you're having trouble synchronizing the time with the defined NTP server using the current settings, you can view the NTP log to see what errors, if any, that NTP is reporting.

To scroll through the log, use the up, down, left, and right arrows on your keyboard. If you find an error, make the appropriate changes to correct the error and try a manual synchronization operation.



Each time the bruAPP synchronizes the time using the NTP server, the system hardware clock will be updated to ensure that both the software and hardware clocks remain accurate.

Appendix A: End User License Agreement

TOLIS Group, Inc.
LICENSE AGREEMENT BRU Software/bruAPP OS

This License Agreement ("Agreement"), provided by TOLIS Group, Inc. ("TOLIS"), governs the use of the object code version of the BRU brand computer software, documentation and materials accompanying this Agreement or otherwise provided in connection herewith (collectively, "Software"), owned by TOLIS, by the person or entity ("Client") that has clicked on the "Agree" button below. For purposes of this Agreement, Software may be the bruAPP/OS, BRU Sever Server, BRU Server Agent, or BRU Server Console component.

IF YOU DO NOT AGREE WITH THESE TERMS YOU MUST NOT USE THE BRUAPP IN ANY FASHION, CONTACT BRU SALES AND REQUEST RETURN OF THE PRODUCT.

1. LICENSE AND USE RESTRICTIONS

Subject to all other terms of this Agreement including the payment of any applicable fees, TOLIS hereby grants to Client a non-exclusive, non-transferable license, without the right to grant sublicenses, to use one (1) copy of the Software solely for Client's own, internal purposes. The foregoing license includes the right of Client to make a reasonable number of copies of the computer programs contained in the Software solely for backup and archival purposes; provided, however, that all such copies shall be deemed Software for purposes of this Agreement. The foregoing license shall terminate immediately and without notice for any breach of this Agreement by Client, including any failure to pay fees when due. Upon any such termination, Client shall immediately destroy or delete any and all Software and promptly confirm in writing that Client has done so.

The Software is and shall remain the sole and exclusive confidential and proprietary property of TOLIS, subject to protection under the intellectual property laws of the United States and those throughout the world. Client agrees not to use or disclose the Software, during and after the term of this Agreement, except as expressly permitted by this Agreement. Client further agrees not to modify the Software, remove any notices or markings on the Software, or reverse compile, reverse assemble, reverse engineer or otherwise attempt to learn or disclose the trade secrets contained in the Software, transfer the Software in whole or in part over a network, or permit any third party to do any of the foregoing. Nothing in this Agreement shall be construed as conferring any license under any of TOLIS' intellectual property rights, whether by estoppel, implication, or otherwise, except for those licenses expressly granted herein.

2. WARRANTY AND DISCLAIMER

TOLIS warrants that for a period of sixty (60) days from the date of receipt by Client of the Software, the media on which the Software was delivered shall be without defects in materials or workmanship. TOLIS agrees to replace any defective media which is returned to TOLIS within the foregoing sixty (60) day period. TOLIS may make available to Client additional services, including updates, enhancements or improvements of or to the Software, under separate written agreement, and for additional payment.

THE FOREGOING WARRANTY IS THE ONLY WARRANTY GIVEN HEREUNDER. EXCEPT AS OTHERWISE PROVIDED ABOVE, THE SOFTWARE IS PROVIDED ON AN "AS IS" BASIS, WITHOUT ANY WARRANTY WHATSOEVER. ALL EXPRESS, IMPLIED OR STATUTORY CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT, ARE DISCLAIMED. Some states do not allow the disclaimer of implied warranties, so the foregoing limitations may not apply to you.

3. LIMITATION OF LIABILITY

TOLIS SHALL NOT BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL OR EXEMPLARY DAMAGES ARISING UNDER THIS AGREEMENT OR IN CONNECTION WITH THE SOFTWARE, REGARDLESS OF WHETHER ADVISED BEFOREHAND OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT SHALL THE LIABILITY OF TOLIS HEREUNDER EXCEED THE SUM OF ONE HUNDRED DOLLARS (\$100), REGARDLESS OF THE CAUSE OF ACTION, IN TORT, CONTRACT OR OTHERWISE.

4. GENERAL

Any action related to this Agreement shall be governed by the substantive laws of the State of Arizona, without regard to conflicts of law principles. The State and Federal courts located in Maricopa County, Arizona, shall have sole jurisdiction over any dispute arising hereunder, and the parties hereby consent to the personal jurisdiction of such courts. Neither this Agreement, nor any rights hereunder, may be assigned by operation of law or otherwise, in whole in part, by Client without the prior, written permission of TOLIS. Any sale of more than fifty percent (50%) of the common voting stock of, or other right to control, Client shall be deemed an assignment. Any purported assignment without such permission shall be void. Any waiver of any rights of TOLIS under this Agreement must be in writing, signed by TOLIS, and any such waiver shall not operate as a waiver of any future breach of this Agreement. In the event any portion of this Agreement is found to be illegal or unenforceable, such portion shall be severed from this Agreement, and the remaining terms shall be separately enforced. The parties agree that any breach or threatened breach of this Agreement by Client is likely to cause TOLIS damage that is not fully reparable by payment of damages, and further agree that in such case TOLIS shall be entitled to seek and obtain injunctive or other equitable relief to protect its rights hereunder. Client's performance hereunder and use of the Software shall at all times comply with all applicable laws, rules and regulations, including those governing export of technical information, and Client shall fully indemnify, defend and hold harmless TOLIS against any violation thereof. This Agreement is the entire agreement between the parties with respect to this subject matter, and supersedes any and all prior or contemporaneous, conflicting or additional communications, negotiations or agreements.

Thank you for doing business with TOLIS Group, Inc.!

TOLIS Group, Inc.
21630 N 19th Ave
Suites B-12 & B-13
Phoenix, AZ 85027
brusales@tolisgroup.com
<http://www.tolisgroup.com>
TEL: +1-480-505-0488
FAX: +1-480-505-0492



Additional products and utilities from TOLIS Group that may be used in conjunction with the bruAPP/OS or BRU Server software may be covered under a different End User License Agreement(s) (EULA). Please visit <http://www.tolisgroup.com/legal/license> for information about other EULA's.

Appendix B: Saved Settings

You may use this page to store all of the settings that have been set on the bruAPP in the event that you need to reapply the settings.

Network Settings

ETH0 (NIC 1)

IP Address:	_____ . _____ . _____ . _____
Subnet Mask:	_____ . _____ . _____ . _____

ETH1 (NIC 2)

IP Address:	_____ . _____ . _____ . _____
Subnet Mask:	_____ . _____ . _____ . _____

System

Hostname (FQDN):	_____
Gateway IP:	_____ . _____ . _____ . _____
DNS 1:	_____ . _____ . _____ . _____
DNS 2:	_____ . _____ . _____ . _____
DNS 3:	_____ . _____ . _____ . _____

RAID Administrator

Email:	_____
--------	-------

Date/Time Settings

Timezone:	_____
NTP Server:	_____

Appendix C: Tape Compatibility Notice

Static electricity can cause items such as small pieces of paper or cellophane wrapper pieces to stick to the cartridge. When cartridges are inserted into the drive, the debris may prevent proper device functioning and in worst case, damage the device.

To avoid tape device damage, please inspect all cartridges for debris before inserting into the drive, and store the tapes in their cases.

For units with integrated LTO drives, or attached LTO devices, please review the LTO Tape and Drive Compatibility matrix (figure 9.1) for LTO tape drive and LTO tape compatibility.

	LTO-2 Drive	LTO-3 Drive	LTO-4 Drive	LTO-5 Drive	LTO-6 Drive	LTO-7 Drive	LTO-8 Drive
LTO-2 Tape	R/W	R/W	R	—	—	—	—
LTO-3 Tape	—	R/W	R/W	R	—	—	—
LTO-4 Tape	—	—	R/W	R/W	R	—	—
LTO-5 Tape	—	—	—	R/W	R/W	R	—
LTO-6 Tape	—	—	—	—	R/W	R/W	—
LTO-7 Tape	—	—	—	—	R/W	R/W	R/W
LTO-8 Tape	—	—	—	—	—	R/W	R/W
LTO Cleaning	✓	✓	✓	✓	✓	✓	✓

R/W = Read/Write • R = Read • — = Tape Not Supported • ✓ = Compatible

Figure 9.1 — LTO Tape and Drive compatibility matrix.

Incompatible Tapes

In the accidental event that you insert an incompatible tape into an LTO tape drive, the drive will immediately eject the tape. On stand-alone tape drives the “Tape” LED will flash multiple times after the tape is ejected to inform you of an error.

Appendix D: 3-Year Limited Hardware Warranty bruAPP

Global Limited Warranty and Technical Support

THIS GLOBAL LIMITED WARRANTY AND TECHNICAL SUPPORT STATEMENT PROVIDES IMPORTANT INFORMATION ABOUT THE NATURE AND SCOPE OF THE EXPRESS LIMITED WARRANTY PROVIDED FOR THE TOLIS GROUP PRODUCT, AND ALSO CONTAINS CERTAIN DISCLAIMERS AND LIMITATIONS OF LIABILITY BY TOLIS GROUP, WHICH MATERIALLY IMPACT YOUR RIGHTS. ACCORDINGLY, YOU ARE STRONGLY ADVISED TO CAREFULLY READ THIS GLOBAL LIMITED WARRANTY AND TECHNICAL SUPPORT STATEMENT BEFORE USING YOUR TOLIS GROUP PRODUCT. YOUR USE OF THE TOLIS GROUP PRODUCT IS DEEMED TO BE ACCEPTANCE OF THE TERMS AND CONDITIONS SET FORTH IN THIS GLOBAL LIMITED WARRANTY AND TECHNICAL SUPPORT STATEMENT.

Hardware Limited Warranty

General terms

This TOLIS Group Hardware Limited Warranty gives you, the customer, express limited warranty rights from TOLIS Group, the manufacturer. In addition, you may also have other legal rights under applicable local law or special written agreement with TOLIS Group.

TOLIS GROUP MAKES NO OTHER EXPRESS WARRANTY OR CONDITION WHETHER WRITTEN OR ORAL AND TOLIS GROUP EXPRESSLY DISCLAIMS ALL WARRANTIES AND CONDITIONS NOT STATED IN THIS LIMITED WARRANTY. TO THE EXTENT ALLOWED BY THE LOCAL LAW OF JURISDICTIONS OUTSIDE THE UNITED STATES, TOLIS GROUP DISCLAIMS ALL IMPLIED WARRANTIES OR CONDITIONS, INCLUDING ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, MERCHANTABILITY, AND FITNESS FOR A PARTICULAR PURPOSE. FOR ALL TRANSACTIONS OCCURRING IN THE UNITED STATES, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, SATISFACTORY QUALITY, OR FITNESS FOR A PARTICULAR PURPOSE IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTY SET FORTH ABOVE. SOME STATES OR COUNTRIES DO NOT ALLOW.

A LIMITATION ON HOW LONG AN IMPLIED WARRANTY LASTS OR THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR CONSUMER PRODUCTS. IN SUCH STATES OR COUNTRIES, SOME EXCLUSIONS OR LIMITATIONS OF THIS LIMITED WARRANTY MAY NOT APPLY TO YOU.

FOR CONSUMER TRANSACTIONS IN AUSTRALIA AND NEW ZEALAND, THE LIMITED WARRANTY TERMS CONTAINED IN THIS STATEMENT, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE, RESTRICT, OR MODIFY BUT ARE IN ADDITION TO THE MANDATORY STATUTORY RIGHTS APPLICABLE TO THE SALE OF THIS PRODUCT TO YOU.

THE LIMITED WARRANTY TERMS CONTAINED IN THIS STATEMENT, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE, RESTRICT, OR MODIFY BUT ARE IN ADDITION TO THE MANDATORY STATUTORY RIGHTS APPLICABLE TO THE SALE OF THIS PRODUCT TO YOU.

This Limited Warranty is applicable in all countries and may be enforced in any country or region where TOLIS Group or its authorized service providers offer warranty service for the same product model number subject to the terms and conditions set forth in this Limited Warranty.

Under the TOLIS Group Global Limited Warranty program, products purchased in one country/region may be transferred to another country/region, where TOLIS Group or its authorized service providers

offer warranty service for the same product model number, without voiding the warranty. Warranty terms, service availability, and service response times may vary from country/region to country/region. Standard warranty service response time is subject to change due to local parts availability. Your local TOLIS Group authorized service provider can provide you with details.

TOLIS Group is not responsible for any tariffs or duties that may be incurred in transferring the products. Transfer of the products may be covered by export controls issued by the United States or other governments.

This Limited Warranty applies only to TOLIS Group-branded hardware products (collectively referred to in this Limited Warranty as “TOLIS Group Hardware Products”) sold by or leased from TOLIS Group, Inc., its worldwide subsidiaries, affiliates, authorized resellers, or country distributors (collectively referred to in this Limited Warranty as “TOLIS Group”) with this Limited Warranty. The term “TOLIS Group Hardware Product” is limited to the hardware components and required firmware. The term “TOLIS Group Hardware Product” DOES NOT include any software applications or programs, non-TOLIS Group products, or non-TOLIS Group branded peripherals.

All non-TOLIS Group products or non-TOLIS Group branded peripherals external to the TOLIS Group Hardware Product—such as external storage subsystems, displays, printers and other peripherals—are provided “AS IS” without TOLIS Group warranty. However, non-TOLIS Group manufacturers and suppliers or publishers may provide their own warranties directly to you.

TOLIS Group warrants that the TOLIS Group Hardware Products that you have purchased or leased from TOLIS Group are free from defects in materials or workmanship under normal use during the Limited Warranty Period. The Limited Warranty Period starts on the date of purchase or lease from TOLIS Group, or from the date TOLIS Group completes installation. Your dated sales or delivery receipt, showing the date of purchase or lease of the product, is your proof of the purchase or lease date. You may be required to provide proof of purchase or lease as a condition of receiving warranty service. You are entitled to hardware warranty service according to the terms and conditions of this document if a repair to your TOLIS Group Hardware Product is required within the Limited Warranty Period.

Unless otherwise stated, and to the extent permitted by local law, new TOLIS Group Hardware Products may be manufactured using new materials or new and used materials equivalent to new in performance and reliability. TOLIS Group may repair or replace TOLIS Group Hardware Products (a) with new or previously used products or parts equivalent to new in performance and reliability, or (b) with equivalent products to an original product that has been discontinued. Replacement parts are warranted to be free from defects in material or workmanship for ninety (90) days or, for the remainder of the Limited Warranty Period of the TOLIS Group Hardware Product they are replacing or in which they are installed, whichever is longer.

During the Limited Warranty Period, TOLIS Group will, at its discretion, repair or replace any defective component. All component parts or hardware products removed under this Limited Warranty become the property of TOLIS Group. In the unlikely event that your TOLIS Group Hardware Product has recurring failures, TOLIS Group, at its sole discretion, may elect to provide you with (a) a replacement unit of TOLIS Group’s choosing that is the same or equivalent to your TOLIS Group Hardware Product in performance or (b) to give you a refund of your purchase price or lease payments (less interest) instead of a replacement. This is your exclusive remedy for defective products.

Exclusions

TOLIS GROUP DOES NOT WARRANT THAT THE OPERATION OF THIS PRODUCT WILL BE UNINTERRUPTED OR ERROR-FREE. TOLIS GROUP IS NOT RESPONSIBLE FOR DAMAGE THAT OCCURS AS A RESULT OF YOUR FAILURE TO FOLLOW THE INSTRUCTIONS INTENDED FOR THE TOLIS GROUP HARDWARE PRODUCT.

This Limited Warranty does not apply to expendable or consumable parts and does not extend to any product from which the serial number has been removed or that has been damaged or rendered defective (a) as a result of accident, misuse, abuse, contamination, improper or inadequate maintenance or calibration or other external causes; (b) by operation outside the usage parameters stated in the user documentation that shipped with the product; (c) by software, interfacing, parts or supplies not supplied by TOLIS Group; (d) improper site preparation or maintenance; (e) virus infection; (f) loss or damage in transit; or (g) by modification or service by anyone other than (i) TOLIS Group, (ii) an TOLIS Group authorized service provider, or (iii) your own installation of TOLIS Group-approved parts if available for your product in the servicing country or region.

TOLIS GROUP IS NOT RESPONSIBLE FOR DAMAGE TO OR LOSS OF ANY PROGRAMS, DATA, OR REMOVABLE STORAGE MEDIA. TOLIS GROUP IS NOT RESPONSIBLE FOR THE RESTORATION OR REINSTALLATION OF ANY PROGRAMS OR DATA OTHER THAN SOFTWARE INSTALLED BY TOLIS GROUP WHEN THE PRODUCT IS MANUFACTURED.

TOLIS Group is not responsible for any interoperability or compatibility issues that may arise when (1) products, software, or options not supported by TOLIS Group are used; (2) configurations not supported by TOLIS Group are used; (3) parts intended for one system are installed in another system of different make or model.

Exclusive Remedy

TO THE EXTENT ALLOWED BY APPLICABLE LOCAL LAW, THESE TERMS AND CONDITIONS CONSTITUTE THE COMPLETE AND EXCLUSIVE WARRANTY AGREEMENT BETWEEN YOU AND TOLIS GROUP REGARDING THE TOLIS GROUP HARDWARE PRODUCT YOU HAVE PURCHASED OR LEASED. THESE TERMS AND CONDITIONS SUPERSEDE ANY PRIOR AGREEMENTS OR REPRESENTATIONS—INCLUDING REPRESENTATIONS MADE IN TOLIS GROUP SALES LITERATURE OR ADVICE GIVEN TO YOU BY TOLIS GROUP OR AN AGENT OR EMPLOYEE OF TOLIS GROUP—THAT MAY HAVE BEEN MADE IN CONNECTION WITH YOUR PURCHASE OR LEASE OF THE TOLIS GROUP HARDWARE PRODUCT. No change to the conditions of this Limited Warranty is valid unless it is made in writing and signed by an authorized representative of TOLIS Group.

Limitation of liability

IF YOUR TOLIS GROUP HARDWARE PRODUCT FAILS TO WORK AS WARRANTED ABOVE, TOLIS GROUP'S MAXIMUM LIABILITY UNDER THIS LIMITED WARRANTY IS EXPRESSLY LIMITED TO THE LESSER OF THE PRICE YOU HAVE PAID FOR THE PRODUCT OR THE COST OF REPAIR OR REPLACEMENT OF ANY HARDWARE COMPONENTS THAT MALFUNCTION IN CONDITIONS OF NORMAL USE.

EXCEPT AS INDICATED ABOVE, IN NO EVENT WILL TOLIS GROUP BE LIABLE FOR ANY DAMAGES CAUSED BY THE PRODUCT OR THE FAILURE OF THE PRODUCT TO PERFORM, INCLUDING ANY LOST PROFITS OR SAVINGS, BUSINESS INTERRUPTION, LOSS OF DATA, LOST REVENUE, LOSS OF USE, OR ANY OTHER COMMERCIAL OR ECONOMIC LOSS OF ANY KIND, OR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES. TOLIS GROUP IS NOT LIABLE FOR ANY CLAIM MADE BY A THIRD PARTY OR MADE BY YOU FOR A THIRD PARTY. THIS LIMITATION OF LIABILITY APPLIES WHETHER DAMAGES ARE SOUGHT, OR A CLAIM MADE, UNDER THIS LIMITED WARRANTY OR AS A TORT CLAIM (INCLUDING NEGLIGENCE AND STRICT PRODUCT LIABILITY), A CONTRACT CLAIM, OR ANY OTHER CLAIM. THIS LIMITATION OF LIABILITY CANNOT BE WAIVED OR AMENDED BY ANY PERSON. THIS LIMITATION OF LIABILITY WILL BE EFFECTIVE EVEN IF YOU HAVE ADVISED TOLIS GROUP OR AN AUTHORIZED REPRESENTATIVE OF TOLIS GROUP OF THE POSSIBILITY OF ANY SUCH DAMAGES OR EVEN IF SUCH POSSIBILITY WERE REASONABLY FORESEEABLE. THIS LIMITATION OF LIABILITY, HOWEVER, WILL NOT APPLY TO CLAIMS FOR PERSONAL INJURY.

THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS THAT MAY VARY FROM STATE TO STATE OR FROM COUNTRY TO COUNTRY. YOU ARE ADVISED TO CONSULT APPLICABLE STATE OR COUNTRY LAWS FOR A FULL DETERMINATION OF YOUR RIGHTS.

Customer Responsibilities

- To enable TOLIS Group to provide the best possible support and service during the Limited Warranty Period, you will be required to:
- Maintain a proper and adequate environment, and use the TOLIS Group Hardware Product in accordance with the instructions furnished.
- Verify configurations, load most recent firmware, install software patches, run TOLIS Group diagnostics and utilities, and implement temporary procedures or workarounds provided by TOLIS Group while TOLIS Group works on permanent solutions.
- Allow TOLIS Group to keep resident on your systems or sites certain system and network diagnosis and maintenance tools to facilitate the performance of warranty support (collectively referred to as “Proprietary Service Tools”); Proprietary Service Tools are and remain the sole and exclusive property of TOLIS Group. Additionally, you will:
 - Use the Proprietary Service Tools only during the applicable warranty period and only as allowed by TOLIS Group – Install, maintain, and support Proprietary Service Tools, including any required updates and patches – Provide remote connectivity through an TOLIS Group-approved communications line, if required – Assist TOLIS Group in running the Proprietary Service Tools
 - Use the electronic data transfer capability to inform TOLIS Group of events identified by the software
 - Purchase TOLIS Group-specified remote connection hardware for systems with remote diagnosis service, if required
 - Return the Proprietary Service Tools or allow TOLIS Group to remove these Proprietary Service Tools upon termination of warranty support
 - Not sell, transfer, assign, pledge, or in any way encumber or convey the Proprietary Service Tools
- In some cases, TOLIS Group may require additional software such as drivers and agents to be loaded on your system in order to take advantage of these support solutions and capabilities.
- Use TOLIS Group remote support solutions where applicable. TOLIS Group strongly encourages you to use available support technologies provided by TOLIS Group. If you choose not to deploy available remote support capabilities, you may incur additional costs due to increased support resource requirements.
- Cooperate with TOLIS Group in attempting to resolve the problem over the telephone. This may involve performing routine diagnostic procedures, installing additional software updates or patches, removing third-party options, and/or substituting options.
- Make periodic backup copies of your files, data, or programs stored on your hard drive or other storage devices as a precaution against possible failures, alteration, or loss. Before returning any TOLIS Group Hardware Product for warranty support, back up your files, data, and programs, and remove any confidential, proprietary, or personal information.
- Maintain a procedure to reconstruct your lost or altered files, data, or programs that is not dependent on the TOLIS Group Hardware Product under warranty support.
- Notify TOLIS Group if you use TOLIS Group Hardware Products in an environment that poses a potential health or safety hazard to TOLIS Group employees or subcontractors. TOLIS Group may require you to maintain such products under TOLIS Group supervision and may postpone warranty service until you remedy such hazards.
- Perform additional tasks as defined within each type of warranty service listed below and any other actions that TOLIS Group may reasonably request in order to best perform the warranty support.

Types of Hardware Warranty Service

Listed below are the types of warranty services that may be applicable to the TOLIS Group Hardware Product you have purchased. For more details, refer to the Limited warranty period section.

Parts-only warranty service

Your TOLIS Group Limited Warranty may include a parts-only warranty service. Under the terms of parts-only service, TOLIS Group will provide replacement parts free of charge. If TOLIS Group carries out the repair, labor and logistics costs are at your expense.

Advanced unit replacement warranty service

Your TOLIS Group Limited Warranty may include an advanced unit replacement warranty service. Under the terms of the advanced unit replacement warranty service, TOLIS Group will ship a replacement unit directly to you if the TOLIS Group Hardware Product you purchased is diagnosed as defective. On receiving the replacement unit, you will be required to return the defective unit back to TOLIS Group, in the packaging that arrives with the replacement unit, within a defined period of time, normally seven (7) calendar days. TOLIS Group will incur all shipping and insurance costs for ground delivery to you, however, shipping, insurance and logistic charges for return of the defective unit to TOLIS Group are your responsibility. Second-day, next-day and same-day delivery options are also available for for an additional charge.

For advanced unit replacement warranty, a valid credit card is required. TOLIS Group reserves the right to place a hold on the provided credit card for the full replacement cost of the replacement unit. If the defective unit has not been received by TOLIS Group after fourteen (14) calendar days, the credit card provided will be charged the full replacement cost of the replacement unit.

General

Any action related to this Agreement shall be governed by the substantive laws of the State of Arizona, without regard to conflicts of law principles. The State and Federal courts located in Maricopa County, Arizona, shall have sole jurisdiction over any dispute arising hereunder, and the parties hereby consent to the personal jurisdiction of such courts. Neither this Agreement, nor any rights hereunder, may be assigned by operation of law or otherwise, in whole in part, by Client without the prior, written permission of TOLIS. Any sale of more than fifty percent (50%) of the common voting stock of, or other right to control, Client shall be deemed an assignment. Any purported assignment without such permission shall be void. Any waiver of any rights of TOLIS under this Agreement must be in writing, signed by TOLIS, and any such waiver shall not operate as a waiver of any future breach of this Agreement. In the event any portion of this Agreement is found to be illegal or unenforceable, such portion shall be severed from this Agreement, and the remaining terms shall be separately enforced. The parties agree that any breach or threatened breach of this Agreement by Client is likely to cause TOLIS damage that is not fully reparable by payment of damages, and further agree that in such case TOLIS shall be entitled to seek and obtain injunctive or other equitable relief to protect its rights hereunder. Client's performance hereunder and use of the Software shall at all times comply with all applicable laws, rules and regulations, including those governing export of technical information, and Client shall fully indemnify, defend and hold harmless TOLIS against any violation thereof. This Agreement is the entire agreement between the parties with respect to this subject matter, and supersedes any and all prior or contemporaneous, conflicting or additional communications, negotiations or agreements.

Appendix E: Open Source @ TOLIS Group

This section provides information on Open Source Software components, licenses and source code used in the bruAPP/OS product. As TOLIS Group is required to reproduce the software licenses, acknowledgements and copyright notices as provided by the owners, all such information is provided in its native language form, without modification or translation.

For instructions on how to obtain a copy of any source code being made publicly available by TOLIS Group related to software used in this TOLIS Group product, you may send your request in writing to:

TOLIS Group, Inc.
ATTN: Open Source Management
21630 N 19th St
Suites B-12 & B-13
Phoenix, AZ 85027
USA

The TOLIS Group website <http://opensource.tolisgroup.com> also contains information regarding TOLIS Group's use of open source and source code for related products.

The table below shows a list of Open Source Licenses and the corresponding Software Components used in this product.

Open Source License	Software Components & Version
GPL	SmartmonTools 5.39.1, XFSProgs 3.1.3
GPLv2	BusyBox 1.17.1, HWClock 2.23, Linux kernel 2.6.28.9, MDAdm 3.2.2
BSD 2-Clause	LILO 22.6.1
Python Software Foundation License v2	pydns 2.3.3, Python 2.6.5
OpenSSL License	OpenSSL 1.0.0e



The bruAPP/OS itself is not open source and is not released under any open source license. The bruAPP/OS is released under the EULA listed in Appendix A of this document.

XFS is a registered trademark of Silicon Graphics International Corp.
Linux is a registered trademark of Linus Torvalds and administered by the Linux Mark Institute.
Python is a registered trademark of the Python Software Foundation, used by TOLIS Group with permission from the Foundation.