



Monitoring the Network (CPE and WBS)

CHAPTERS

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8. Monitor Stations
9. Monitor Interfaces
10. Monitor ARP Table
11. Monitor Routes
12. Monitor DHCP Clients
13. Monitor Dynamic WAN



This guide applies to:

CPE610(UN) 1.0, CPE520(UN) 3.0, CPE510(UN) 3.0, CPE210(UN) 3.0, CPE210(EU) 3.0, CPE220(UN) 3.0, CPE510(UN) 1.0, CPE510(UN) 2.0, CPE210(UN) 1.0, CPE210(UN) 2.0, CPE220(UN) 1.0, CPE220(UN) 2.0, CPE520(UN) 1.0, CPE520(UN) 2.0, WBS210(UN) 1.0, WBS210(UN) 2.0, WBS510(UN) 1.0, WBS510(UN) 2.0.

This guide introduces how to monitor the wireless network using the CPE/WBS products:

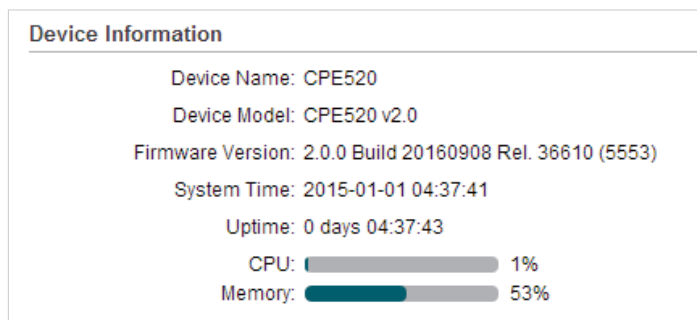
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The following parts detailedly introduces these features.

1 View the Device Information

Go to the **STATUS** page. In the **Device Information** section, you can view the basic information of the device. To configure the device information, refer to [Configuring the System](#).

Figure 1-1 Device Information



Device Name	Displays the name of the device. By default, it is the product model.
Device Model	Displays the product model and the hardware version of the device.
Firmware Version	Displays the current firmware version of the device.
System Time	Displays the current system time.
Uptime	Displays the running time of the device.
CPU	Displays the CPU occupancy.
Memory	Displays the memory occupancy.

2 View the Wireless Settings

Go to the **STATUS** page. In the **Wireless Settings** section, you can view the parameters of the wireless network created by the device. To configure the parameters, refer to *Configuring the Wireless Parameters*.

Figure 2-1 Wireless Settings

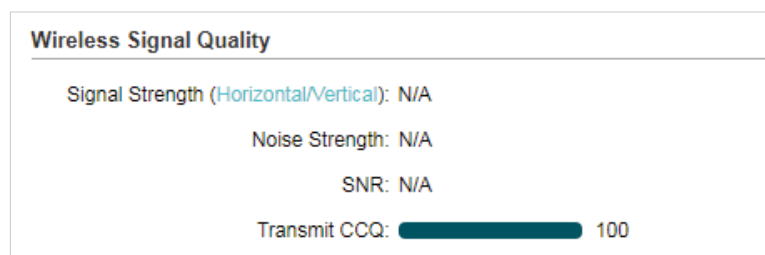
Wireless Settings	
MAXtream:	OFF
Channel/Frequency:	44 / 5220MHz
Channel Width:	20/40MHz
IEEE802.11 Mode:	A/N Mixed
Max TX Rate:	300.0Mbps
Transmit Power:	3dBm
Distance:	0.0km

MAXtream	Displays the status of the MAXtream function. This function is only available in Access Point mode and AP Router mode. MAXtream is a TP-Link proprietary technology. It is based on TDMA (Time Division Multiple Access) so that data streams are transmitted in their own time slots. MAXtream aims to maximize throughput and minimize latency. "Hidden nodes" problem can also be eliminated with MAXtream enabled. MAXtream Technology is only compatible with Pharos series products. Working with products from other manufacturer will cause network fault.
Channel/ Frequency	Displays the channel and frequency which are currently used by the device.
Channel Width	Displays the channel width which is currently used by the device.
IEEE802.11 Mode	Displays the IEEE802.11 protocol currently used by the device.
Max TX Rate	Displays the maximum data rate of the device during the sending of the wireless packets.
Transmit Power	Displays the transmit power which is currently used by the device.
Distance	Displays the wireless coverage distance. In the coverage of the device, the clients can be placed to get good wireless performance.

3 View Wireless Signal Quality

Go to the **STATUS** page. In the **Wireless Signal Quality** section, you can view the current signal quality of the upstream wireless network. It is only applicable for the Client, Repeater (Range Extender), Bridge and AP Client Router (WISP Client) modes.

Figure 3-1 Wireless Signal Quality



Signal Strength (Horizontal/Vertical)	Displays the received wireless signal strength of the root AP.
Noise Strength	Displays the received environmental noise from wireless interference on the operating frequency.
SNR	Displays the Signal to Noise Ratio (SNR) of the device. SNR refers to the power ratio between the received wireless signal strength and the environmental noise strength. The larger SNR value is, the better network performance the device can provide.
Transmit CCQ	Displays the wireless Client Connection Quality (CCQ). CCQ refers to the ratio of effective transmission bandwidth and the actual total bandwidth. It reflects the quality of the actual link. A larger value means a better utilization of the bandwidth.

4 View Radio Status

Go to the **STATUS** page. In the **Radio Status** section, you can view the radio status of the device.

Figure 4-1 Radio Status

Radio Status	
AP:	Enabled
MAC Address:	98-DE-D0-88-6C-84
SSID:	TP-LINK_Outdoor_886C84
Security Mode:	None
Connected Stations:	0
Client:	Disabled
MAC Address:	N/A
Security Mode:	N/A
WDS:	N/A
Root AP BSSID:	N/A
Root AP SSID:	N/A
TX Rate:	N/A
RX Rate:	N/A
Connection Time:	N/A

AP	Displays the status of the wireless AP function. With this enabled, the device can provide a wireless network for the clients. By default, it is enabled in Access Point, Repeater, Bridge, AP Router and AP Client Router modes and disabled in Client mode.
MAC Address	Displays the MAC address of the wireless interface connected to the clients.
SSID	Displays the wireless network name (SSID) created by the device.
Security Mode	Displays the security mode you've selected for your wireless network. There are three security modes: WPA-PSK, WPA and WEP. None means that no security mode is selected and all the hosts are allowed to access the wireless network directly.
Connected Stations	Displays the number of the connected stations.
Client	Displays the status of the wireless client function. With this function enabled, the device can connect to the root AP through wireless connection. By default, it is enabled in Client, Repeater, Bridge and AP Client Router modes and disabled in Access Point and AP Router modes.

MAC Address	Displays the MAC address of the wireless interface connected to the root AP.
Security Mode	Displays the security mode you've selected for your wireless network. There are three security modes: WPA-PSK, WPA and WEP. The security mode which is set on the device should be the same as that on the root AP.
WDS	<p>Displays the status of the WDS (Wireless Distribution System) function. WDS is a communication system among multiple wireless networks . It is established between APs through wireless connection. WDS is used during the connection process between the device and the root AP.</p> <p>Enable: Forward data frames using four address fields.</p> <p>Disable: Forward data frames using three address fields.</p> <p>Auto: The device automatically negotiates the wireless data frame structure (three or four address fields) with the root AP. The selection of Auto is recommended.</p>
Root AP BSSID	Displays the BSSID (Basic Service Set ID) of the root AP. BSSID is used to identify a BSS. Each BSS has its own BSSID. The BSSID is decided by the manufacturers, and it is usually related to the device's MAC address.
Root AP SSID	Displays the wireless network name of the root AP.
TX Rate	Displays the data rate of the device during the sending of the wireless packets.
RX Rate	Displays the data rate of the device during the receiving of the wireless packets.
Connection Time	Displays the amount of time the device has been connected to the root AP.

5 View the LAN Settings

Go to the **STATUS** page. In the **LAN** section, you can view the LAN information of the device. To configure the LAN settings, refer to *Configuring the Network*.

Figure 5-1 LAN Parameters

LAN	
MAC Address:	30-B5-C2-BD-04-6E
IP Address:	192.168.0.210
Subnet Mask:	255.255.255.0
Port0:	Unplugged
Port1:	100Mbps - FD

MAC Address	Displays the LAN port MAC address of the device.
IP Address	Displays the LAN port IP address of the device.
Subnet Mask	Displays the subnet mask of the LAN.
Port	Displays the current status of the LAN Ethernet port connections and the Maximum transmission rate of the plugged port.

6 View the WAN Settings

Go to the **STATUS** page. In the **WAN** section, you can view the WAN information of the device. To configure the LAN settings, refer to *Configuring the Network*.

Figure 6-1 WAN Parameters

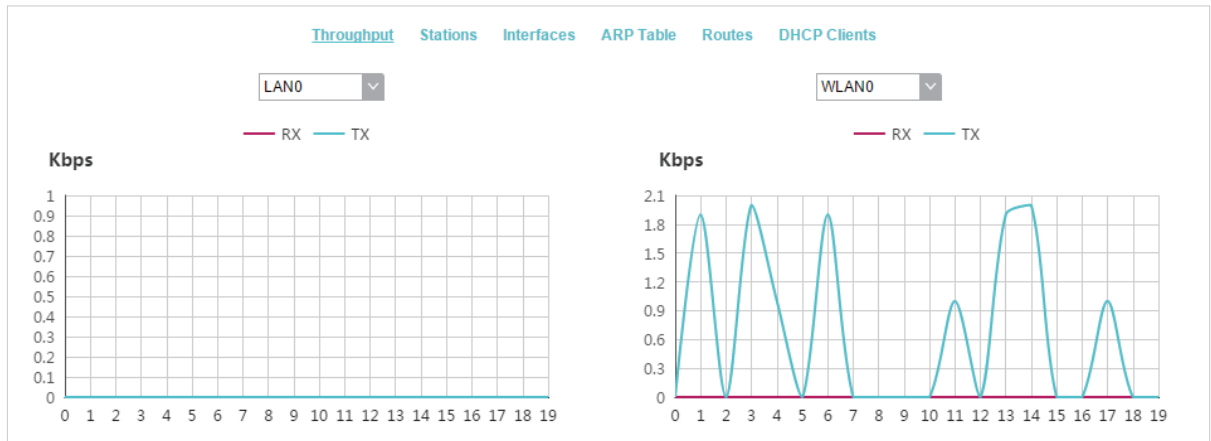
WAN	
Connection Type:	Dynamic
MAC Address:	30-B5-C2-BD-04-6F
IP Address:	0.0.0.0
Subnet Mask:	0.0.0.0
Default Gateway:	0.0.0.0
DNS Server:	0.0.0.0

Connection Type	Displays the connection type of the device.
MAC Address	Displays the MAC address of the wireless interface connected to the root AP.
IP Address	Displays the IP address of the wireless interface connected to the root AP.
Subnet Mask	Displays the subnet mask of the wireless interface connected to the root AP.
Default Gateway	Displays the default gateway.
DNS Server	Displays the DNS server.

7 Monitor Throughput

Go to the **STATUS** page. In the **Monitor** section, select *Throughput* and you can monitor the current data traffic of specified interfaces including LAN, WAN and BRIDGE.

Figure 7-1 Throughput



8 Monitor Stations

Go to the **STATUS** page. In the **Monitor** section, select **Stations** and you can monitor the information of all the stations that are connected to the device.

Figure 8-1 Stations

Throughput Stations Interfaces ARP Table Routes DHCP Clients Dynamic WAN									
MAC Address	Device Name	Associated SSID	Signal / Noise(dBm)	CCQ (%)	Negotiated Rate(Mbps)	Data TX / RX (kbps)	Distance (km)	IP Address	Connection Time
00-0A-EB-21-01-10	Jim	TP-LINK_Out...	-50/-105	93	300.0	169/3962	0.00	192.168.0.102	0 days 00:04:30

Auto Refresh

MAC Address	Displays the MAC address of the station.
Device Name	Displays the device name of the station.
Associated SSID	Displays the SSID that the station is connected to.
Signal/Noise (dBm)	Displays the signal strength and the noise strength of the wireless network. The values of Chain0 and Chain1 can be displayed separately and can be displayed unitedly.
CCQ (%)	Displays the wireless Client Connection Quality (CCQ). CCQ refers to the ratio of effective transmission bandwidth and the actual total bandwidth. It reflects the quality of the actual link. A larger value means a better utilization of the bandwidth.
Negotiate Rate (Mbps)	Displays the station's data rates of the last transmitted packets.
Data TX/RX (kbps)	Displays the station's average data rates of the transmitted and received packets over the connection time.
Distance (km)	Displays the distance between the device and the station.
IP Address	Displays the IP address of the station.
Connection Time	Displays the connection duration.
Auto Refresh	Enable or disable Auto Refresh. With this feature enabled, the table will refresh automatically.

9 Monitor Interfaces

Go to the **STATUS** page. In the **Monitor** section, select *Interfaces* and you can monitor the relevant information of the interfaces.

Figure 9-1 Interfaces

Monitor							
Throughput Stations Interfaces ARP Table Routes DHCP Clients							
Interface	MAC	IP Address	MTU	RX packets	RX Bytes	TX packets	TX Bytes
LAN0	98-DE-D0-88-6C-84	0.0.0.0	1500	0	0	0	0
LAN1	98-DE-D0-88-6C-84	0.0.0.0	1500	20945	1M	21169	20M
BRIDGE	98-DE-D0-88-6C-84	192.168.0.254	1500	11819	1M	21170	20M
WLAN0	98-DE-D0-88-6C-84	0.0.0.0	1500	0	0	5321	1M

Auto Refresh

Interface	Displays the interface of the device.
MAC	Displays the MAC address of the interface.
IP Address	Displays the IP address of the interface.
MTU	Displays the Maximum Transmission Unit (MTU) of the interface. It is the maximum packet size (in bytes) that the interface can transmit.
RX packets	Displays the total amount of packets received by the interface after the device is powered on.
RX Bytes	Displays the total amount of data (in bytes) received by the interface after the device is powered on.
TX packets	Displays the total amount of packets sent by the interface after the device is powered on.
TX Bytes	Displays the total amount of data (in bytes) sent by the interface after the device is powered on.
Auto Refresh	Enable or disable Auto Refresh. With this feature enabled, the table will refresh automatically.

10 Monitor ARP Table

Go to the **STATUS** page. In the **Monitor** section, select *ARP Table* and you can monitor the ARP (Address Resolution Protocol) information recorded by the device.

ARP is used to associate each IP address to the unique hardware MAC address of each device on the network.

Figure 10-1 ARP Table

The screenshot shows a web interface titled "Monitor". At the top, there are several tabs: "Throughput", "Stations", "Interfaces", "ARP Table" (which is selected), "Routes", and "DHCP Clients". Below the tabs is a table with three columns: "IP Address", "MAC", and "Interface". The table contains four rows of data. At the bottom right of the table area, there is a checkbox labeled "Auto Refresh" which is checked.

IP Address	MAC	Interface
192.168.0.200	00-19-66-35-E1-B0	BRIDGE
192.168.0.16	00-0A-EB-13-23-7B	BRIDGE
192.168.0.61	F4-F2-6D-C3-28-62	BRIDGE
169.254.60.119	DC-9B-9C-D3-17-61	BRIDGE

IP Address Displays the IP address of the corresponding ARP entry.

MAC Displays the MAC address of the corresponding ARP entry.

Interface Displays the interface connected to the device.

Auto Refresh Enable or disable Auto Refresh. With this feature enabled, the table will refresh automatically.

11 Monitor Routes

Go to the **STATUS** page. In the **Monitor** section, select *Routes* and you can monitor the routing entries recorded by the device.

Routing table is used for the device to decide the interface to forward the packets.

Figure 11-1 Routes

Monitor					
Throughput	Stations	Interfaces	ARP Table	Routes	DHCP Clients
Destination	Gateway	SubnetMask	Interface		
192.168.0.0	0.0.0.0	255.255.255.0	BRIDGE		

Auto Refresh

Destination	Displays the IP address of the destination device or destination network.
Gateway	Displays the IP address of the appropriate gateway.
SubnetMask	Displays the Subnet Mask of the destination network.
Interface	Displays the interface that the destination device is on.
Auto Refresh	Enable or disable Auto Refresh. With this feature enabled, the table will refresh automatically.

12 Monitor DHCP Clients

Go to the **STATUS** page. In the **Monitor** section, select *DHCP Clients* and you can monitor the information of all the DHCP clients.

Table 12-1 DHCP Clients

Throughput Stations Interfaces ARP Table Routes DHCP Clients Dynamic WAN			
Client Name	MAC Address	Assigned IP	Lease Time
Jim	00-0A-EB-21-01-10	192.168.0.102	0 days 01:57:57

Auto Refresh

Client Name Displays the device name of the client.

MAC Address Displays the MAC address of the client.

Assigned IP Displays the IP address that the device assigned to the client.

Lease Time Displays the time that the client leased. When the time expires, the clients will request to renew the lease automatically.

Auto Refresh Enable or disable Auto Refresh. With this feature enabled, the table will refresh automatically.

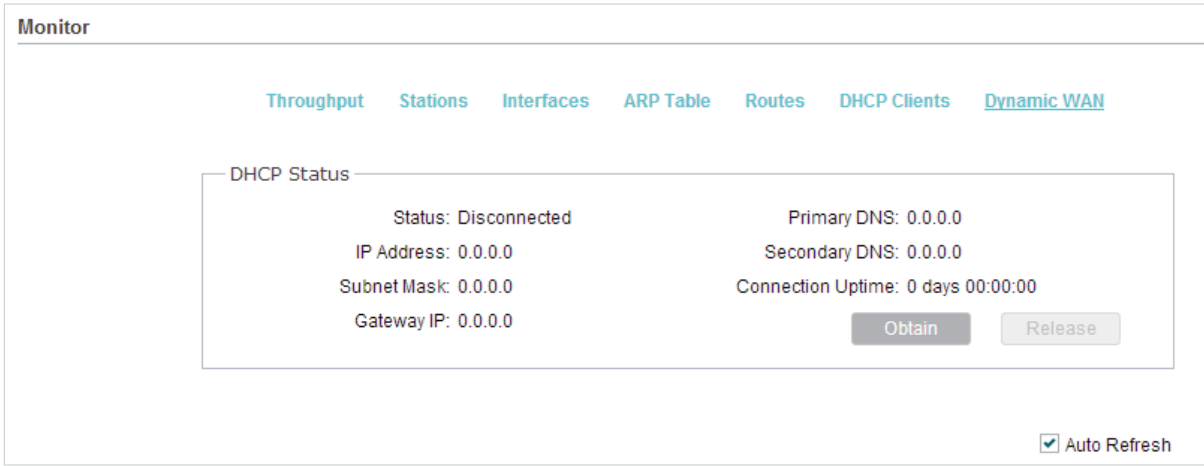
13 Monitor Dynamic WAN

Tips

Dynamic WAN submenu is only available in AP Router mode and AP client Router (WISP client) mode when the WAN connection type is PPPoE, PPTP, L2TP or Dynamic.

Go to the **STATUS** page. In the **Monitor** section, select *Dynamic WAN* and you can monitor the WAN connection status of the device.

Figure 13-1 Dynamic WAN



The screenshot shows the 'Monitor' section with a navigation bar containing 'Throughput', 'Stations', 'Interfaces', 'ARP Table', 'Routes', 'DHCP Clients', and 'Dynamic WAN'. The 'Dynamic WAN' tab is selected. Below it is a 'DHCP Status' box with the following details:

- Status: Disconnected
- IP Address: 0.0.0.0
- Subnet Mask: 0.0.0.0
- Gateway IP: 0.0.0.0
- Primary DNS: 0.0.0.0
- Secondary DNS: 0.0.0.0
- Connection Uptime: 0 days 00:00:00

There are 'Obtain' and 'Release' buttons. At the bottom right, there is a checked checkbox for 'Auto Refresh'.

Status	Displays the status of the WAN connection.
IP Address	Displays the IP address of the WAN.
Subnet Mask	Displays the subnet mask of the WAN.
Gateway IP	Displays the gateway address of the device.
Primary DNS	Displays the primary DNS of the device.
Secondary DNS	Displays the secondary DNS of the device.
Connection Uptime	Displays the time that the latest WAN connection lasts.
Obtain	Click <i>Obtain</i> to obtain the WAN IP address from the upstream device.
Release	Click <i>Release</i> to release the WAN IP address.
Auto Refresh	Enable or disable Auto Refresh. With this feature enabled, the table will refresh automatically.