Configuration Guide

For Access Control In Multiple SSIDs

EAP Controller
1910012306 REV1.0.0
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Overview

In enterprise wireless networks, users may have a range of different requirements. For security reasons, it’s important to limit access to the EAP Controller to only the users who have the given authority. Access Control can provide this. The figure below shows the network topology of such a scenario. The administrator can divide users into two groups; users in Group 1 can access both the internet and the EAP Controller, while users in Group 2 can only access the internet.

Figure 1-1  Network topology for access control in Multiple SSIDs

To achieve this, the administrator can configure two SSIDs in two different subnets and VLANs on the network. Different access control strategies can then be applied to the two SSIDs. The administrator can assign different SSIDs to different groups of users. The configuration follows the methodology below:

1) Configure WAN IP, LAN IP, and multi-nets NAT on the router, and static routing on both the router and the switch to ensure the network connectivity.

2) Configure two SSIDs in two different VLANs on the EAP Controller. Then assign each SSID to the corresponding user group.

3) Configure VLAN, interface IP and DHCP server on the switch. The switch will assign different IP addresses to clients connected to different SSIDs for all subnets.

4) Configure the hotspot portal and vouchers on the EAP Controller, so that the authenticated users can access the internet.

5) Configure access control strategy on the switch, so that only the users who have the given authority can access the EAP Controller.
2 Configuring Access Control in Multiple SSIDs

This chapter explains how to configure access control in multiple SSIDs. The configuration consists of two parts:
1) Configuring the basics.
2) Configuring ACL.

2.1 Configuring the Basics

To complete the basic network configuration, follow these steps:
1) Configure the router.
2) Configure the switch.
3) Configure the EAP Controller.

2.1.1 Configuring the Router

Exampled with TL-ER6120, the configuration steps are as follows:
1) Choose the menu **Network > WAN >WAN1** to load the following page. Specify the connection type according to your actual network environment. Here, we select **Dynamic IP** as the connection type. Click **Save** and **Connect**.

Figure 2-1 Configure WAN Port
2) Choose the menu **Network > LAN > LAN** to load the following page. Specify the IP address as **192.168.1.1** and the subnet mask as **255.255.255.0**. Click **Save**.

![Configure LAN Port](image1)

3) Choose the menu **Transmission > NAT > Multi-Nets NAT** and click **Add** to load the following page. Specify the name. Here, we specify the name as **multinet1** for example. Select **WAN1** as the interface. Specify the source IP range as **192.168.0.0/24**. Check **Enable** for status. Click **OK**.

![Configure Multi-Nets NAT 1](image2)

Similarly, add another entry as the following figure shows.

![Configure Multi-Nets NAT 2](image3)
4) Choose the menu **Transmission > Routing > Static Route** and click **Add** to load the following page. Specify the name. Here, we specify the name as **route1** for example. Specify the destination IP as **192.168.0.0** and subnet mask as **255.255.255.0**. Specify the next hop as **192.168.1.11**. Select **LAN** as the interface. Check **Enable** for status. Click **OK**.

Figure 2-5  Configure Static Route 1

Similarly, add another entry as the following figure shows.

Figure 2-6  Configure Static Route 2

### 2.1.2 Configuring the Switch

Exampled with T2600G-28TS, the configuration steps are as follows:

1) Choose the menu **VLAN > 802.1Q VLAN > Port Config** to load the following page. Specify the link type as **ACCESS** and PVID as **1** for port 1/0/2, and click **Apply**. Specify
the link type as **GENERAL** and PVID as 1 for port 1/0/4, and click **Apply**. Specify the link type as **GENERAL** and PVID as 3 for port 1/0/6, and click **Apply**.

Figure 2-7 Configure Link Type and PVID for the Ports
2) Choose the menu **VLAN > 802.1Q VLAN > VLAN Config** and click **Create** to load the following page. Specify the VLAN ID as 2. Specify the name as vlan2. Add 1/0/4 to VLAN 2 as tagged port, and click **Apply**.

Figure 2-8  Configure VLAN 2
Similarly, configure another two VLANs as the following figures show.

**Figure 2-9  Configure VLAN 1**

**Figure 2-10  Configure VLAN 3**
3) Choose the menu **Routing > Interface > Interface Config** to load the following page. Specify the interface ID as **VLAN** and set the VLAN ID as **2**. Specify the IP address mode as **Static**. Specify the IP address as **172.16.10.1**, and the subnet mask as **255.255.255.0**. Enable the admin status. Click **Create**.

![Figure 2-11 Create Interface VLAN 2](image)

Similarly, configure another two interfaces as the following figures show.

![Figure 2-12 Configure Interface VLAN 1](image)

![Figure 2-13 Creating Interface VLAN 3](image)

4) Choose the menu **Routing > Static Routing > IPv4 Static Routing Config** to load the following page. Specify the destination IP and subnet mask as **0.0.0.0**, which means all the traffic. Specify the next hop as **192.168.1.1**. Click **Create**.

![Figure 2-14 Configure Static Route for All the Traffic](image)
5) Choose the menu **Routing > DHCP Server > DHCP Server** to load the following page. In the **Global Config** section, enable the DHCP server and click **Apply**.

![Enable DHCP Server](image)

6) Choose the menu **Routing > DHCP Server > Pool Setting** to load the following page. Specify the pool name. Here, we specify the pool name as **pool1** for example. Specify
the network address as 192.168.0.0 and the subnet mask as 255.255.255.0. Specify the default gateway as 192.168.0.1. Specify the DNS server as 192.168.1.1. Click Apply.

Figure 2-16  Configure DHCP Server Pool 1
Similarly, add another DHCP server pool as the following figure shows.

Figure 2-17  Configure DHCP Server Pool 2

2.1.3 Configuring the EAP Controller

The EAP can be managed by the EAP Controller, which can be downloaded on the website: http://www.tp-link.com/en/download/EAP-Controller.html.

Follow these steps to configure the EAP Controller:

1) Run the EAP Controller and the management web page will pop up automatically. Choose the menu **Access Points > Pending** to load the following page. Click **Adopt** to adopt the EAP.

   Figure 2-18  Adopt the EAP

2) Choose the menu **Wireless Settings > Basic Wireless Setting**, choose 2.4GHz or 5GHz, and click **Add** to load the following page. Specify the SSID name as **SSID1**. Specify the wireless VLAN ID as **1**. Enable SSID broadcast. Specify the security mode
as **WPA-PSK**. Specify the version as **WPA2-PSK**, and encryption as **AES**. Configure the wireless password for the SSID. Enable the portal. Click **Apply**.

Figure 2-19  Add SSID1

![Add 2.4GHz SSID](image)

- **SSID Name:** SSID1
- **Wireless VLAN ID:** 1
- **SSID Broadcast:** Enabled
- **Security Mode:** WPA-PSK
- **Version:** WPA2-PSK
- **Encryption:** AES
- **Wireless Password:** tplinktplink
- **Group Key Update Period:** 0 seconds (0 means no upgrade)
- **Portal:** Enabled
- **SSID Isolation:** Enabled
- **Access Control Rule:** None

![Apply button](image)
Similarly, add another SSID as the following figure shows.

Figure 2-20  Add SSID2

3) Choose the menu **Wireless Control > Portal** to load the following page. Specify the authentication type as **Hotspot**. Click **Apply**.

Figure 2-21  Configure the Portal
4) Choose the menu **Wireless Control > Portal** and click **Hotspot Manager** to load the following page.

Figure 2-22  Launch the Hotspot Manager

![Hotspot Manager](image1)

5) Choose the menu **Voucher** and click **Create Vouchers** to load the following page. Specify the amount of the vouchers according to your needs. Click **Apply**.

Figure 2-23  Create Vouchers

![Create Vouchers](image2)

### 2.2 Configuring ACL

After the basic network configuration, all the users in the two SSIDs can access the EAP controller and manage the EAP, which causes network security problems. To ensure only the users in Group 1 can access and manage the EAP Controller, configure the ACL (Access
Control List) function on the switch. Follow these steps to configure the ACL function on the switch.

1) Choose the menu **ACL > ACL Config > ACL Create** to load the following page. Specify the ACL ID in the range of extended-IP ACL. Here, we specify the ACL ID as 1500 for example. Click **Apply**.

![Create ACL](image1)

2) Choose the menu **ACL > ACL Config > Extend-IP ACL** to load the following page. Select ACL 1500 as the ACL ID. Specify the rule ID as 1. Select **Permit** as the operation. Enable **S-IP** and specify the S-IP as 172.16.10.0 and the mask as 255.255.255.0. Enable **D-IP** and specify the D-IP as 192.168.0.2 and the mask as 255.255.255.0. Note that the D-IP should be the IP address of the EAP Controller. Select **6 TCP** as the IP protocol. Enable **D-Port** and specify the D-Port as 8088, which serves for the portal on the EAP Controller. Click **Apply**.

![Create Extend-IP Rule 1](image2)
3) Choose the menu **ACL > ACL Config > Extend-IP ACL** to load the following page. Select **ACL 1500** as the ACL ID. Specify the rule ID as **2**. Select **Deny** as the operation. Enable **S-IP** and specify the S-IP as **172.16.10.0** and the mask as **255.255.255.0**. Enable **D-IP** and specify the D-IP as **192.168.0.2** and the mask as **255.255.255.0**. Note that the D-IP should be the IP address of the EAP Controller. Select **All** as the IP protocol. Click **Apply**.

![Create Extend-IP Rule 2](image)

4) Choose the menu **ACL > ACL Binding > Port Binding** to load the following page. Select **1500** as the ACL ID and bind the ACL with port 1/0/4, which is connected to the EAP Controller. Click **Apply**.

![Bind ACL to the Port](image)
3 Testing the Configuration

After all parts of the configuration are complete, you can test whether access control in multiple SSIDs works normally. Follow these steps to test access control in multiple SSIDs:

1) Test SSID1.
2) Test SSID2.

3.1 Testing SSID1

Follow these steps to test SSID1:

1) Connect your smart phone to SSID1. A portal will pop up. If it doesn’t, please go to http://www.tp-link.com to open the portal in a browser. It will look like this:

Figure 3-1 Launch the Portal Page
2) Enter a valid voucher code and click **LOGIN**. When the following page is displayed, you can access the internet after connecting to SSID1.

![Log in](image)

3) Enter https://192.168.0.2:8043 in the address bar of your browser to load the following page. Note that you should enter “https” instead of “http”. “192.168.0.2” is the IP address of EAP Controller. “8043” is the EAP Controller service port. Enter your account
name and password to load the EAP Controller web page. You can then access and manage the EAP Controller while connected to SSID1.

Figure 3-3   Access the EAP Controller
### 3.2 Testing SSID2

Follow these steps to test SSID2:

1) Connect your smart phone to SSID2. A portal will pop up. If it doesn’t, please go to http://www.tp-link.com to open the portal in a browser. It will look like this:

![Launch the Portal Page](image-url)
2) Enter a valid voucher code and click **LOGIN**. When the following page is displayed, you can access the internet after connecting to SSID2.

![Log in](image)

3) Enter https://192.168.0.2:8043 in the address bar of your browser. You can’t access the EAP Controller management webpage while connected to SSID2.

When the steps above are complete, access control in multiple SSIDs should work normally.
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