Oracle Talari T860

Hardware Guide

Original Publication Date: Nov 1, 2019

ORACLE

ORACLE

Table of Contents

About This Document

This guide describes the physical characteristics of the Oracle Talari T860 Adaptive Private Networking (APN) Appliance. It includes setting up the physical connections on front and back panels as well as how to mount this appliance in a rack. The intended audience of this document is a Network Administrator or a Network Operator

My Oracle Support

My Oracle Support (https://support.oracle.com) is your initial point of contact for all product support and training needs. A representative at Customer Access Support (CAS) can assist you with My Oracle Support registration.

Call the CAS main number at 1-800-223-1711 (toll-free in the US), or call the Oracle Support hotline for your local country from the list at http://www.oracle.com/us/support/contact/index.html. When calling, make the selections in the sequence shown below on the Support telephone menu:

1. Select 2 for New Service Request.

2. Select 3 for Hardware, Networking, and Solaris Operating System Support.

3. Select one of the following options:

   - For technical issues such as creating a new Service Request (SR), select 1.

   - For non-technical issues such as registration or assistance with My Oracle Support, select 2.

You are connected to a live agent who can assist you with My Oracle Support registration and opening a support ticket.

My Oracle Support is available 24 hours a day, 7 days a week, 365 days a year.

Emergency Response

In the event of a critical service situation, emergency response is offered by the Customer Access Support (CAS) main number at 1-800-223-1711 (toll-free in the US), or call the Oracle Support hotline for your local country from the list at http://www.oracle.com/us/support/contact/index.html. The emergency response provides immediate coverage, automatic escalation, and other features to ensure that the critical situation is resolved as rapidly as possible.

A critical situation is defined as a problem with the installed equipment that severely affects service, traffic, or maintenance capabilities, and requires immediate corrective action. Critical situations affect service and/or system operation resulting in one or several of these situations:

- A total system failure that results in loss of all transaction processing capability

- Significant reduction in system capacity or traffic handling capability

- Loss of the system's ability to perform automatic system reconfiguration

- Inability to restart a processor or the system

- Corruption of system databases that requires service affecting corrective actions

- Loss of access for maintenance or recovery operations

- Loss of the system ability to provide any required critical or major trouble notification

Any other problem severely affecting service, capacity/traffic, billing, and maintenance capabilities may be defined as critical by prior discussion and agreement with Oracle.

Locate Product Documentation on the Oracle Help Center Site

Oracle Communications customer documentation is available on the web at the Oracle Help Center (OHC) site, http://docs.oracle.com. You do not have to register to access these documents. Viewing these files requires Adobe Acrobat Reader, which can be downloaded at http://www.adobe.com.

1. Access the Oracle Help Center site at http://docs.oracle.com.

2. Click Industries.

3. Click the Oracle Communications link.

   Under the SD-WAN header, select a product.

4. Select the Release Number.

   A list of the entire documentation set for the selected product and release appears.

5. To download a file to your location, right-click the PDF link, select Save target as (or similar command based on your browser), and save to a local folder.

Reference Documents

The following documents are available:
- *Talari APN Glossary*
- *Talari APN Appliance T860 Getting Started Guide*
- *Talari APN Appliance Quick Start Guide*
- *Talari APN Implementation Guide*

Hardware and Software Requirements

Oracle Talari T860 APN Appliances (APNAs) have the following hardware and software requirements:

Hardware:

T860 APNAs require a standard 19 inch (480mm) two post rack for mounting.

Software:

The APNA Web Console is supported in latest versions of the following web browsers:

- Microsoft IE9 – IE11
- Mozilla Firefox
- Google Chrome

Supported browsers must have cookies enabled.
Supported browsers must have JavaScript installed and enabled.

Display:

A minimum screen resolution of 1024 x 960 or greater is recommended.

About the APN Appliance

Designed to bring reliability and bandwidth to regional data centers and small headquarters, the 1U rack-mountable T860 APN Appliance (APNA) affordably delivers up to 200 Mbps across 8 WAN links and connects up to 32 sites, complementing Talari's higher-capacity APNA models.

Talari APN Overview

Talari Networks is redefining WAN reliability and application performance with its family of APN Appliances by aggregating and transforming affordable broadband links to deliver business-class performance and reliability at consumer prices. Talari APN Appliances (APNAs) are seamlessly added to existing networks to deliver more bandwidth, reduced WAN operating expenses, and greater reliability than any existing single-provider WAN.

Using our patented Adaptive Private Network technology, Talari's solution combines diverse, abundant, affordable IP bandwidth sources, and provides reliable, resilient and high-quality connectivity between sites, insuring application continuity. Talari APNAs deployed in the main office and remote offices provide a network of "Conduits" between sites. Each Conduit is made of multiple WAN links and data transmitted across the Conduits is controlled and optimized to use network resources available across all WAN Links.

ORACLE

Front Panel Configuration

Bypass Indicators

Power On Disk Activity

Power Button
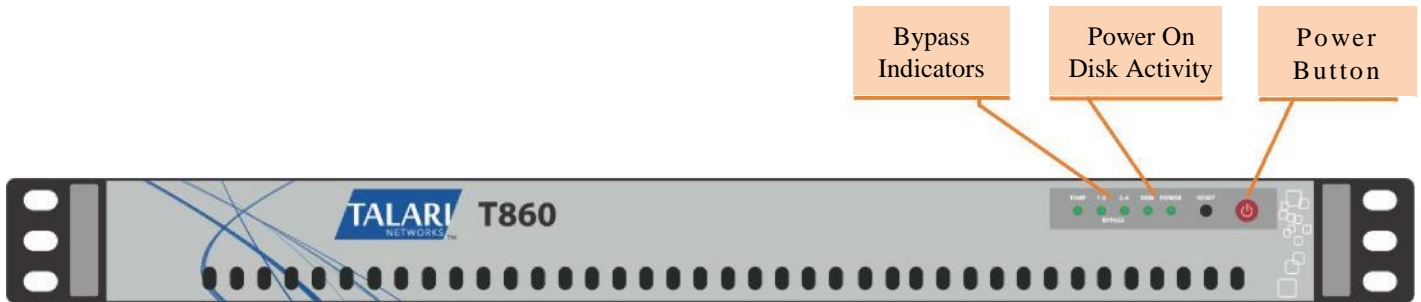
Front LED Codes

LED	Description
Power	Off = The system is powered off Green = The system is powered on
Disk	Flickering Yellow = Disk activity
Bypass	Off = The interfaces are in bypass mode Blink Green = The interfaces are NOT in bypass mode
Temp	Off = System temperature is normal Red = System has overheated

Rear Panel Configuration

Port 1 – User defined; forms a bypass pair with Port 2
Port 2 – User defined; forms a bypass pair with Port 1

Port 3 – User defined; forms a bypass pair with Port 4
Port 4 – User defined; forms a bypass pair with Port 3

DB-9 Console Port

Management Port

USB 2.0 Ports

Port 5 – User defined; default 192.168.0.2/30

Ports X1-X4 – User defined
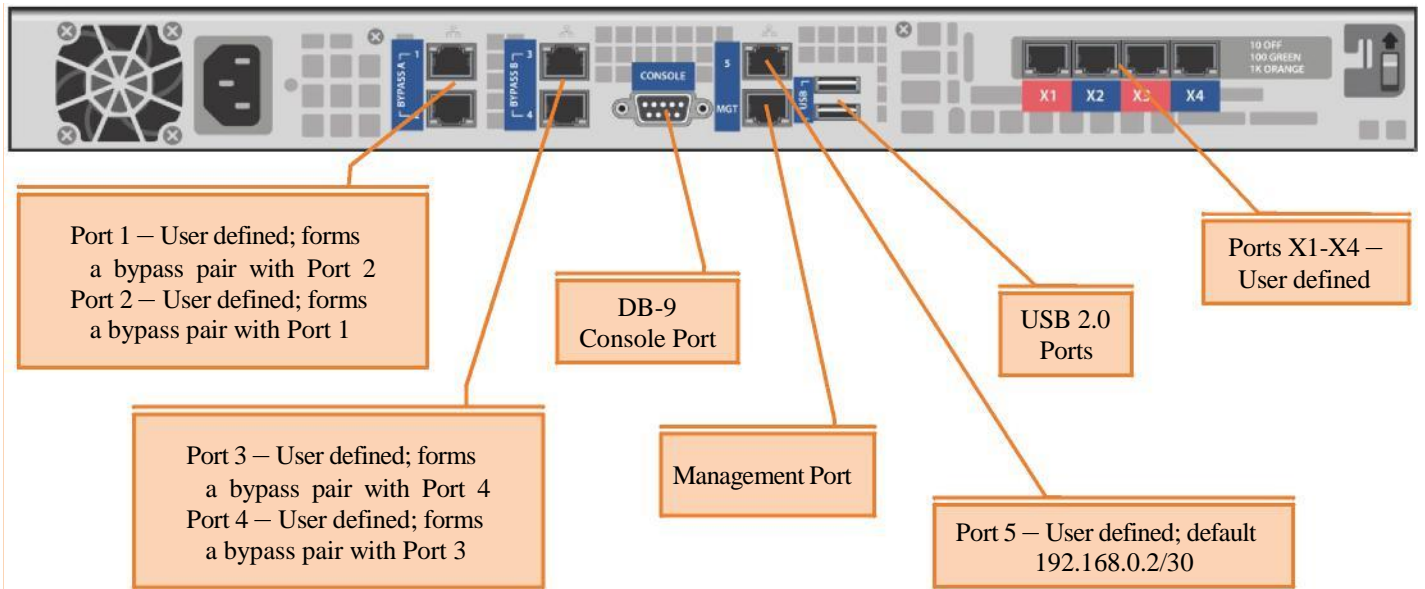
Ethernet Ports

Port	Description
1	User defined; forms a Bypass pair with Port 2
2	User defined; forms a Bypass pair with Port 1
3	User defined; forms a Bypass pair with Port 4
4	User defined; forms a Bypass pair with Port 3
5	User defined; functions as management auxiliary port; default IP address is 192.168.0.2/30
MGT	Management port (dedicated-out of band)
X1	Auxiliary; user defined
X2	Auxiliary; user defined
X3	Auxiliary; user defined
X4	Auxiliary; user defined
Console	Used for service and maintenance

NIC Indicator Codes

Ethernet ports on the rear panel have indicator lights for information on network activity and link status.

Ethernet Activity Status LED
Flashing Amber = Network Activity

Ethernet Link Status LED
Off = 10 Mbps
Green = 100 Mbps
Amber = 1000 Mbps

LAN/WAN Port Connectivity
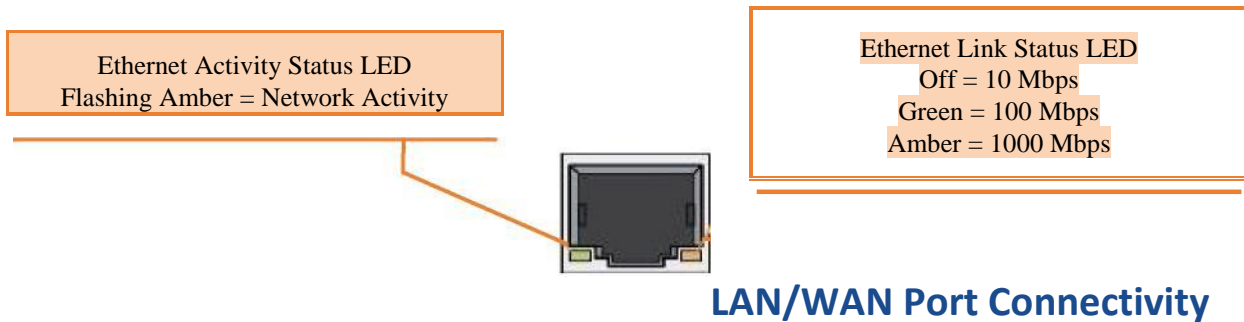
Connect a configured Ethernet LAN port to the LAN side of your network. Connect the corresponding configured WAN port to the WAN side of your network. As shown above, port 1 corresponds to port 2, while port 3 corresponds to port 4.

The port pairs mentioned above can operate in bypass mode, illustrated below. The bypass capability allows the APNA to forward Ethernet frames between the bypass port pairs (shown below) in the event of power loss or if the Talari Service is disabled.

Untrusted Interfaces

Ethernet ports may be configured as untrusted interfaces. Untrusted interfaces are for commodity
WAN links that the administrator does not want to place within the normal switched or routed enterprise network because of security or convenience. In other words, untrusted interfaces connect to untrusted zones. Non-Conduit traffic from the WAN to an untrusted interface is unable to communicate to any network point inside of the APNA. For example, a user on the enterprise LAN cannot ping or otherwise communicate with any entity on the Ethernet domain attached to an untrusted interface through the APNA or vice-versa. An untrusted segment is entirely isolated from the rest of the network with the exception of the APNs own AES encrypted paths.

Hardware Specifications

The T860 APNA has the following are the hardware specifications.

	Specification
Power	100-240V, 50-60 Hz, 3-1.5 Amp Max, 200W
Physical Dimensions	EIA RS-310 standards 1U Height 1.7" (43mm) Width 16.8" (426mm) Depth 14.0" (356mm) Gross Weight 11lbs (5kg)
Mounting Options	Rack mount recessed flanges
System LEDs Front Panel	Power Disk (SSD Activity) Temp (System Overheat) Bypass (2x)
Link LEDS Rear Panel	Link Activity Link Speed
Buttons Front Panel	Power On/Off button System Reset button
Operating Temperature	32°F to 140°F (0° to 60°C)
Storage Temperature	-40°F to 140°F (-40°C ~ 60°C)
Humidity Range	8% to 90% (non-condensing) operating environment 5% to 95% (non-condensing) storage environment
Capacity	10 individual Gigabit Ethernet Ports
User interfaces	2 rear accessible USB 2.0 ports Serial Port 10 individual Gigabit Ethernet ports
Mean Time Between Failure (MTBF) in Hours	113,207

Installing the APN Appliance

Rack Installation

Prior to installing the system in a rack, adhere to the following rack installation guidelines:
- Ensure that there is adequate airflow in the rack. Improper installation or restricted airflow can damage the equipment.
- You should leave at least 1U of vertical space between each system you install in a rack.
- The rack width and depth must allow for proper serviceability and cable management.
- Make sure the rack is properly secured to the floor or ceiling and grounded.
- Always load the rack from the bottom up.
- Load the heaviest component in the rack first.
- Make sure the rack is level and stable before pulling a component out of the rack.
- Do not move racks by yourself; at least two people are needed to move a rack and to safely stage equipment.
- Cables should be easily identifiable.

LAN/WAN Connections

When connecting each Ethernet cable (LAN, WAN) to the appropriate connector on the T860 APNA:
- Position the cables carefully, so that they do not put strain on the connectors.
- Organize cables in bundles such that cables do not intertwine.
- Inspect the cables to make sure that the routing and bend radii are satisfactory. Reposition cables, if necessary.
- Install cable ties in accordance with site requirements.

Connecting Power to the Appliance

When connecting power to the T860 APNA:
- Make sure the system is powered off using the power button on the front of the appliance.
- Plug the AC power cord into the appliance.
- Plug the AC power cord into an uninterrupted AC power source.

The T860 APNA uses 120-240 V AC.

Important Note About Cabling and Bypass Mode

When your APNA is operating in bypass mode (when powered off, for example), logic used by the appliance represents the functionality provided by a crossover cable. This may cause a loss of the link between the APNA and older network devices that do not support auto-mdix when straight-through cables are used to connect the LAN and WAN ports of the APNA. In such a case, a crossover cable is required from the APNA WAN port to the device.

If your network devices support auto-mdix capability, the link should be automatically established when in bypass mode and there should be no need for crossover cables. Talari recommends testing and verifying this capability with the APNA powered off for proper operation.

For assistance, please contact your Talari representative, or the Talari Support team.

Powering Up the Appliance

Checklist for Power Up

Power up the T860 APNA by completing the following steps:
- Determine the IP addresses for the Ethernet management interface.
- Confirm that the chassis is securely mounted.
- Confirm that power and Ethernet cables are connected.
- Press the power button on the front of the appliance to power on.

Power up is complete when the following indications appear:
- The green power LED on the front of the appliance comes on.
- Two quick beeps indicate that the Appliance is booting normally.
- The fans operate.
- The hard drive LED will flicker as the hard drive is accessed.

If you encounter problems when you power up the appliance, please see the Troubleshooting section of this document below.

Configuring the T860 APN Appliance

The T860 APNA ships with a default IP address of 192.168.0.2/30. In order to access your appliance remotely, you must first connect to it directly via the Management Auxiliary Port (port 5) and configure a management IP address for the appliance.

Use an Ethernet cable to connect from a PC to the interface labeled "5," then refer to the *T860 APN Appliance Getting Started Guide* (included in the shipping box) or to the *APN Appliance Quick Start Guide* for instructions on how to access and use the web console to configure the management IP address.

Connecting to the Console Port

The T860 APNA can be directly connected to a PC through a console port located on the rear panel. In order to serial into your appliance via the console port, on your terminal application you must select the specific serial line and use the following settings:

- Speed (baud rate) - 115200
- Data bits - 8
- Stop bits - 1
- Parity - None
- Flow control - XOFF
- Console cable - DB9-DB9

Troubleshooting

Basic Troubleshooting

The key to problem solving is to isolate the problem to a specific subsystem by comparing what the appliance is doing to what it should be doing. The T860 APNA has LEDs and NIC indicators on the front and rear panels for the indication of power, disk activity, Ethernet activity, etc. These indicators can assist in isolating the problem to a specific subsystem.

Appliance Troubleshooting Basics

Problem	Resolution
Cannot ping the T860 APN appliance	Make sure the appliance has power. Confirm the device has a management IP address assigned. Verify the management port has link on the Talari and switch.
Ethernet port not forwarding traffic	Verify the switch has auto-negotiation enabled. Verify the switch has the port enabled. Confirm you connected to the correct port on the Talari.
Cannot access the Talari APNA Web Console	Confirm you are using the correct IP address. Confirm the management port of the T860 APNA is connected to a switch and there is activity.
LEDs do not turn on	Check AC power source, Talari On/Off buttons.
Six beeps during boot process	Ensure that the Appliance's memory is installed and available

Troubleshooting Bypass Mode (Fail-to-Wire)

The T860 APNA is equipped with a capability known as "bypass mode" or "fail-to-wire." This capability is designed to prevent a single point of failure. If there is a serious problem with the T860 APNA, the bypass pair goes into bypass mode and forwards traffic through as though the appliance were a wire.

A bypass pair may be configured as either "fail-to-wire" or "fail-to-block." If a bypass pair is configured for "fail-to-block," bypass mode will never be activated, even if power is lost. Bypass

pairs are configured as "fail-to-wire" by default.

Bypass mode is used when the APNA is not powered on, when the APNA is powered on but is not configured, or when the APNA is powered on and configured but the Talari Service is disabled. When the T860 APNA is in bypass mode, one or both of the bypass LEDs will stop blinking Green.

Please also see the section above, "**Important Note About Cabling and Bypass Mode**"

Problem	Resolution
Bypass mode blocking traffic	Verify that the T860 APN appliance has connectivity to the L2/L3 devices on its LAN/WAN ports. Verify that the correct cables are used and that the networking devices have auto-negotiate set for their ports.
T860 stays in bypass mode	Confirm that the T860 is configured properly and that the Talari Service is enabled.