

Dynamic LACP Trunking

The example configurations below provide dynamic trunking between two HP Procurve Series 2500 Switches (Switch A and Switch B) using LACP (802.3ad) as the trunking protocol.

Another benefit, besides dynamic trunk formation, of an LACP trunk is port redundancy. If one of the operational ports fails then one of the redundant "standby" ports becomes operational without any user intervention.

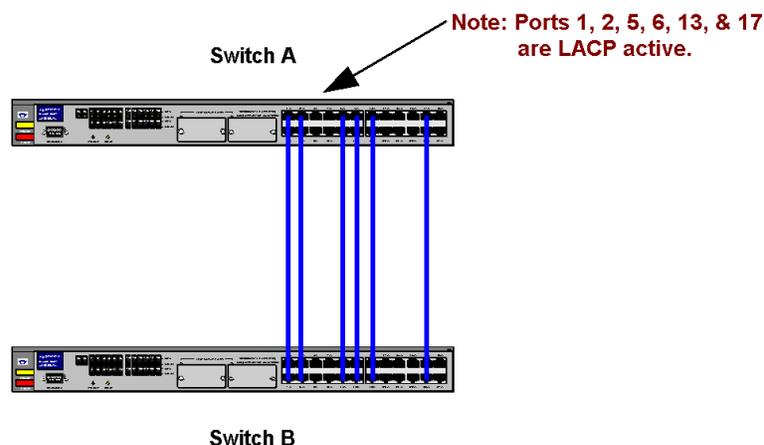
To create a dynamic LACP trunk, configure ports at one end of the link to be LACP active - and ensure that LACP is enabled at the other end.

Switch A is configured to provide six LACP active ports. Since the Series 2500 Switches support one trunk group of up to four ports, the other two ports will be redundant "standby" ports.

Switch B is in its default configuration. As stated above for a dynamic LACP trunk, once one end of the link is configured for LACP active, the only other requirement is that the port at the other end of the link must have LACP enabled. Since the Series 2500 Switches have LACP enabled by default, there is no need to modify Switch B from its default configuration.

This configuration example applies to the following products:

- J4812A HP Procurve Switch 2512
- J4813A HP Procurve Switch 2524



WARNING:

The example configurations below were created from a factory default configuration on the Series 2500 Switches. The first command in the sequence of CLI commands given below will first reset a Series 2500 Switch back to its factory default settings. We recommend saving your current configuration if necessary. Otherwise, skip the first command.

NOTES:

1. By default, LACP is enabled (all ports are set to LACP passive) on the Series 2500 Switches. For a dynamic LACP trunk to form, at least one end of the link must be LACP active.
2. The Series 2500 Switches support one trunk group of up to four ports, and the ports need not be consecutive or contiguous on the switch.
3. Dynamic LACP trunks are always created in the DEFAULT_VLAN of Series 2500 Switches. That is because the LACP protocol does not send VLAN information, so the switches have no way to know what VLAN or VLANs to put the trunk into.
4. There is no limit, besides the number of physical ports available on the switch, on the number of "standby" ports in an LACP trunk group.
5. If STP and/or IGMP is enabled in the switch, a dynamic LACP trunk operates only with the default settings for these features and does not appear in the port listings for these features.
6. Port security does not operate on a trunk group.
7. The configuration examples below were created on software version F.01.07.

REQUIREMENTS/RESTRICTIONS:

1. All port trunk links must be point-to-point (i.e., coterminus) connections between the Switch 2512 or 2524 and another switch, router, server, or workstation configured for LACP trunking. No intervening, non-trunking devices are allowed.
2. LACP will only operate on full-duplex links.
3. All ports in a trunk group must have the same media type, mode (speed and duplex) and flow control settings.
4. Always configure port trunking before you connect links to another switch. Otherwise, a network topology loop (i.e., broadcast storm) could occur.

CONFIGURATION COMMANDS: (created on software version F.01.07)

Switch A

```
HP ProCurve Switch 2524# erase start
Configuration will be deleted and device rebooted, continue [y/n]? y
HP ProCurve Switch 2524# config t
HP ProCurve Switch 2524(config)# hostname Switch_A
Switch_A(config)# int e 1-2,5-6,13,17 lacp active
Switch_A(config)# wr mem
Switch_A(config)# end
```

CONFIGURATION COMMANDS: (created on software version F.01.07)

Switch B

None. This switch is left in default configuration (LACP passive on all ports).

RESULTING CONFIGURATION:

Switch A

```
Switch_A# sh config
IN-FLASH CONFIGURATION

; J4813A Configuration Editor; Created on release #F.01.07

time daylight-time-rule None
hostname "Switch_A"
interface 1
    lacp Active
    exit
interface 2
    lacp Active
    exit
interface 5
    lacp Active
    exit
interface 6
    lacp Active
    exit
interface 13
    lacp Active
    exit
interface 17
    lacp Active
    exit
ip timep dhcp
snmp-server community "public" Unrestricted
vlan 1
    name "DEFAULT_VLAN"
    untagged 1-26,Dyn1
    ip address dhcp-bootp
    exit
```

RESULTING CONFIGURATION:

Switch B (Default configuration.)

```
HP ProCurve Switch 2524# sh config
IN-FLASH CONFIGURATION

; J4813A Configuration Editor; Created on release #F.01.07

time daylight-time-rule None
hostname "HP ProCurve Switch 2524"
ip timep dhcp
snmp-server community "public" Unrestricted
vlan 1
    name "DEFAULT_VLAN"
    untagged 1-26,Dyn1
    ip address dhcp-bootp
exit
```

VERIFICATION COMMANDS:

The following CLI commands can be used to display LACP information:

- **show lacp**
- **show log lacp**

```
Switch_A# sh lacp
```

LACP					
PORT NUMB	LACP ENABLED	TRUNK GROUP	PORT STATUS	LACP PARTNER	LACP STATUS
1	Active	Dyn1	Up	Yes	Success
2	Active	Dyn1	Up	Yes	Success
3	Passive	3	Down	No	Success
4	Passive	4	Down	No	Success
5	Active	Dyn1	Up	Yes	Success
6	Active	Dyn1	Up	Yes	Success
7	Passive	7	Down	No	Success
8	Passive	8	Down	No	Success
9	Passive	9	Down	No	Success
10	Passive	10	Down	No	Success
11	Passive	11	Down	No	Success
12	Passive	12	Down	No	Success
13	Active	Dyn1	Standby	Yes	Success
14	Passive	14	Down	No	Success
15	Passive	15	Down	No	Success
16	Passive	16	Down	No	Success
17	Active	Dyn1	Standby	Yes	Success
18	Passive	18	Down	No	Success
19	Passive	19	Down	No	Success
20	Passive	20	Down	No	Success
21	Passive	21	Down	No	Success
22	Passive	22	Down	No	Success
23	Passive	23	Down	No	Success
24	Passive	24	Down	No	Success
25	Passive	25	Down	No	Success
26	Passive	26	Down	No	Success

HP ProCurve Switch 2524# sh lacp

LACP

PORT NUMB	LACP ENABLED	TRUNK GROUP	PORT STATUS	LACP PARTNER	LACP STATUS
1	Passive	1	Down	No	Success
2	Passive	2	Down	No	Success
3	Passive	3	Down	No	Success
4	Passive	4	Down	No	Success
5	Passive	5	Down	No	Success
6	Passive	6	Down	No	Success
7	Passive	Dyn1	Up	Yes	Success
8	Passive	Dyn1	Up	Yes	Success
9	Passive	9	Down	No	Success
10	Passive	10	Down	No	Success
11	Passive	Dyn1	Up	Yes	Success
12	Passive	Dyn1	Up	Yes	Success
13	Passive	13	Down	No	Success
14	Passive	14	Down	No	Success
15	Passive	15	Down	No	Success
16	Passive	16	Down	No	Success
17	Passive	17	Down	No	Success
18	Passive	18	Down	No	Success
19	Passive	Dyn1	Standby	Yes	Success
20	Passive	20	Down	No	Success
21	Passive	21	Down	No	Success
22	Passive	22	Down	No	Success
23	Passive	Dyn1	Standby	Yes	Success
24	Passive	24	Down	No	Success
25	Passive	25	Down	No	Success
26	Passive	26	Down	No	Success

Switch_A# sh log lacp

Keys: W=Warning I=Information
M=Major D=Debug

```

---- Event Log listing: Events Since Boot ----
I 01/01/90 00:00:09 lacp: Passive Dynamic LACP enabled on all ports
I 01/01/90 00:00:22 lacp: Port 1 is blocked - negotiation
I 01/01/90 00:00:22 lacp: Port 2 is blocked - negotiation
I 01/01/90 00:00:22 lacp: Port 5 is blocked - negotiation
I 01/01/90 00:00:22 lacp: Port 6 is blocked - negotiation
I 01/01/90 00:00:22 lacp: Port 13 is blocked - negotiation
I 01/01/90 00:00:22 lacp: Port 17 is blocked - negotiation
I 01/01/90 00:00:26 lacp: Port 13 is moved to trunk Dyn1
I 01/01/90 00:00:26 lacp: Port 17 is moved to trunk Dyn1
I 01/01/90 00:00:27 lacp: Dynamic LACP trunk Dyn1 is now on-line
I 01/01/90 00:00:28 lacp: Port 1 is moved to trunk Dyn1
I 01/01/90 00:00:29 lacp: Port 2 is moved to trunk Dyn1
I 01/01/90 00:00:30 lacp: Port 5 is moved to trunk Dyn1
I 01/01/90 00:00:30 lacp: Port 17 is blocked - re-negotiation
I 01/01/90 00:00:30 lacp: Port 6 is moved to trunk Dyn1
I 01/01/90 00:00:30 lacp: Port 13 is blocked - re-negotiation
I 01/01/90 00:00:34 lacp: Port 17 is blocked - negotiation
I 01/01/90 00:00:35 lacp: Port 17 is moved to trunk Dyn1
I 01/01/90 00:00:35 lacp: Port 13 is blocked - negotiation
I 01/01/90 00:00:36 lacp: Port 13 is moved to trunk Dyn1
---- Bottom of Log : Events Listed = 20 ----

```

HP ProCurve Switch 2524# sh log lacp

Keys: W=Warning I=Information
M=Major D=Debug

```
---- Event Log listing: Events Since Boot ----  
I 01/01/90 00:00:09 lacp: Passive Dynamic LACP enabled on all ports  
I 01/01/90 00:00:19 lacp: Port 7 is blocked - negotiation  
I 01/01/90 00:00:19 lacp: Port 8 is blocked - negotiation  
I 01/01/90 00:00:19 lacp: Port 11 is blocked - negotiation  
I 01/01/90 00:00:19 lacp: Port 12 is blocked - negotiation  
I 01/01/90 00:00:19 lacp: Port 19 is blocked - negotiation  
I 01/01/90 00:00:19 lacp: Port 23 is blocked - negotiation  
I 01/01/90 00:00:20 lacp: Port 7 is moved to trunk Dyn1  
I 01/01/90 00:00:20 lacp: Port 8 is moved to trunk Dyn1  
I 01/01/90 00:00:21 lacp: Dynamic LACP trunk Dyn1 is now on-line  
I 01/01/90 00:00:22 lacp: Port 11 is moved to trunk Dyn1  
I 01/01/90 00:00:23 lacp: Port 12 is moved to trunk Dyn1  
I 01/01/90 00:00:23 lacp: Port 19 is moved to trunk Dyn1  
I 01/01/90 00:00:23 lacp: Port 23 is moved to trunk Dyn1  
I 01/01/90 00:00:31 lacp: Port 23 is blocked - negotiation  
I 01/01/90 00:00:31 lacp: Port 23 is moved to trunk Dyn1  
I 01/01/90 00:00:32 lacp: Port 19 is blocked - negotiation  
I 01/01/90 00:00:32 lacp: Port 19 is moved to trunk Dyn1  
---- Bottom of Log : Events Listed = 18 ----
```