

Oracle Talari E500

Hardware Guide



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About This Document

This guide describes the physical characteristics of the Oracle Talari E500 Adaptive Private Networking (APN) Appliance. It includes setting up the physical connections on front panel 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.

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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 E500 Installation Guide*
- *Talari APN Appliance Quick Start Guide*

Hardware and Software Requirements

Talari E500 APN Appliances (APNAs) have the following hardware and software requirements:

Hardware:

E500 appliances require a standard 19 inch (480mm) two-post rack for mounting.

Software:

The Talari 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 Appliance

The E500 is an extension of the E-series of Oracle Talari Appliances and intended for use in mid-sized branch or regional offices that require higher performance and port density than the E100 provides. The E500 supports WAN Optimization and Easy 1st Install.

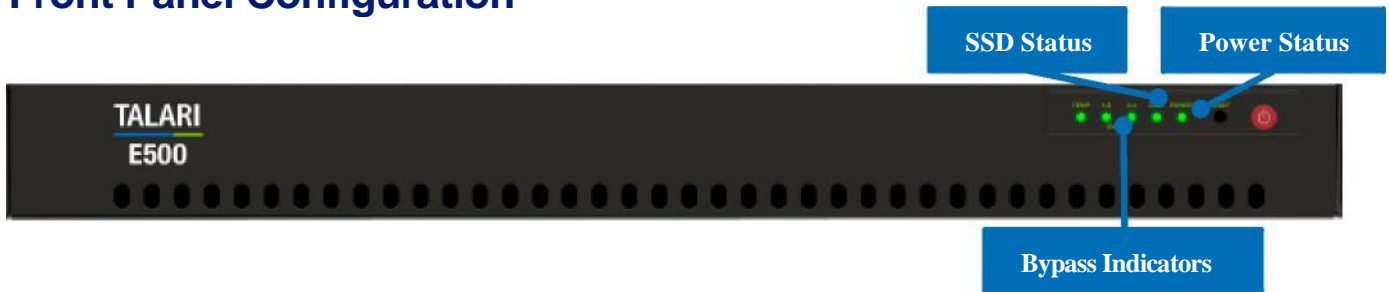


Talari APN Overview

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.

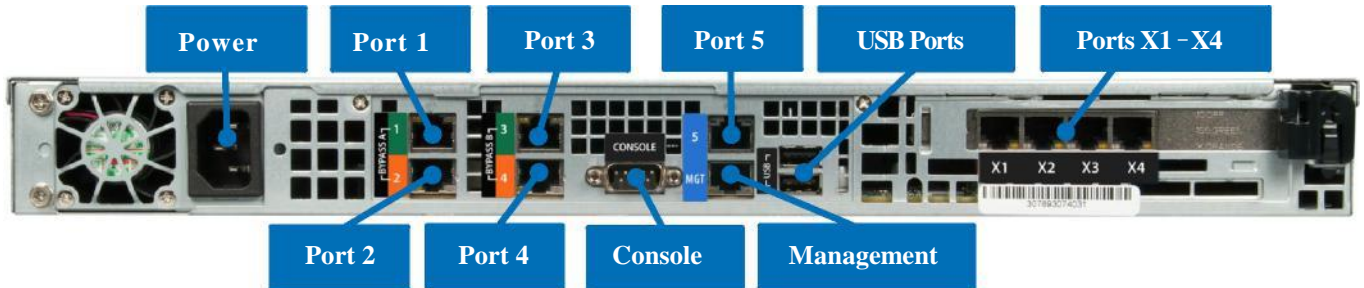
Front Panel Configuration



Bypass Indicators: Blinking Green = Interfaces not in bypass mode; Off = Interfaces in bypass mode

SSD Status: Flickering Yellow = Disk Activity

Power Status: Green = Power On



Rear Panel Configuration

Power: A/C Power Connector

Port 1: Gigabit Ethernet (Bypass pair with Port 2)

Port 2: Gigabit Ethernet (Bypass pair with Port 1)

Port 3: Gigabit Ethernet (Bypass pair with Port 4)

Port 4: Gigabit Ethernet (Bypass pair with Port 3)

Console: DB9 console port (115200/8-N-1)

Port 5: Auxiliary management port, used for Manual Install

Management: Management port

USB Ports (2): USB 2.0

Ports X1 – X4: Gigabit Ethernet ports (non-bypass)

NIC Indicator Codes

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



Hardware Specifications

The E500 APNA has the following are the hardware specifications.

	Specification
Power	100-240V, 50-60 Hz, 3-1.5 Amp Max, 200W
Mounting Options	Rack mount recessed flanges
Physical Dimensions	EIA RS-310 standards 1U Height 1.7" (43mm) Width 17.2" (437mm) Depth 26.5" (650mm) Gross Weight 24 lbs (10.89kg)
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 to 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 Talari Appliance

Unpacking and Inspection

- Remove E500 appliance and accessories from box.
- Remove E500 from plastic wrapping.
- Inspect appliance for signs of damage.
- Ensure all accessories are included.

Rack Mounting

Safety Recommendations

Prior to installing the device in a rack, adhere to the following rack installation guidelines:

- Ensure that there is adequate airflow in the rack. Restricted airflow can damage the equipment.
- Leave at least 1U of vertical space between each device installed in the rack.
- The rack width and depth should allow for proper serviceability and cable management.
- Ensure the rack is properly secured to the floor or ceiling.
- Ensure the rack is properly grounded.
- Ensure the installer is properly grounded and wearing appropriate safety equipment.
- Always load the rack from the bottom up.
- Load the heaviest devices in the rack first.
- Make sure the rack is level and stable before pulling a device out of the rack.
- Do not move racks by yourself; at least two people are recommended to move a rack.
- Cables should be easily identifiable.

LAN/WAN Connections

When connecting each Ethernet cable (LAN, WAN) to the appropriate connector on the E500:

- 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.

Important Note About Cabling and Bypass Mode

If your Talari appliance is operating in bypass mode, logic used by the appliance represents the functionality provided by a crossover cable. This may cause a loss of the link between the Talari appliance 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 Talari appliance. In such a case, a crossover cable is required from the Talari WAN port to the network device.

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

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

Powering Up the Appliance

When connecting power to the E500:

- Plug the AC power cord into the appliance.
- Plug the AC power cord into an uninterrupted AC power source.
- The appliance will start automatically.

The E500 uses 120-240 VAC.

Network Deployment Options

Before getting started it is important to determine how the E500 will be deployed. When considering deployment options for the E500, please note that **all bypass pairs will default to Fail-To-Block until configured otherwise.**

Example instructions for some of the most common deployment scenarios are provided below:

E500 as a Router (Gateway, Fail to Block)

Description: The E500 is deployed as the WAN gateway for the site, and bypass pairs are configured as Fail-To-Block. Use this option if you plan to use the Talari Appliance as the edge device for the site. Proceed to the pages below based on your installation method:

Easy 1 st Install:	Page 12
Manual Install:	Page 14

E500 as Layer 2 Fail-To-Wire (Overlay)

Description: The E500 is deployed on the LAN side of the gateway, and bypass pairs are configured as Fail-To-Wire. Use this option if you prefer to retain existing edge devices or plan to install an alternative edge device on the WAN side of the Talari Appliance. Proceed to the pages below based on your installation method:

Easy 1 st Install:	Page 12
Manual Install:	Page 14

E500 with MPLS & Internet Hybrid

Description: The E500 is deployed as an overlay for MPLS while performing routing/firewall capabilities for internet links. Use this option if recommended by your SA, or if you have an MPLS/Internet hybrid network and will not be using the CE Router Replacement functionality of the Talari APN. Proceed to the pages below based on your installation method:

Easy 1 st Install:	Page 12
Manual Install:	Page 14

Other Options

There are other deployment options, and our Talari Implementation team members will assist you with planning and deploying your new appliance.

Deploying the E500 APN Appliance

Easy 1st Install

Site Deployment Criteria:


NCN:

- Easy 1st Install can be used once the Network Control Node (NCN) has been set up for your network. If the E500 being deployed is intended to become the NCN, please see the instructions for manual installation.
- Active Appliance Package: The NCN must be running an active configuration which includes the E500 for the site being installed.

Client Site Connectivity:

- Internet, DHCP, and DNS connectivity to the management interface are required to use Easy 1st Install. If one or more are not available, please see the instructions for manual installation. If the management interface is connected to the LAN segment, communication with the public Internet will be blocked and Easy 1st Install will fail.
- Cable the LAN and WAN ports in accordance with the Talari configuration for the site.

Use NCN to Upload Client Package to Registration Server:

1. Log in to the Web Console of the NCN.
2. Navigate to **Configuration > Easy Install**.
3. Locate the Site name of the E500 being deployed.
4. Click the Edit pencil  to open the Set Serial Number window.
5. Enter the serial number of the E500 being deployed and click the Set Serial Number button. (The serial number may be located on the read panel of the appliance.)
6. Observe the **Upload/Activate** column. Click the **Upload/Activate** text when it appears.
7. Continue to observe the **Upload/Activate** column. Once the text reads **Upload Complete**, proceed to the next section.

Deploy the Talari Appliance:

8. Cable the E500 with the provided cables.
9. Ensure that the appliance management interface is cabled for Internet connectivity.
10. Connect the power cord to the E500. Connect the other end to an appropriately grounded power source. The E500 will power on automatically.
11. The E500 will begin the Easy 1st Install process. Please allow up to ten minutes for the process to complete. (From the NCN Web Console, observe the **Configuration > Easy Install** page for status updates during installation.)
12. Once the Easy 1st Install process has completed, the Talari service will automatically be enabled.

6. To access the Management IP address of the E500 via the conduit after deployment is complete, move the blue management cable to the LAN switch.

Manual Install

Site Deployment Criteria:

Manual (Legacy) Install requires physical access to the appliance. The end user will require a PC which can be connected directly to the port 5 of the Talari Appliance via an Ethernet cable. Cable the LAN and WAN ports in accordance with the Talari configuration for the site.

Pre-Deployment Requirements:

The network administrator must have an active configuration which includes a client package for this site running on the NCN. An appropriate IP address, subnet mask, and gateway for the management interface should be provided for the on-site user to configure.

If the network administrator will have access to the new appliance once an on-site user configures the management interface, proceed to step 4 of Deploying the Talari Appliance. If not, the on-site user will require the client package from the running configuration:

1. From the Web Console of the NCN, navigate to **Manage Network > Change Management**.
2. Download the active package for the new client site.
3. Send the zipped client package to the on-site user who will be deploying the appliance.

Deploying the Talari Appliance:

1. Connect the power cord to the E500. Connect the other end to an appropriately grounded power source. The E500 will power on automatically.
2. Connect your PC directly to the port 5 of the E500.
3. From the PC connected to the Talari:
 - a. Change the IP address of your PC to 192.168.0.1.
 - b. Change the Subnet Mask of your PC to 255.255.255.252.
 - c. Open a web browser and go to the Talari web console at 192.168.0.2. The username is *talariuser* and the default password is *talari*. **We strongly recommend changing the default password as soon as possible.**
 - d. Select **Manage Appliance > Local Network Settings** from the pull-down menu.
 - e. Set the IP Address, Subnet Mask, and Gateway IP Address for the Talari as provided by your network administrator.
 - f. Click Change Settings. If your network administrator will be applying the configuration package, you may now restore the original network settings on your PC.
4. To apply the configuration package, navigate to **Manage Appliance > Local Change Management**.
5. Click Browse and select the .zip package provided by your network administrator, then click Upload.
6. When the upload is complete, click Next to proceed to activation.
7. Click Activate Staged to complete the process.

8. Once the activation process has completed, navigate to **Manage Network > Service/WAN Links** and enable the Talari service.
13. You may now restore the original network settings on your PC.

Troubleshooting

Appliance Troubleshooting Basics

Problem	Resolution
Cannot ping the E500 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 E500 APNA is connected to a switch and there is activity.

Troubleshooting Inline Mode (Fail-to-Wire)

The E500 APNA is equipped with a capability known as Inline mode with the interfaces in Fail-to-Wire. This capability is designed to prevent a single point of failure. If there is a serious problem with the E500 APNA, the bypass pair goes into bypass mode and forwards traffic through as though the appliance were a wire.

Interfaces 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.

If configured, bypass mode is used when the APNA is not powered on or when the Talari Service is disabled.

Please also see the section above, “Important Note About Cabling and Bypass Mode”.

Problem	Resolution
Bypass mode blocking traffic	Verify that the E500 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.
E500 stays in bypass mode	Confirm that the E500 is configured properly and that the Talari Service is enabled.

