



ศูนย์เทคโนโลยีสารสนเทศและการสื่อสาร สป.มท.  
Information and Communication Technology Center.

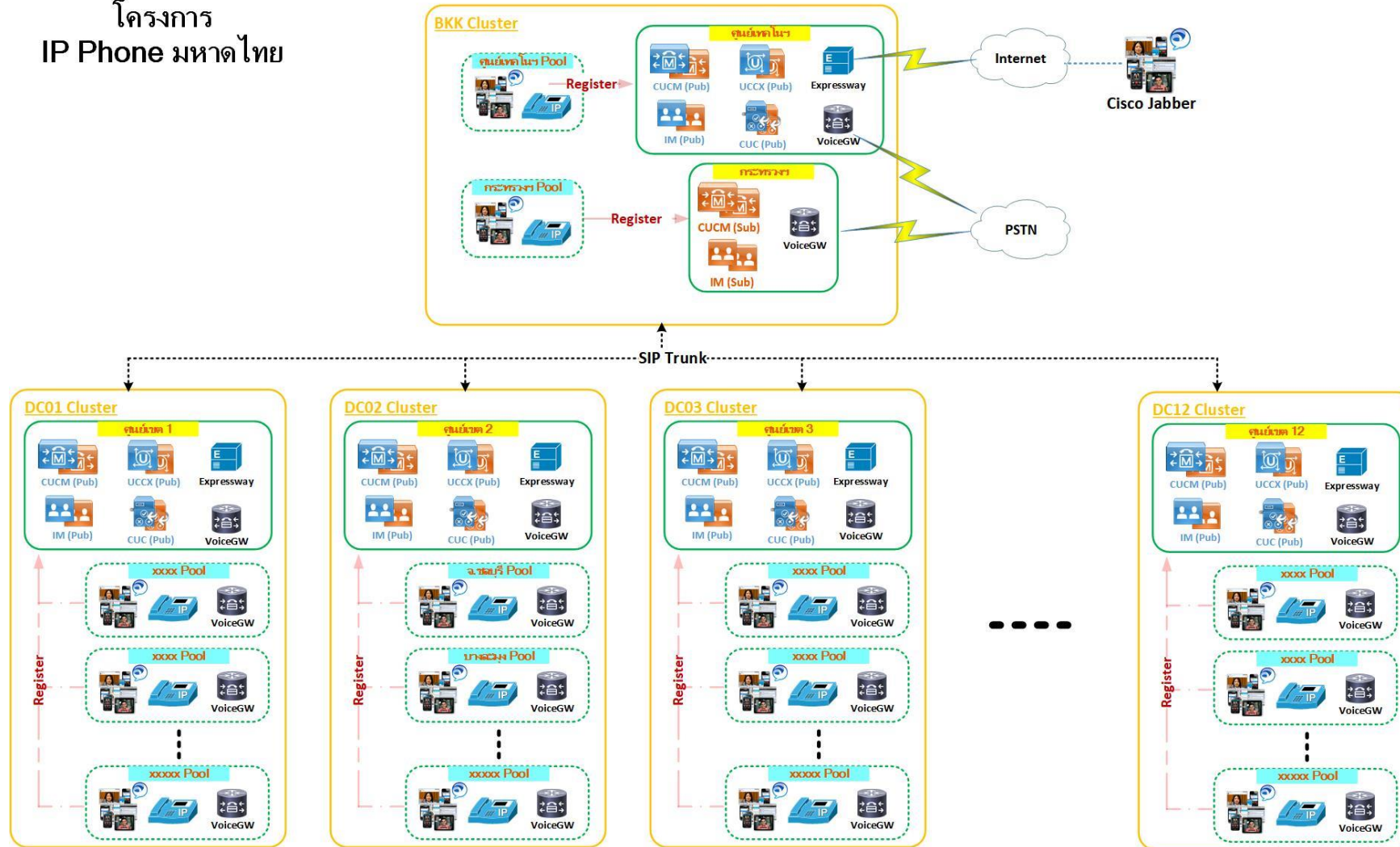
**SAMART**

# IP Telephony

## *Cisco Expressway-Core/Edge*

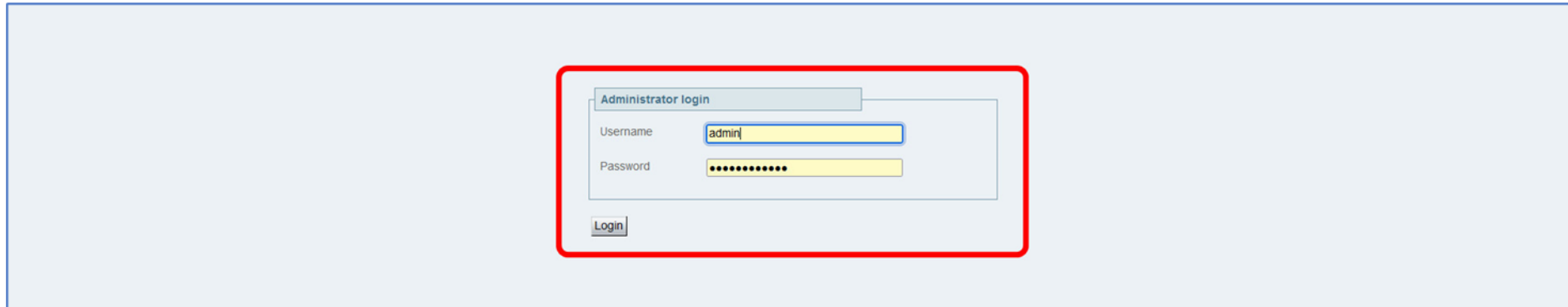


## โครงการ IP Phone มหาดไทย



## ❖ Login Cisco Expressway-C

- ใส่ IP Address ของ Web management
- ใส่ Username, Password และกด Login



Administrator login

Username

Password

## ❖ Status > Overview

- **Overview:** ใช้ตรวจสอบข้อมูลภาพรวมเช่น System mode, System information, Resource usage
- **System mode:** แสดงโหมดที่เปิดใช้งานบน Expressway-C เช่น Mobile and Remote Access, Registrar, Collaboration Meeting (CMR) Cloud, Business to Business calls
- **System information:** แสดงข้อมูลเบื้องต้นเกี่ยวกับระบบเช่น System name, Uptime, Software Version, IPv4 address
- **Resource usage:** แสดงประเภท resource ที่ถูกใช้งานบน Expressway เช่น Registered calls, Rich media session calls, Location Registrations, Desktop System, Room System

## ❖ Status > Overview

The screenshot shows the Cisco Expressway-C Overview page. At the top, there is a navigation bar with links for Status, System, Configuration, Users, and Maintenance. The main content area is titled 'Overview' and contains several sections: System mode, System information, and Resource usage. The System mode section shows 'Mobile and Remote Access' and 'Collaboration Meeting Rooms (CMR) Cloud' both set to 'Selected'. The System information section shows 'System name' as 'copi-voip-expc01', 'Up time' as '96 days 7 hours 17 minutes 2 seconds', and 'Software version' as 'X12.7'. The Resource usage section shows 'Registered calls' and 'Rich media session calls' with various metrics like current and peak video and audio. At the bottom, there is a footer with user information and system details.

System mode		
Mobile and Remote Access		Selected, <a href="#">Click to see status</a>
Collaboration Meeting Rooms (CMR) Cloud		Selected, <a href="#">Click to see status</a>
Selected modes		<a href="#">Return to service setup</a>

System information		
System name		copi-voip-expc01
Up time		96 days 7 hours 17 minutes 2 seconds
Software version		X12.7
IPv4 address		LAN 1: 10.230.1.29
Options		0 Rich Media Sessions, 0 Room Systems, 0 Desktop Systems, Encryption, Interworking, FindMe, Device Provisioning, Expressway Series.

Resource usage (last updated: 14:06:40 ICT)		
Registered calls	Current video	0
	Current audio (SIP)	0
	Peak video	2
	Peak audio (SIP)	3
Rich media session calls	Current video	0
	Current audio (SIP)	0
	Peak video	0
	Peak audio (SIP)	0
Monitored resource usage	Current	0%
Rich media sessions	License usage current	N/A
	License usage peak	N/A

For more detail see the [resource usage page](#)

User: admin Access: Read-write System host name: copi-voip-expc01 System time: 14:06 ICT Language: en\_US S/N: 08D2F919 Version: X12.7

## ❖ Status > System > Information

- **System Information:** แสดงข้อมูลเกี่ยวกับระบบภายในหัวข้อ system information ประกอบไปด้วย System name, Product, Software version, Software build, software release date, software name, software options, Hardware version, Serial number, VM Size
- **Time information:** แสดงข้อมูล Up time, System time, Time zone, Local time
- **Active sessions:** แสดง Administration sessions, User sessions

## ❖ Status > System > Information

The screenshot shows the Cisco Expressway-Core web interface. At the top left is the Cisco logo and the text "Cisco Expressway-C". Below this is a navigation bar with links for "Status >", "System >", "Configuration >", "Users >", and "Maintenance >". On the right side of the navigation bar are "Help" and "Logout" links. The main content area is titled "System information" and contains three sections: "System information", "Time information", and "Active sessions".

System information	
System name	copi-voip-expc01
Product	TANDBERG Video Communication Server
Software version	X12.7
Software build	oak_v12.7.0_rc_3
Software release date	2020-12-02 14:26
Software name	s42700
Software options	0 Rich Media Sessions, 0 Room Systems, 0 Desktop Systems, Encryption, Interworking, FindMe, Device Provisioning, Expressway Series.
Hardware version	VMware
Serial number	08D2F919
VM size	Medium

Time information	
Up time	96 days 7 hours 20 minutes 37 seconds
System time (UTC)	2023-07-22 07:09:38
Time zone	Asia/Bangkok
Local time	2023-07-22 14:09:38

Active sessions	
Administrator sessions	1
User sessions	0

## ❖ Status > Calls > Calls

- Call status: แสดงจำนวน Call ที่กำลังใช้งานผ่าน Expressway-C

The screenshot shows the Cisco Expressway-C web interface. At the top, there is a navigation menu with 'Status >' selected. Below the menu, the 'Call status' section is displayed. It shows 'Records: 0' and a table with columns: Start time, Duration, Source, Destination, Type, Protocol, SIP variant, Peer, and Actions. Below the table, there are buttons for 'Disconnect', 'Select all', and 'Unselect all'. The page number 'Page 1 of 1' is visible in the bottom right corner.



## ❖ Status > Bandwidth > Links

The screenshot shows the Cisco Expressway-Core web interface. At the top left is the Cisco logo and the text "Cisco Expressway-C". Below this is a navigation menu with links for "Status", "System", "Configuration", "Users", and "Maintenance". On the right side of the navigation menu are "Help" and "Logout" links. Below the navigation menu is the "Link status" section, which includes a breadcrumb trail: "You are here: Status > Bandwidth > Links". The main content is a table with three columns: "Name", "Calls", and "Bandwidth used". The table lists 19 different link names, all of which have 0 calls and 0 kbps of bandwidth used.

Name	Calls	Bandwidth used
<a href="#">DefaultSZtoClusterSZ</a>	0	0 kbps
<a href="#">DefaultSZtoDefaultZ</a>	0	0 kbps
<a href="#">DefaultSZtoTraversalSZ</a>	0	0 kbps
<a href="#">TraversalSZtoDefaultZ</a>	0	0 kbps
<a href="#">Zone001ToTraversalSZ</a>	0	0 kbps
<a href="#">Zone002ToDefaultSZ</a>	0	0 kbps
<a href="#">Zone002ToTraversalSZ</a>	0	0 kbps
<a href="#">Zone003ToDefaultSZ</a>	0	0 kbps
<a href="#">Zone003ToTraversalSZ</a>	0	0 kbps
<a href="#">Zone004ToDefaultSZ</a>	0	0 kbps
<a href="#">Zone004ToTraversalSZ</a>	0	0 kbps
<a href="#">Zone005ToDefaultSZ</a>	0	0 kbps
<a href="#">Zone005ToTraversalSZ</a>	0	0 kbps
<a href="#">Zone006ToDefaultSZ</a>	0	0 kbps
<a href="#">Zone006ToTraversalSZ</a>	0	0 kbps
<a href="#">Zone007ToDefaultSZ</a>	0	0 kbps
<a href="#">Zone007ToTraversalSZ</a>	0	0 kbps
<a href="#">Zone008ToDefaultSZ</a>	0	0 kbps
<a href="#">Zone008ToTraversalSZ</a>	0	0 kbps
<a href="#">Zone009ToTraversalSZ</a>	0	0 kbps

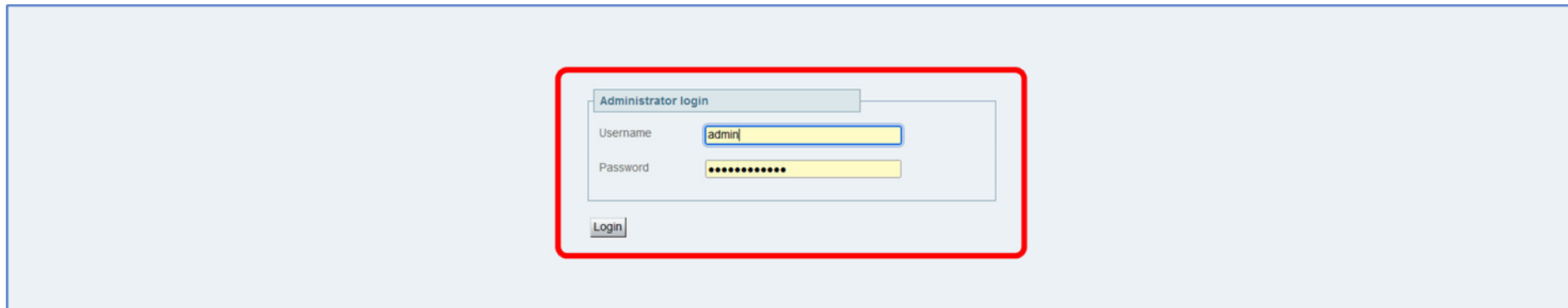
## ❖ Status > Logs > Event Log

- Event Log: แสดงบันทึกเหตุการณ์ที่เกิดขึ้นในระบบโดยผู้ดูแลระบบสามารถใช้ Filter เพื่อค้นหา Event ที่ต้องการตรวจสอบ และยังสามารถ Download Event Log ออกมาจากระบบเพื่อนำไปตรวจสอบได้

The screenshot shows the Cisco Expressway-C Event Log interface. At the top, there is a navigation menu with 'Status > System > Configuration > Users > Maintenance >'. Below this, the 'Event Log' section is active, with a breadcrumb trail 'You are here: Status > Logs > Event Log'. A red box highlights the 'Filter' section, which includes a text input field for filtering logs and a 'more options' link. Below the filter, there are 'Filter' and 'Reset' buttons. A red box also highlights the 'Download this page' link. The main area displays a list of log entries under the heading 'Results'. The entries include timestamps, event types (ssh, cvs), and details such as 'Allocated port 30791 for remote forward to localhost 8443' and 'Certificate Valid within the last Hour'. The interface also shows pagination controls (1 2 3 4 5 6 ... Last | Next) and a 'Go to page' field.

## ❖ Login Cisco Expressway-E

- ใส่ IP Address ของ Web management
- ใส่ Username, Password และกด Login



Administrator login


Username

Password

## ❖ Status > Overview

- **Overview:** ใช้ตรวจสอบข้อมูลภาพรวมเช่น System mode, System information, Resource usage
- **System mode:** แสดงโหมดที่เปิดใช้งานบน Expressway-E เช่น Mobile and Remote Access, Business to Business calls
- **System information:** แสดงข้อมูลเบื้องต้นเกี่ยวกับระบบเช่น System name, Uptime, Software Version, IPv4 address
- **Resource usage:** แสดงประเภท resource ที่ถูกใช้งานบน Expressway เช่น Registered calls, Rich media session calls, MRA Registrations

## Status > Overview

 Cisco Expressway-E This system has 1 alarm

[Status](#) > [System](#) > [Configuration](#) > [Applications](#) > [Users](#) > [Maintenance](#) > [Help](#) [Logout](#)

### Overview

You are here: [Status](#) > [Overview](#)

**System mode**

Mobile and Remote Access	Selected, <a href="#">Click to see status</a>
Business to business calls	Selected, <a href="#">Click to see status</a>
Selected modes	<a href="#">Return to service setup</a>

**System information**

<a href="#">System name</a>	copi-voip-expe01
<a href="#">Up time</a>	96 days 7 hours 22 minutes 25 seconds
<a href="#">Software version</a>	X12.7
<a href="#">IPv4 address</a>	LAN 1: 10.230.1.30 LAN 2: 103.28.103.61
<a href="#">Options</a>	0 Rich Media Sessions, 0 Room Systems, 0 Desktop Systems, 1800 TURN Relays, Traversal Server, Encryption, Interworking, FindMe, Device Provisioning, Advanced Networking, Expressway Series.

**Resource usage (last updated: 14:11:18 ICT)**

<a href="#">Registered calls</a>	Current video	0
	Current audio (SIP)	0
	Peak video	6
	Peak audio (SIP)	3
<a href="#">Rich media session calls</a>	Current video	0
	Current audio (SIP)	0
	Peak video	0
	Peak audio (SIP)	0
Monitored resource usage	Current	0%
Rich media sessions	License usage current	N/A
	License usage peak	N/A
MRA Registrations	Current	5
	Peak	29

User: admin Access: Read-write System host name: copi-voip-expe01 System time: 14:15 ICT Language: en\_US S/N: 0CE8AD3A Version: X12.7

## ❖ Status > System > Information

- **System Information:** แสดงข้อมูลเกี่ยวกับระบบภายในหัวข้อ system information ประกอบไปด้วย System name, Product, Software version, Software build, software release date, software name, software options, Hardware version, Serial number, VM Size
- **Time information:** แสดงข้อมูล Up time, System time, Time zone, Local time
- **Active sessions:** แสดง Administration sessions, User sessions

## ❖ Status > System > Information

The screenshot shows the Cisco Expressway-Edge management interface. At the top left is the Cisco logo and the text "Cisco Expressway-E". On the right, a red notification bubble says "This system has 1 alarm". Below the header is a navigation menu with "Status >" selected, followed by "System >", "Configuration >", "Applications >", "Users >", and "Maintenance >". There are also links for "Help" and "Logout". The main content area is titled "System information" and contains a table of system details. Below the table are sections for "Time information" and "Active sessions".

System information	
<a href="#">System name</a>	copi-voip-expe01
Product	TANDBERG Video Communication Server
<a href="#">Software version</a>	X12.7
Software build	oak_v12.7.0_rc_3
Software release date	2020-12-02 14:26
Software name	s42700
<a href="#">Software options</a>	0 Rich Media Sessions, 0 Room Systems, 0 Desktop Systems, 1800 TURN Relays, Traversal Server, Encryption, Interworking, FindMe, Device Provisioning, Advanced Networking, Expressway Series.
Hardware version	VMware
Serial number	0CE8AD3A
VM size	Medium

Time information	
Up time	96 days 7 hours 32 minutes 44 seconds
<a href="#">System time (UTC)</a>	2023-07-22 07:16:15
<a href="#">Time zone</a>	Asia/Bangkok
Local time	2023-07-22 14:16:15

Active sessions	
<a href="#">Administrator sessions</a>	2
<a href="#">User sessions</a>	0

## ❖ Status > Calls > Calls

- Call status: แสดงจำนวน Call ที่กำลังใช้งานผ่าน Expressway-E

The screenshot shows the Cisco Expressway-E web interface. At the top left is the Cisco logo and the text "Cisco Expressway-E". A navigation menu includes "Status >", "System >", "Configuration >", "Applications >", "Users >", and "Maintenance >". On the right, there is a "This system has 1 alarm" notification, a "Help" icon, and a "Logout" button. The main heading is "Call status", with a breadcrumb "You are here: Status > Calls > Calls". Below this, it says "Records: 0" and "Page 1 of 1". A table with the following columns is visible: Start time, Duration, Source, Destination, Type, Protocol, SIP variant, Peer, and Actions. At the bottom of the table, there are three buttons: "Disconnect", "Select all", and "Unselect all".



## ❖ Status > Bandwidth > Links

- **Link status:** แสดงข้อมูลจำนวน Calls และ Bandwidth ที่ใช้งานผ่าน link logical

The screenshot shows the Cisco Expressway-Edge management interface. At the top left is the Cisco logo and the device name 'Cisco Expressway-E'. A red notification bubble on the right says 'This system has 1 alarm'. Below the navigation menu (Status > System > Configuration > Applications > Users > Maintenance >), there are links for 'Help' and 'Logout'. The main content area is titled 'Link status' and contains a table with the following data:

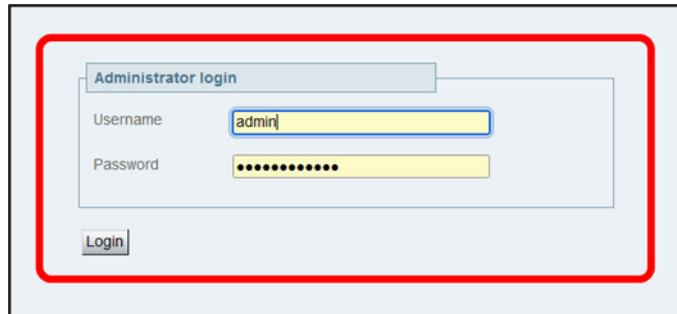
Name	Calls	Bandwidth used
<a href="#">CollaborationEdgeZToDefaultSZ</a>	0	0 kbps
<a href="#">CollaborationEdgeZToTraversalSZ</a>	0	0 kbps
<a href="#">DefaultSZtoClusterSZ</a>	0	0 kbps
<a href="#">DefaultSZtoDefaultZ</a>	0	0 kbps
<a href="#">DefaultSZtoTraversalSZ</a>	0	0 kbps
<a href="#">TraversalSZtoDefaultZ</a>	0	0 kbps
<a href="#">Zone001ToTraversalSZ</a>	0	0 kbps
<a href="#">Zone002ToTraversalSZ</a>	0	0 kbps
<a href="#">Zone003ToDefaultSZ</a>	0	0 kbps
<a href="#">Zone003ToTraversalSZ</a>	0	0 kbps

## ❖ Status > Logs > Event Log

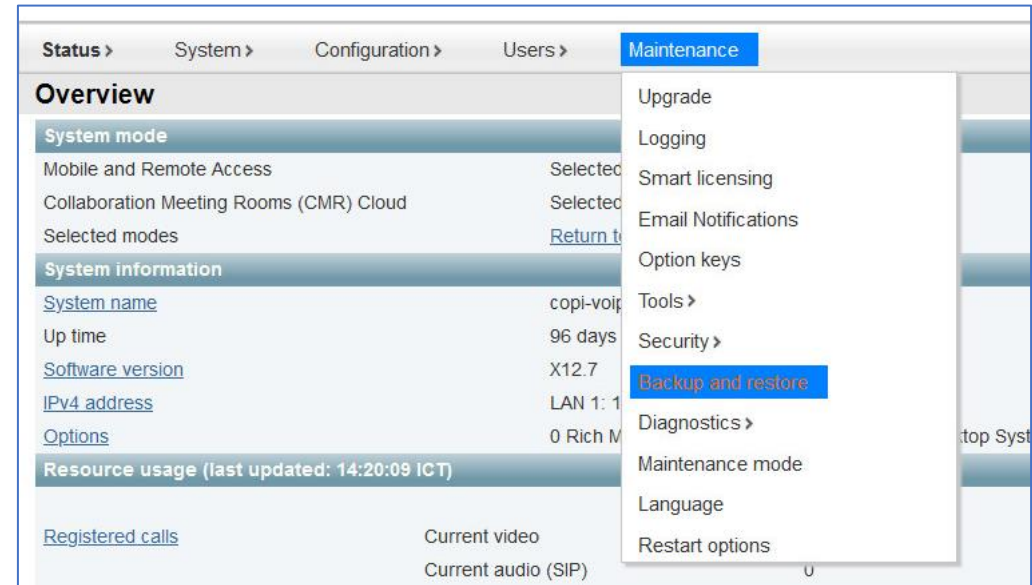
- **Event Log:** แสดงบันทึกเหตุการณ์ที่เกิดขึ้นในระบบโดยผู้ดูแลระบบสามารถใช้ Filter เพื่อค้นหา Event ที่ต้องการตรวจสอบและยังสามารถ Download Event Log ออกมาจากระบบเพื่อนำไปตรวจสอบได้

The screenshot shows the Cisco Expressway-Edge Event Log interface. At the top, there is a navigation bar with 'Status > System > Configuration > Applications > Users > Maintenance >'. A red notification bubble says 'This system has 1 alarm'. Below the navigation bar, the 'Event Log' section is visible. A red box highlights the 'Filter' input field, which contains the text 'Contains all of the words:'. Below the filter field, there are 'Filter' and 'Reset' buttons. To the right of the filter field, there is a 'more options' link. Below the filter field, there is a 'Download this page' link. The main content area shows a list of log entries under the heading 'Results'. The log entries include timestamps and details of events, such as 'getty[4562]: /dev/ttyS0: not a tty', 'tvcs: Event="Registration Rejected" Reason="License limit exceeded" Service="SIP" Src-ip="195.154.58.216" Src-port="58133" Protocol="UDP" AOR="71242@103.28.103.61" Contact="sip:71242@195.154.58.216:58133" Duration="60" Level="1" UTCTime="2023-07-22 07:18:13.885"', 'licensemanager: Level="INFO" Detail="License not granted" call\_id="8f7d9b12-00eb-47c9-ae50-a57c49de1fd2" lic\_type="Ip\_registration" tokens=1 UTCTime="2023-07-22 07:18:13.884"', 'tvcs: Event="Registration Requested" Service="SIP" Src-ip="195.154.58.216" Src-port="58133" Protocol="UDP" AOR="71242@103.28.103.61" Contact="sip:71242@195.154.58.216:58133" Duration="60" Level="1" UTCTime="2023-07-22 07:18:13.881"', 'sshd[4463]: Disconnected from 61.177.172.179 port 58989 [preauth]', 'sshd[4463]: Received disconnect from 61.177.172.179 port 58989:11: [preauth]', 'sshd[4463]: Event="sshd" Module="openssh" Level="INFO" Detail="Connection from 61.177.172.179 port 58989 on 103.28.103.61 port 22 rdomain ""' UTCTime="2023-07-22 07:17:34"', 'sshd[4463]: error: Unable to load host key: /etc/ssh/ssh\_host\_dsa\_key', and 'tvcs: Event="Registration Rejected" Reason="License limit exceeded" Service="SIP" Src-ip="195.154.58.216" Src-port="64680" Protocol="UDP" AOR="78676@103.28.103.61" Contact="sip:78676@195.154.58.216:64680" Duration="60" Level="1" UTCTime="2023-07-22 07:17:26.960"'. At the bottom of the log list, there are pagination controls: '1 2 3 4 5 6 ... Last | Next', 'Go to page: [input] Go', and 'Page 1 of 140'.

- Cisco Expressway-C and E Backup
  - ใส่ IP Address ของ Web management
  - ใส่ Username, Password และกด Login



- เลือก Maintenance > Backup and restore



- Cisco Expressway-C and E Backup
  - ใส่ Password ลงในช่อง Encryption password, Encryption password confirmation
  - เลือก Create system backup file
  - ไฟล์ backup จะถูกโหลดมาเก็บลงในเครื่อง PC หรือ Notebook ที่กำลังใช้งานอยู่อัตโนมัติ

Status > System > Configuration > Users > Maintenance > Help Logout

### Backup and restore

You are here: [Maintenance](#) > Backup and restore

**System information**

Software version	X12.7
Serial number	08D2F919

**Backup**

WARNING: The backup process will create a file containing potentially sensitive information about your system, including configuration settings, clustering configuration, security certificates and administrator account details. Please take appropriate steps to safeguard this file.

Encryption password \*

Encryption password confirmation \*

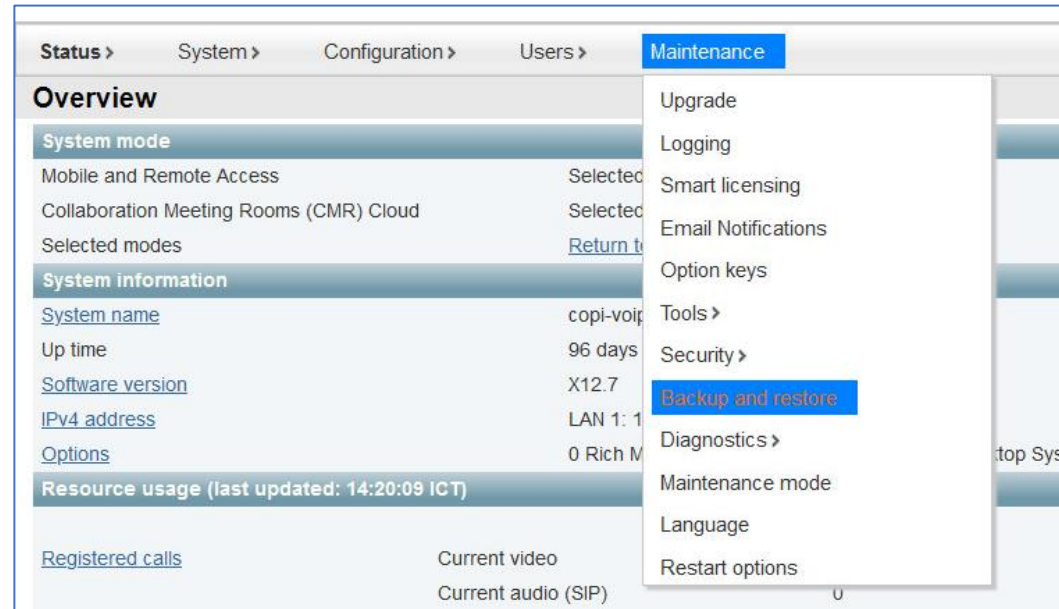
[Create system backup file](#)

**Information**

Enter a password with which to encrypt the backup file.

The same password will be required to restore the file.

- Cisco Expressway-C and ERestore
- เลือก Maintenance > Backup and restore



- Cisco Expressway-C and E Restore

The screenshot shows the Cisco Expressway-C and E web interface. The navigation menu includes Status, System, Configuration, Applications, Users, and Maintenance. The current page is 'Backup and restore' under the 'Maintenance' section. The interface is divided into three main sections: System information, Backup, and Restore.

**System information:** Software version X12.7, Serial number 0CE8AD3A.

**Backup:** A warning message states: "The backup process will create a file containing potentially sensitive information about your system, including configuration settings, clustering configuration, security certificates and administrator account details. Please take appropriate steps to safeguard this file." There are two input fields: "Encryption password" (masked with dots) and "Encryption password confirmation" (empty).

**Restore:** A warning message states: "We recommend that you backup the current system prior to attempting a restore operation." Another warning message states: "A restart will be required to complete the system restore process." There are two input fields: "Backup file to be restored" (with a "Browse..." button and "No file selected." text) and "Decryption password" (masked with dots). A red box highlights these two fields.

Buttons: "Create system backup file" and "Upload system backup file".

- ที่หัวข้อ Backup file to be restore ให้คลิก Browse และเลือกไฟล์ที่ได้ Backup ไว้
- ที่หัวข้อ Decryption password ให้ใส่ Password ที่กำหนดไว้ในขั้นตอน Backup
- คลิก Upload system backup file

- Expressway-C and E (Restart, Reboot, Shutdown)

- เลือก Maintenance > Restart options ตามวัตถุประสงค์การใช้งานดังนี้

**Restart:** เลือก Restart เพื่อให้การเปลี่ยนแปลงคอนฟิกูเรชันบางอย่างมีผล หรือเมื่อระบบกำลังถูกเพิ่มหรือลบออกจากคลัสเตอร์

**Reboot:** เลือก Reboot เมื่อต้องการใช้ซอฟต์แวร์เวอร์ชันใหม่ หรือเมื่อพยายามแก้ไขข้อผิดพลาดของระบบที่ไม่คาดคิด

**Shutdown:** เลือก Shutdown เมื่อต้องการปิดเครื่อง

**Information**

A restart is typically required in order for some configuration changes to take effect, or when the system is being added to, or removed from, a cluster.

A reboot is typically required when you want to apply new versions of software, or when you are trying to resolve unexpected system errors.

Note that a restart shuts down and restarts only the application software, whereas a reboot shuts down and restarts the application software, operating system and hardware.

A shutdown is typically required if you want to unplug your unit, prior to maintenance or relocation for example.

Restart Reboot Shutdown



ศูนย์เทคโนโลยีสารสนเทศและการสื่อสาร ส.ป.ม.ท.  
Information and Communication Technology Center.

**SAMART**

Thanks and Regards.

สำนักงานส่งเสริมการค้าในต่างประเทศ  
กรุงเทพฯ