

Cisco UC 500 and SR 520-T1 Secure Router Setup Using Cisco Configuration Assistant 2.1 or Later

This application note describes how to connect and configure network settings for a Cisco UC 500 behind a Cisco SR 500 Series Secure Router Model SR 520-T1 using the SR 520-T1 Configuration Utility and Cisco Configuration Assistant 2.1 or later. The SR 520-T1 provides T1 WAN termination and advanced security features for a Cisco SBCS network.

The information in this document is intended for Cisco SMB Select-certified partners who are familiar with configuration of the Cisco Smart Business Communications System (SBCS) using Cisco Configuration Assistant (CCA).

The procedures in this document apply to the following software versions:

- Cisco Configuration Assistant Version 2.1
- Cisco UC 500 software package, available at www.cisco.com/go/uc500swpk (Cisco.com account login and password required). Package files and versions vary, based on the UC 500 platform:
 - Version 7.0(3) for UC520 platforms (UC520-7.0.3.zip)
 - Version 7.1(3) for UC540 platforms (UC540-7.1.3.zip)
- Cisco SR 520-T1 software package (SR 520-T1-1.0.tar), available at www.cisco.com/go/sr500 (Cisco.com account login and password required).

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Overview

This document describes how to:

- Use the SR 520-T1 Configuration Utility to configure the T1 WAN connection on the SR 520-T1.
- Connect a UC 500 to an SR 520-T1 secure router and configure basic network, NAT, and firewall settings using the Cisco Configuration Assistant Telephony Setup Wizard.
- Upgrade software on the SR 520-T1 using the SR 520-T1 Configuration Utility.

IMPORTANT The procedures in this setup guide assume that both the UC 500 and the SR 520-T1 are at factory default configuration.

Before You Begin

Before performing the configuration setup procedures documented here:

- Make sure that you have read the *Cisco Small Business Pro SR 520-T1 Secure Router Quick Start Guide* and followed the instructions for physical installation of the SR 520-T1.
- Have the following equipment available:
 - UC 500 platform and SR 520-T1 secure router with current software packages installed.
 - Two Ethernet cables: one for directly connecting the PC running Cisco Configuration Assistant to the UC 500 or SR 520-T1 and one for connecting the UC 500 to the SR 520-T1.
 - T1 cable for connecting the T1 port on the SR 520-T1 to the T1 source
 - PC with Cisco Configuration Assistant 2.1 or later installed
- On the PC running Cisco Configuration Assistant:
 - Disable any third-party firewalls, TFTP services, and FTP services.
 - Make sure that only one network connection is enabled. For example, if your PC has a dual NIC card with both wireless and wired connections, disable the wireless connection.
- If you plan to modify the default data VLAN address for either the UC 500 or the SR 520-T1 secure router, note the IP addresses that will be used.

The default data VLAN address for UC 500 is 192.168.10.1; the default data VLAN address for the SR 520-T1 is 192.168.75.1.

- Gather the following information from the service provider for your T1 connection. This information must be accurate.
 - T1 channel range. Does your T1 connection use the full 24 channels or is it a fractional T1?
 - Type of encapsulation—HDLC or PPP
 - If the encapsulation type is PPP (Point-to-Point Protocol), the authentication method used:
 - No Authentication
 - PAP Authentication (requires username and password from service provider)
 - CHAP Authentication (requires username and password from service provider)
 - Clock Source (Frame Sync)—Network (slave) or Internal (master)
 - Line encoding—B8ZS or AMI

- Line framing—ESF D5 or SF D4
- Primary DNS server (required), secondary DNS server (optional), obtained from service provider

Setup Procedures for UC 500 and SR 520-T1 at Factory Default Configuration

When both the UC 500 and the SR 520-T1 are at factory default configuration, you can:

- Run the SR 520-T1 Configuration Utility to configure the T1 connection. If needed, modify the LAN0 IP address on the SR 520-T1 using the SR 520-T1 Configuration Utility (not Cisco Configuration Assistant).
- Using Cisco Configuration Assistant, create a customer site that includes both the SR 520-T1 and the UC 500 and connect to the customer site.
- Launch the Cisco Configuration Assistant Telephony Setup Wizard to configure network settings, disable NAT and firewall settings on the UC 500, and configure basic telephony.

These procedures are covered in the following sections:

- [Run the SR 520-T1 Configuration Utility, page 3](#)
- [Create a Customer Site that Contains the UC 500 and SR 520-T1 Secure Router, page 8](#)
- [Connect to the Customer Site and Run the Telephony Setup Wizard, page 10](#)
- [Verify Network Connectivity, page 12](#)
- [Suggested Next Steps, page 12](#)

Run the SR 520-T1 Configuration Utility

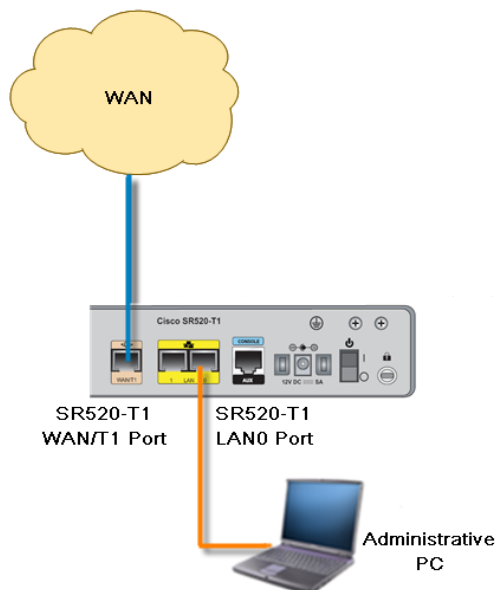
Ensure that the administrative PC is running the following software:

- Windows Vista or Windows XP (Service Pack 2) operating system
- Microsoft Internet Explorer 6.0 or later
- Adobe Flash Player version 9.0.124 or later

To configure the T1 connection on the SR 520-T1, follow these steps.

- Step 1. Connect the SR 520-T1 and administrative PC as shown in the following diagram:
- a. Connect the SR 520-T1 WAN port to the T1 source.

- b. Connect the administrative PC directly to the LAN0 port on the SR 520-T1.



- Step 2. Open a Web browser on the administrative PC and enter the following URL:

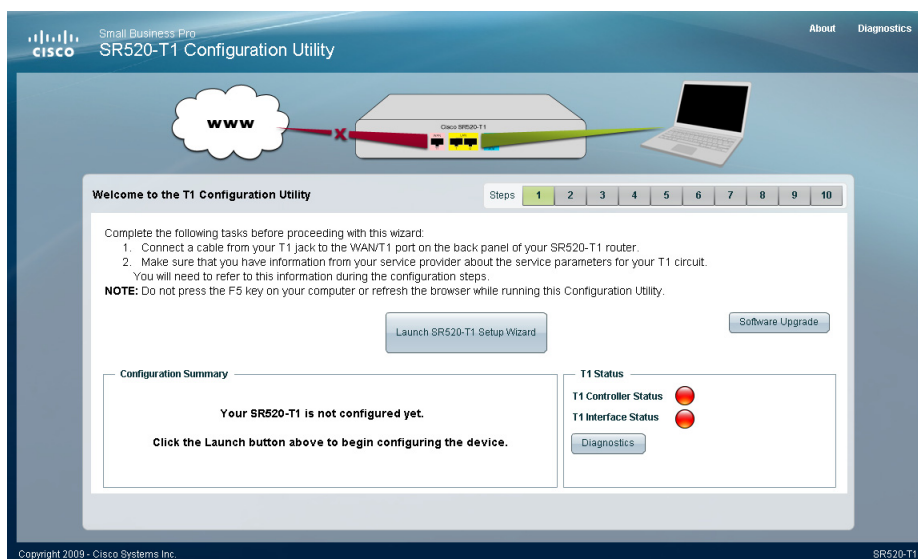
<http://192.168.75.1/setup>

- Step 3. When prompted for authentication, enter the default username and password for the SR 520-T1:

Username: cisco

Password: cisco

The first page of the Configuration Utility is shown below.



- Step 4. Click **Launch SR 520-T1 Setup Wizard**.

- Step 5. Complete the screens in the SR 520-T1 Configuration Utility as follows.
- a. On the **Channel Group Selection** page, configure channel group settings (full or fractional T1), as directed by your T1 service provider.
 - b. On the **T1 Settings** page, configure the T1 framing method, clock source, line encoding, and line framing as directed by your T1 service provider.
 - c. On the **T1 WAN IP Address Method** page, configure IP addressing for the T1 WAN connection obtained from your T1 service provider, either DHCP or Static IP.
 - d. On the **Basic Route Configuration** page, optionally add network routes for your network.

You do not need to add network routes for the UC 500 from this window.

Later on, you can modify WAN, data, and voice VLAN settings for the UC 500 using the Cisco Configuration Assistant Telephony Setup Wizard. When these settings are modified through the Telephony Setup Wizard, Cisco Configuration Assistant configures the necessary static routes on the SR 520-T1 automatically.

- e. On the **Administrator Account** page, you must change the default administrator account username and password from the factory default cisco/cisco.
- f. Click **Apply Settings**.

After the settings are applied, you will be prompted to authenticate with the new administrator username and password.

- g. *Optional.* If required, you can change the LAN0 IP address on the SR 520-T1.

See [Changing the LAN0 Address on the SR 520-T1 Using the SR 520-T1 Configuration Utility, page 5](#).

- h. To verify connectivity, you can execute a continuous ping test or specify a remote IP address or URL for a manual ping test.

Click **Diagnostics** to use the SR 520-T1 Configuration Utility's built-in diagnostic tools to troubleshoot connectivity problems, if needed.

- Step 6. Click **Finish and Close** to exit the SR 520-T1 Configuration Utility.

- Step 7. Continue with the section, [Create a Customer Site that Contains the UC 500 and SR 520-T1 Secure Router, page 8](#).

Changing the LAN0 Address on the SR 520-T1 Using the SR 520-T1 Configuration Utility

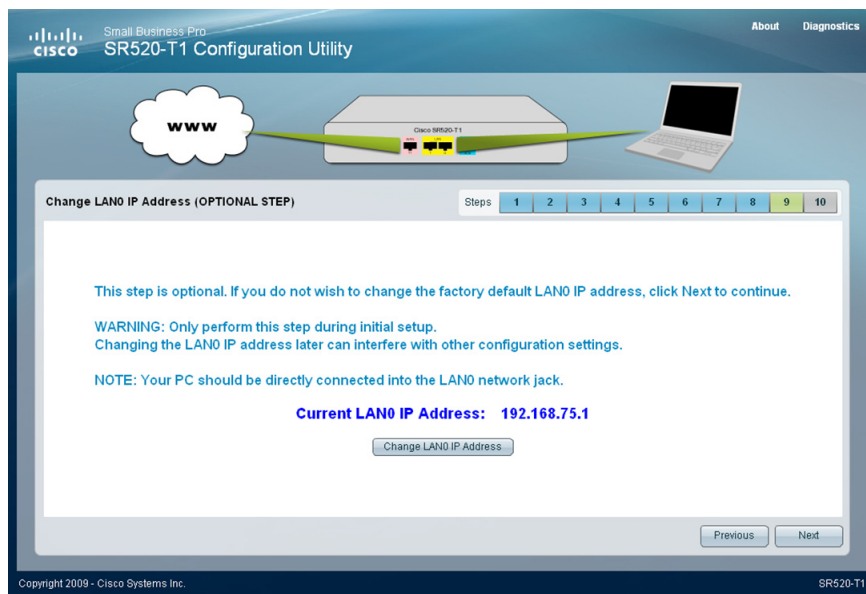
Using the SR 520-T1 Configuration Utility, you can change the default LAN0 IP address on the SR 520-T1. The default LAN0 address is 192.168.75.1.

You may want to do this if your existing network requires it or if you are setting up a multisite deployment that has more than one site with a combined SR 520-T1 and UC 500 in the topology.

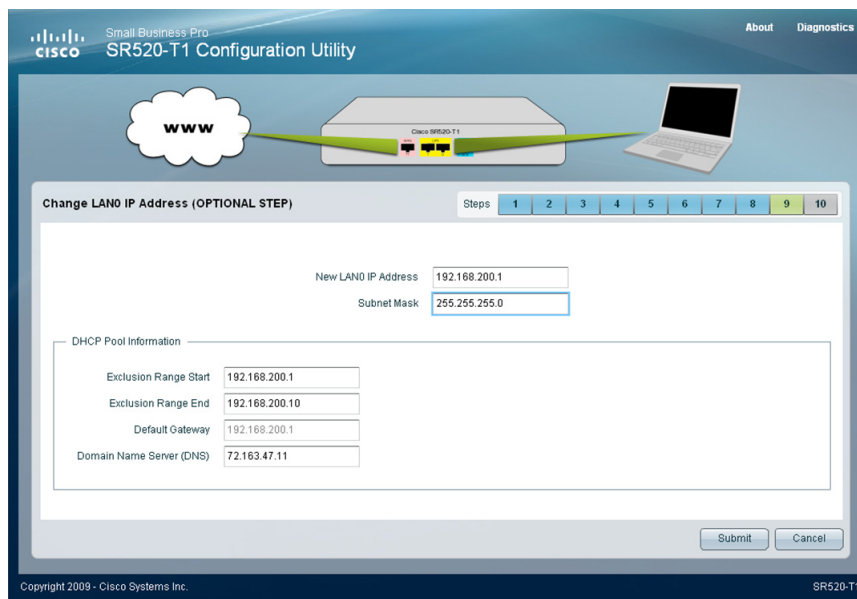
CAUTION You should only change the default LAN0 IP address during the initial setup and configuration of the SR 520-T1. Changing the LAN0 address after the network is configured will affect other dependent configurations such as static routes configured from the SR 520-T1 to the UC 500.

From the **Change LAN0 IP Address** screen of the SR 520-T1 Connection Utility, perform the following steps.

Step 1. Click **Change LAN0 IP Address**.

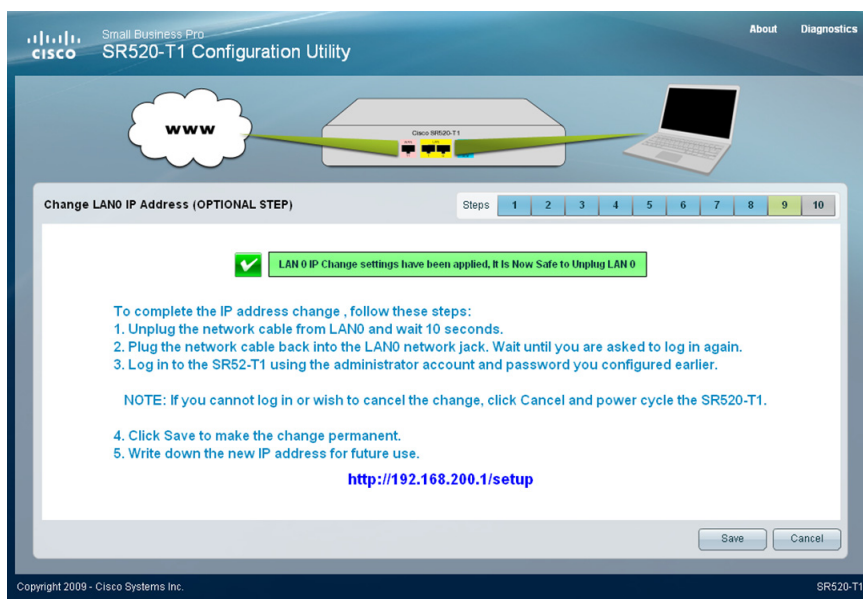


Step 2. Enter the new LAN0 IP address and subnet mask.



Step 3. If needed, modify starting and ending IP addresses for the DHCP pool exclusion range. By default, IP addresses 192.168.xxx.1 through 192.168.xxx.10 are excluded from the DHCP pool.

- Step 4. Specify the IP address of the primary Domain Name Server. The DNS server IP address is required.
- Step 5. Click **Submit**. A Caution message displays. Click **Submit** again to continue.
- Step 6. Wait until the changes are applied and the change complete message displays, as shown below.



- Step 7. Follow the onscreen directions:
- Unplug the network cable from LAN0 and wait 10 seconds.
 - Plug the network cable back into the LAN0 network jack. Wait until you are prompted to log in again.
- If you cannot log in or need to cancel the change, click **Cancel** and power-cycle the SR 520-T1.
- Log in to the SR 520-T1 using the administrator account and password you configured earlier.
 - Write down the new LAN0 IP address for future use.
 - Click **Save** to apply the change permanently. It will be written to the startup configuration on the SR 520-T1.
- Step 8. Continue with the section, [Create a Customer Site that Contains the UC 500 and SR 520-T1 Secure Router, page 8](#).

Create a Customer Site that Contains the UC 500 and SR 520-T1 Secure Router

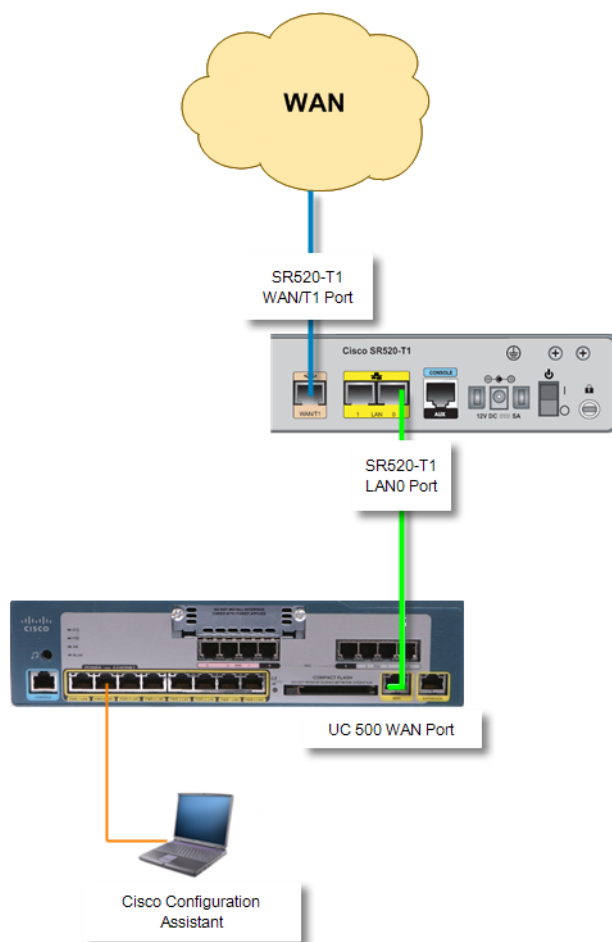
To create a customer site that contains the UC 500 and SR 520-T1 Secure Router, follow these steps.

Step 1. Connect the PC running Cisco Configuration Assistant, the SR 520-T1, and the UC 500 as shown in the following diagram.

- a. Connect the UC 500 WAN port to the LAN0 port on the SR 520-T1.

IMPORTANT Do NOT connect the UC 500 to the LAN1 port on the SR 520-T1. This will cause the configuration to fail.

- b. Connect the WAN/T1 port on the SR 520-T1 to the uplink port for the T1 connection.
- c. The PC running Cisco Configuration Assistant must be directly connected to one of the LAN ports on the UC 500.



Step 2. Launch Cisco Configuration Assistant.

- Step 3. In the Connect dialog, click **Add a New Site**.
- Step 4. In the Create New Customer Site dialog, enter a name and description for the new site, choose **Discover Devices: Using a Starting IP Address**, and enter 192.168.10.1 as the starting IP address, as shown below.

Create New Customer Site

Customer Site Information

Name: SR520-T1-UC500
Description: SR520-T1-UC500

Add Devices to Site

☐ Specify a Device IP Address:
☒ Discover Devices: Using a Starting IP Address
Starting IP Address: 192.168.10.1

Devices

Add to Site	IP Address	Hostname	Protocol	Device T...	Status
-------------	------------	----------	----------	-------------	--------

Total Rows: 0

OK Cancel Help

- Step 5. Click **Start** to begin discovering devices.
- Step 6. Once the UC 500 and the SR 520-T1 have been discovered, click **Stop** to end the discovery process, then click **OK** to return to the Connect window.

Create New Customer Site

Customer Site Information

Name: SR520-T1-UC500
Description: SR520-T1-UC500

Add Devices to Site

☐ Specify a Device IP Address:
☒ Discover Devices: Using a Starting IP Address
Starting IP Address: 192.168.10.1

Devices

Add to Site	IP Address	Hostname	Communic...	Device Type	Sta...
<input checked="" type="checkbox"/>	192.168.10.1	www_uc	https	UC520-8U-4FXO-K9	✓
<input type="checkbox"/>	10.1.1.11	SEP001F6C7F3438	http	Cisco IP Phone 7945	✗
<input checked="" type="checkbox"/>	192.168.75.1	SR520-T1	https	SR520-T1	✓
<input type="checkbox"/>	10.88.17.249	QArouter10	http	Cisco 3825	✗

Total Rows: 0

OK Cancel Help

Successfully discovered
UC 500 at 192.168.10.1

Successfully discovered SR
520-T1 at 192.168.75.1

- Step 7. Continue with the next section, [Connect to the Customer Site and Run the Telephony Setup Wizard](#), page 10.

Connect to the Customer Site and Run the Telephony Setup Wizard

- Step 1. From the Connect window, click the Customer Sites tab, select the new customer site from the list of sites, and click **OK** to connect.

- Step 2. When prompted to authenticate for the UC 500, enter the default user name and password for the UC 500:

Username: cisco

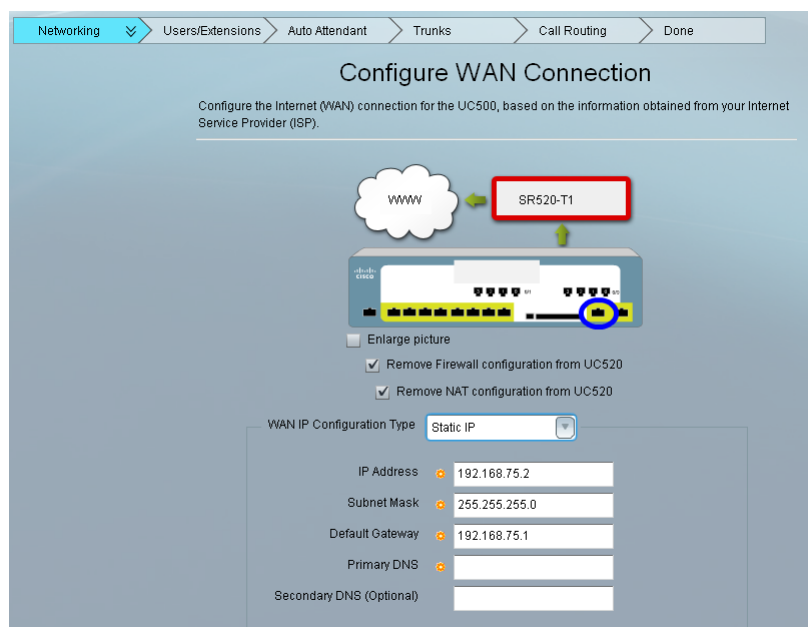
Password: cisco

- Step 3. When prompted to authenticate for the SR 520-T1, enter the new administrator account username and password you configured in the SR 520-T1 Configuration wizard.

The Telephony Setup Wizard will launch automatically, because the UC 500 is at factory default configuration.

- Step 4. Follow the onscreen instructions to configure the UC 500. The Telephony Setup Wizard will detect that the UC 500 is behind the SR 520-T1.

- Step 5. On the Configure WAN Connection page of the wizard, configure the following settings:



- a. Click the checkboxes to remove the Firewall and NAT configuration from the UC 500. In this configuration, the SR 520-T1 provides the firewall and performs network address translation on incoming and outgoing Internet traffic.

- b. For the **WAN IP Configuration Type** setting, select **Static IP**.
- c. In the **IP Address** field, configure the WAN IP address for the UC 500. The default IP address for a UC 500 behind an SR 520-T1 is 192.168.75.2.

Accept the default value or click **Custom** to change the UC 500 WAN IP address if desired.

IMPORTANT If you modified the LAN0 address using the SR 520-T1 Configuration Utility, you must ensure that the WAN IP address configured in the Telephony Setup Wizard is on the same subnet.

For example, if you set the LAN0 address for the SR 520-T1 to 12.168.200.1 using the SR 520-T1 Configuration Utility, set the WAN IP address on the UC 500 to 192.168.200.2.
- d. Configure the **Subnet Mask**. In most cases, you can use the default value of 255.255.255.0.
- e. Configure the **Default Gateway** IP address. For a UC 500 behind an SR 520-T1, the default value is 192.168.75.1.

Accept the default value or click **Custom** to change the default gateway, if needed.

If the SR 500 will be part of a multisite deployment, the default gateway IP must be unique for each site that has an SR 500.
- f. Enter the primary DNS server IP for your network.
- g. *Optional.* Enter a secondary DNS server IP for your network.

Step 6. On the Configure the Local LAN page of the Telephony Setup Wizard, enter data and voice VLAN settings for the UC 500.

You can use the default settings or click **Custom** and edit the settings as needed. If you modify the defaults, Cisco Configuration Assistant automatically updates the static routes on the SR 520-T1.

Networking > Users/Extensions > Auto Attendant > Trunks > Call Routing > Done

Configure the Local LAN

Change the IP address, subnet mask, and default gateway assigned to voice and data VLANs on the local network or use the default configuration.

Data VLAN

☐ Default ☒ Custom

Interface Number: VLAN 1

IP Address: 192.168.10.1/24

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.10.1

DHCP Range

Start IP Address: 192.168.10.10

End IP Address: 192.168.10.240

Voice VLAN

☐ Default ☒ Custom

Interface Number: VLAN 100

IP Address: 10.1.1.1/24

Subnet Mask: 255.255.255.0

Default Gateway: 10.1.1.1

DHCP Range

Start IP Address: 10.1.1.10

End IP Address: 10.1.1.240

- Step 7. Continue configuring settings in the Telephony Setup Wizard, following the onscreen instructions.
- Step 8. When you are finished with the Telephony Setup Wizard, apply the configuration. When the configuration is complete, close the wizard.

**NOTE**

Cisco Configuration Assistant must be restarted if you want to continue using it after you change the data VLAN address using the Telephony Setup Wizard.

Verify Network Connectivity

Once you have completed configuration via the Telephony Setup Wizard, perform the following tests to verify network connectivity:

- From the SR 520-T1, verify that 192.168.10.1 (UC 500 data VLAN) and 10.1.10.1 (UC 500 voicemail) can be pinged.
- From the UC 500, verify that 192.168.75.1 (FA0/0 on the SR 520-T1) can be pinged.
- From both the UC 500 and SR 520-T1, verify that Internet hostnames (for example, www.cisco.com or www.google.com) can be pinged.

Suggested Next Steps

Once you have set up the basic network configuration, you can manage the following settings for the SR 520-T1 Secure Router using Cisco Configuration Assistant:

Configuration Task	Location on Feature Bar in CCA
Configure LAN1 IP address	Configure > Routing > IP Addresses , Interface Configuration tab
Configure NAT (assign static NAT mappings)	Configure > Security > NAT
Configure firewall settings (change security level, assign LAN 1 as internal or DMZ interface)	Configure > Security > Firewall and DMZ
Add, change, or delete administrator accounts	Configure > Device Properties > Users and Passwords
Configure or modify DNS settings	Configure > Routing > IP Addresses , Device Configuration tab
Configure or modify device parameters: Hostname, NTP, and SNMP settings	Configure > Device Properties > Hostname, System Time, and SNMP
Configure static routes if additional VLANs are added to UC 500, or to a device connected to LAN 1.	Configure > Routing > Static Routing
Run a Security Audit	Configure > Security > Security Audit
Configure licensed security features such as IPS (Intrusion Prevention), SSL VPN, and URL filtering	Configure > Security > IPS Configure > Security > SSL VPN Configure > Security > URL Filtering

Upgrading Software on the SR 520-T1 Using the SR 520-T1 Configuration Utility

You must use the SR 520-T1 Utility to upgrade the software on the SR 520-T1. You cannot use Cisco Configuration Assistant 2.1 to perform the upgrade.

Before You Begin

Before beginning the upgrade, make sure that the following requirements are met:

- A TFTP or HTTP server (Web server) must be running on your local PC in order to transfer files.
- Download the latest software package for the SR 520-T1 from Cisco.com:

www.cisco.com/go/sr500

A Cisco.com account login and password are required. The filename is SR 520-T1-1.0.tar.

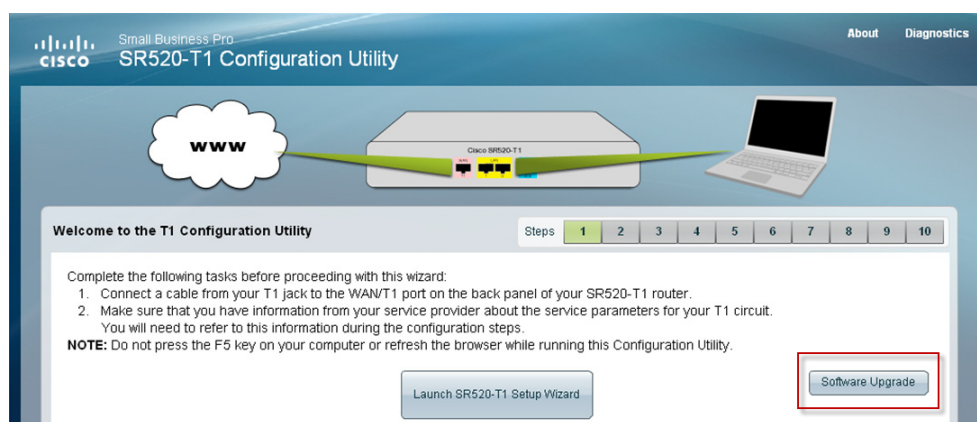
To upgrade the software on the SR 520-T1 router, follow these steps.

- Step 1. Connect your PC to the LAN0 port on the SR 520-T1 secure router.
- Step 2. Verify that your local TFTP or HTTP server is running.
- Step 3. Place the software package in the root directory of the TFTP or HTTP server.
- Step 4. To launch the SR 520-t1 Configuration Utility, open a Web browser on the PC connected to the SR 520-T1 and enter the following URL:

`http://<LAN0 IP Address>/setup`

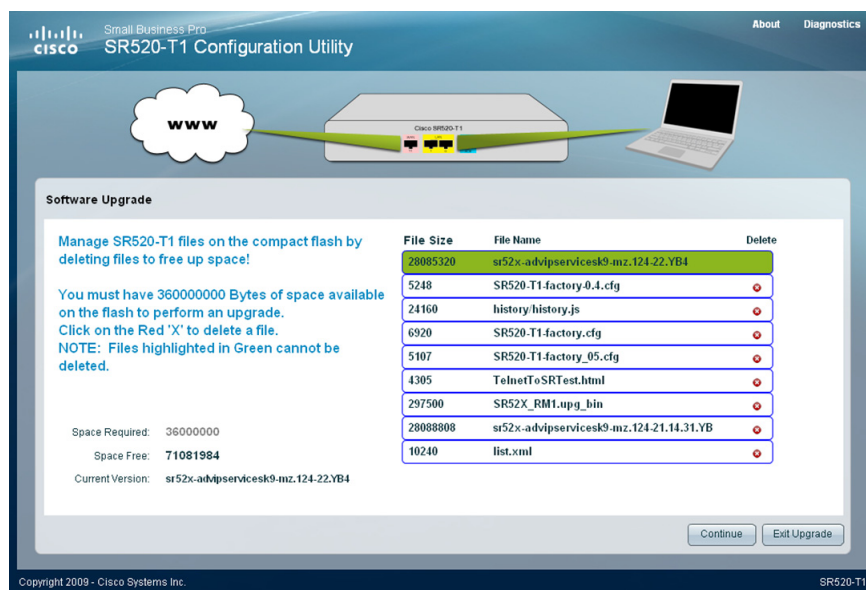
The default IP address for LAN0 on the SR 520-T1 is 192.168.75.1.

- Step 5. When prompted for authentication, enter the administrator username and password for the SR 520-T1.
- Step 6. On the welcome page of the Configuration Utility, click **Software Upgrade**.



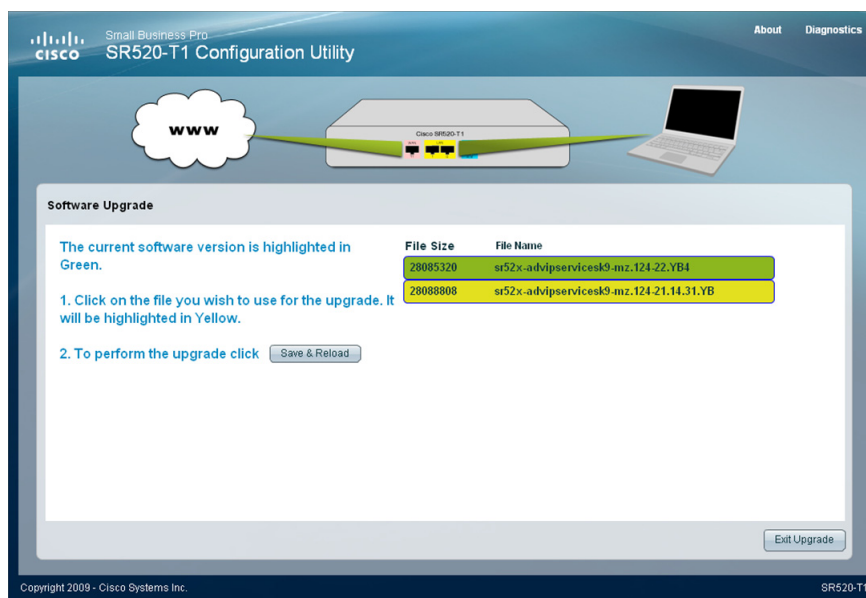
- Step 7. On the first page of the Software Upgrade section of the utility, click **Manage SR 520-T1 Files on Flash** and verify that you have enough space on the SR 520-T1 compact flash to perform the upgrade.

If not, follow the onscreen instructions to remove files that are no longer used or needed.



- Step 8. Click **Continue** to return to the main software upgrade page.
- Step 9. On the software upgrade page, complete these settings:
- Server IP address.** Enter the IP address of your TFTP or HTTP server.
 - Software package filename.tar.** The software package filename is SR 520-T1-1.0.tar. The .tar file must be placed in the root directory of the TFTP server.
- Step 10. Click **TFTP** or **HTTP (Web Server)**, depending on which type of server you are using to transfer files.
- Step 11. Click **Continue**.

- Step 12. On the next screen, the current software version is highlighted in Green. Click on the name of the file from the archive you just uploaded to use it for the upgrade. It will be highlighted in Yellow.



- Step 13. Click **Save & Reload** to begin the upgrade.

- Step 14. Once the upgrade has been applied, click **OK** to exit the configuration utility and wait 4 minutes for the restart to complete.

Related Documentation

- Cisco Configuration Assistant 2.1 online help and release notes
- *Cisco Small Business Pro SR 520-T1 Secure Router Quick Start Guide*

For More Information

Product and Support Resources	Location
Cisco SR 500 Series Secure Routers (includes link to download software package)	www.cisco.com/go/sr500
Technical Documentation for Cisco SR 500 Series Secure Routers	http://www.cisco.com/en/US/products/ps9305/tsd_products_support_series_home.html
Cisco Configuration Assistant (includes link to Download Software)	www.cisco.com/go/configassist
Technical Documentation for Cisco Configuration Assistant	www.cisco.com/en/US/products/ps7287/tsd_products_support_series_home.html
Cisco Small Business Support Community	www.cisco.com/go/smallbizsupport
Cisco Smart Business Communications System (SBCS)	www.cisco.com/go/sbcs
Cisco Partner tools	www.cisco.com/go/partners
Cisco.com Technical Support page	http://www.cisco.com/en/US/support/index.html

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