

# Manage 802.1X EAP Statistics on a Switch

## Objective

Extensible Authentication Protocol (EAP) is an authentication framework that is frequently used in wireless networks and point-to-point connections. It supports multiple authentication mechanisms such as token cards, smart cards, certificates, one-time passwords, and public key encryption authentication.

Extensible Authentication Protocol over LAN (EAPOL) is a network port authentication protocol used in IEEE 802.1x or port-based network access control which is developed to give a generic network sign-on to access network resources. EAPOL which is similar to EAP, is a simple encapsulation that can run over any Local Area Network (LAN).

This article provides instructions on how to manage the 802.1x EAP statistics on your switch.

## Applicable Devices

- Sx350 Series
- SG350X Series
- Sx500 Series
- Sx550X Series

## Software Version

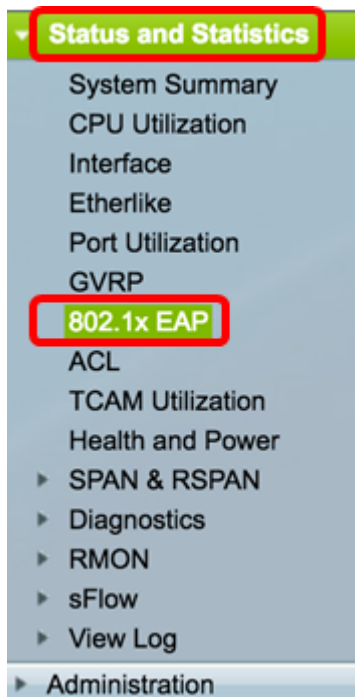
- 1.4.7.06 — Sx500
- 2.3.0.130 — Sx350, SG350X, Sx550X

## Manage 802.1x EAP Statistics

### Display the Statistics of a Specific Interface

Step 1. Log in to the web-based utility of the switch then choose **Status and Statistics >802.1x EAP**.

**Note:** The available menu options may vary depending on the device model. In this example, SG350X-48MP is used.



**Note:** The 802.1x EAP page displays detailed information regarding the EAP frames that were sent or received. To know how to configure the 802.1x port authentication settings on your switch, click [here](#).

Step 2. In the Interface area, choose the interface for which the Ethernet statistics are to be displayed.

**Note:** In this example, Port GE5 of Unit 1 is chosen.



Step 3. Click a refresh rate from Refresh Rate area. This is the time period that passes before the interface statistics are refreshed.



- No refresh — The information about the interface that will not refresh with new information.
- 15 sec — The information about the interface refreshes every 15 seconds.
- 30 sec — The information about the interface refreshes every 30 seconds.
- 60 sec — The information about the interfaces refreshes every 60 seconds

**Note:** In this example, 60 sec is chosen.

The values are displayed for the selected interface.

- EAPOL EAP Frames Received — Valid EAPOL frames received on the port.
- EAPOL Start Frames Received — Valid EAPOL start frames received on the port.

- EAPOL Logoff Frames Received — EAPOL logoff frames received on the port.
- EAPOL Announcement Frames Received — EAPOL announcement frames received on the port.
- EAPOL Announcement Request Frames Received — EAPOL announcement Request frames received on the port.
- EAPOL Invalid Frames Received — EAPOL invalid frames received on the port.
- EAPOL EAP Length Error Frames Received — EAPOL frames with an invalid Packet Body Length received on this port.
- MKPDU Frames with unrecognized CKN Received — EAP frames with unrecognized Connectivity Association Key Name (CKN) received on this port.
- MKPDU Invalid Frames Received — MACsec Key Agreement Protocol Data Unit (MKPDU) invalid frames received on the port.
- Last EAPOL Frame Version — Protocol version number attached to the most recently received EAPOL frame.
- Last EAPOL Frame Source — Source Media Access Control (MAC) address attached to the most recently received EAPOL frame.
- EAPOL EAP Supplicant Frames Transmitted — EAPOL EAP supplicant frames transmitted on the port.
- EAPOL Start Frames Transmitted — EAPOL start frames transmitted on the port.
- EAPOL Logoff Frames Transmitted — EAPOL logoff frames transmitted on the port.
- EAPOL Announcement Frames Transmitted — EAPOL announcement frames transmitted on the port.
- EAPOL Announcement Request Frames Transmitted — EAPOL announcement request frames transmitted on the port.
- EAPOL EAP Authenticator Frames Transmitted — EAP authenticator frames transmitted on the port.
- EAPOL MKA Frames with NO CKN Transmitted — MACsec Key Agreement (MKA) frames with no CKN transmitted on the port.

## 802.1x EAP

Interface:	Unit	1	Port	GE5
Refresh Rate:	<input type="radio"/>	No Refresh	<input type="radio"/>	15 sec
	<input type="radio"/>	30 sec	<input checked="" type="radio"/>	60 sec
EAPOL EAP Frames Received:		41		
EAPOL Start Frames Received:		28		
EAPOL Logoff Frames Received:		0		
EAPOL Announcement Frames Received:		0		
EAPOL Announcement Request Frames Received:		0		
EAPOL Invalid Frames Received:		0		
EAPOL EAP Length Error Frames Received:		0		
MKPDU Frames with unrecognized CKN Received:		0		
MKPDU Invalid Frames Received:		0		
Last EAPOL Frame Version:		1		
Last EAPOL Frame Source:		00:41:d2:f9:d8:0a		
EAPOL EAP Supplicant Frames Transmitted:		0		
EAPOL Start Frames Transmitted:		0		
EAPOL Logoff Frames Transmitted:		0		
EAPOL Announcement Frames Transmitted:		0		
EAPOL Announcement Request Frames Transmitted:		0		
EAPOL EAP Authenticator Frames Transmitted:		93		
EAPOL MKA Frames with No CKN Transmitted:		0		

[Clear Interface Counters](#) [Refresh](#) [View All Interfaces Statistics](#)

Step 4. (Optional) Click **Clear Interface Counters** to clear the counters of the chosen interface.

Step 5. (Optional) Click the **Refresh** button to refresh the statistics page.

You should now have successfully managed the 802.1x EAP statistics of an interface on your switch.

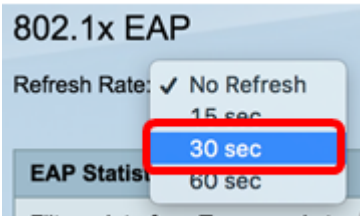
## View Statistics of All Interfaces

Step 1. In the 802.1x EAP page, click **View All Interfaces Statistics** to see all ports in table view.

The screenshot shows the '802.1x EAP' configuration page. At the top, there are controls for 'Interface:' (set to '1') and 'Port:' (set to 'GE5'). Below these are 'Refresh Rate' options: 'No Refresh', '15 sec', '30 sec', and '60 sec' (which is selected). The main area contains a list of statistics for the selected interface. At the bottom, there are three buttons: 'Clear Interface Counters', 'Refresh', and 'View All Interfaces Statistics' (which is highlighted with a red box).

Statistic	Value
EAPOL EAP Frames Received:	41
EAPOL Start Frames Received:	28
EAPOL Logoff Frames Received:	0
EAPOL Announcement Frames Received:	0
EAPOL Announcement Request Frames Received:	0
EAPOL Invalid Frames Received:	0
EAPOL EAP Length Error Frames Received:	0
MKPDU Frames with unrecognized CKN Received:	0
MKPDU Invalid Frames Received:	0
Last EAPOL Frame Version:	1
Last EAPOL Frame Source:	00:41:d2:f9:d8:0a
EAPOL EAP Supplicant Frames Transmitted:	0
EAPOL Start Frames Transmitted:	0
EAPOL Logoff Frames Transmitted:	0
EAPOL Announcement Frames Transmitted:	0
EAPOL Announcement Request Frames Transmitted:	0
EAPOL EAP Authenticator Frames Transmitted:	93
EAPOL MKA Frames with No CKN Transmitted:	0

Step 2. (Optional) Choose a refresh rate from Refresh Rate drop-down list. This is the time period that passes before the interface statistics are refreshed.



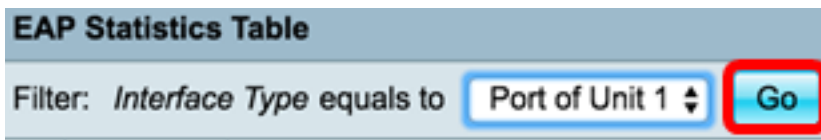
**Note:** In this example, 30 sec is chosen.

Step 3. Choose the interface type from the Interface Type drop-down list.



**Note:** In this example, Port of Unit 1 is chosen.

Step 4. Click **Go**.



The EAP Statistics Table will display the statistics of all the ports of the chosen switch.

Interface	Received Frames											
	EAPOL EAP	EAPOL Start	EAPOL Logoff	EAPOL Announcement	EAPOL Announcement Request	Invalid EAPOL	EAPOL EAP Length Error	MKPDU Unrecognized	MKPDU Invalid	Last EAPOL Version	Last EAPOL Source	
<input type="radio"/> GE1	5	1	0	0	0	0	0	0	0	3	10:60:4b:70:97:07	
<input type="radio"/> GE2	1	0	0	0	0	0	0	0	0	0	00:00:00:00:00:00	
<input type="radio"/> GE3	0	0	0	0	0	0	0	0	0	0	00:00:00:00:00:00	
<input type="radio"/> GE4	4	1	0	0	0	0	0	0	0	3	10:60:4b:70:97:07	
<input type="radio"/> GE5	41	28	0	0	0	0	0	0	0	1	00:41:d2:f9:d8:0a	
<input type="radio"/> GE6	0	0	0	0	0	0	0	0	0	0	00:00:00:00:00:00	

Step 5. (Optional) Scroll to the right or left part of the page to view more statistics.

Interface	Last EAPOL Source	Transmitted Frames							
		EAPOL EAP Supplicant	EAPOL Start	EAPOL Logoff	EAPOL Announcement	EAPOL Announcement Request	EAPOL EAP Authenticator	EAPOL MKA No KCN	
<input type="radio"/> GE1	10:60:4b:70:97:07	0	0	0	0	0	2	0	
<input type="radio"/> GE2	00:00:00:00:00:00	0	0	0	0	0	1	0	
<input type="radio"/> GE3	00:00:00:00:00:00	0	0	0	0	0	2	0	
<input type="radio"/> GE4	10:60:4b:70:97:07	0	0	0	0	0	2	0	
<input type="radio"/> GE5	00:41:d2:f9:d8:0a	0	0	0	0	0	93	0	
<input type="radio"/> GE6	00:00:00:00:00:00	0	0	0	0	0	0	0	

Step 6. (Optional) Click **Clear All Interface Counters** to clear the counters of the chosen interface.

<input type="radio"/> GE46	0	0	0	0	0	0	0	0	0	0	0
<input type="radio"/> GE47	0	0	0	0	0	0	0	0	0	0	0
<input type="radio"/> GE48	0	0	0	0	0	0	0	0	0	0	0
<input type="radio"/> XG3	0	0	0	0	0	0	0	0	0	0	0
<input type="radio"/> XG4	4	1	0	0	0	0	0	0	0	0	3

Step 7. (Optional) Click **Refresh** to refresh the statistics page.

<input type="radio"/>	GE46	0	0	0	0	0	0	0	0	0	0	0
<input type="radio"/>	GE47	0	0	0	0	0	0	0	0	0	0	0
<input type="radio"/>	GE48	0	0	0	0	0	0	0	0	0	0	0
<input type="radio"/>	XG3	0	0	0	0	0	0	0	0	0	0	0
<input type="radio"/>	XG4	4	1	0	0	0	0	0	0	0	0	3

Step 8. (Optional) To clear the counters of a specific interface, click the interface then click the **Clear Interface Counters** button.

<input type="radio"/>	GE46	0	0	0	0	0	0	0	0	0	0	0
<input checked="" type="radio"/>	GE47	0	0	0	0	0	0	0	0	0	0	0
<input type="radio"/>	GE48	0	0	0	0	0	0	0	0	0	0	0
<input type="radio"/>	XG3	0	0	0	0	0	0	0	0	0	0	0
<input type="radio"/>	XG4	4	1	0	0	0	0	0	0	0	0	3

Step 9. (Optional) To view the statistics of a specific interface, click the interface then click the **View Interface Statistics** button.

<input type="radio"/>	GE46	0	0	0	0	0	0	0	0	0	0	0
<input checked="" type="radio"/>	GE47	0	0	0	0	0	0	0	0	0	0	0
<input type="radio"/>	GE48	0	0	0	0	0	0	0	0	0	0	0
<input type="radio"/>	XG3	0	0	0	0	0	0	0	0	0	0	0
<input type="radio"/>	XG4	4	1	0	0	0	0	0	0	0	0	3

You should now have successfully viewed the 802.1x EAP statistics of all the ports of your switch.

**[View a video related to this article...](#)**

**[Click here to view other Tech Talks from Cisco](#)**