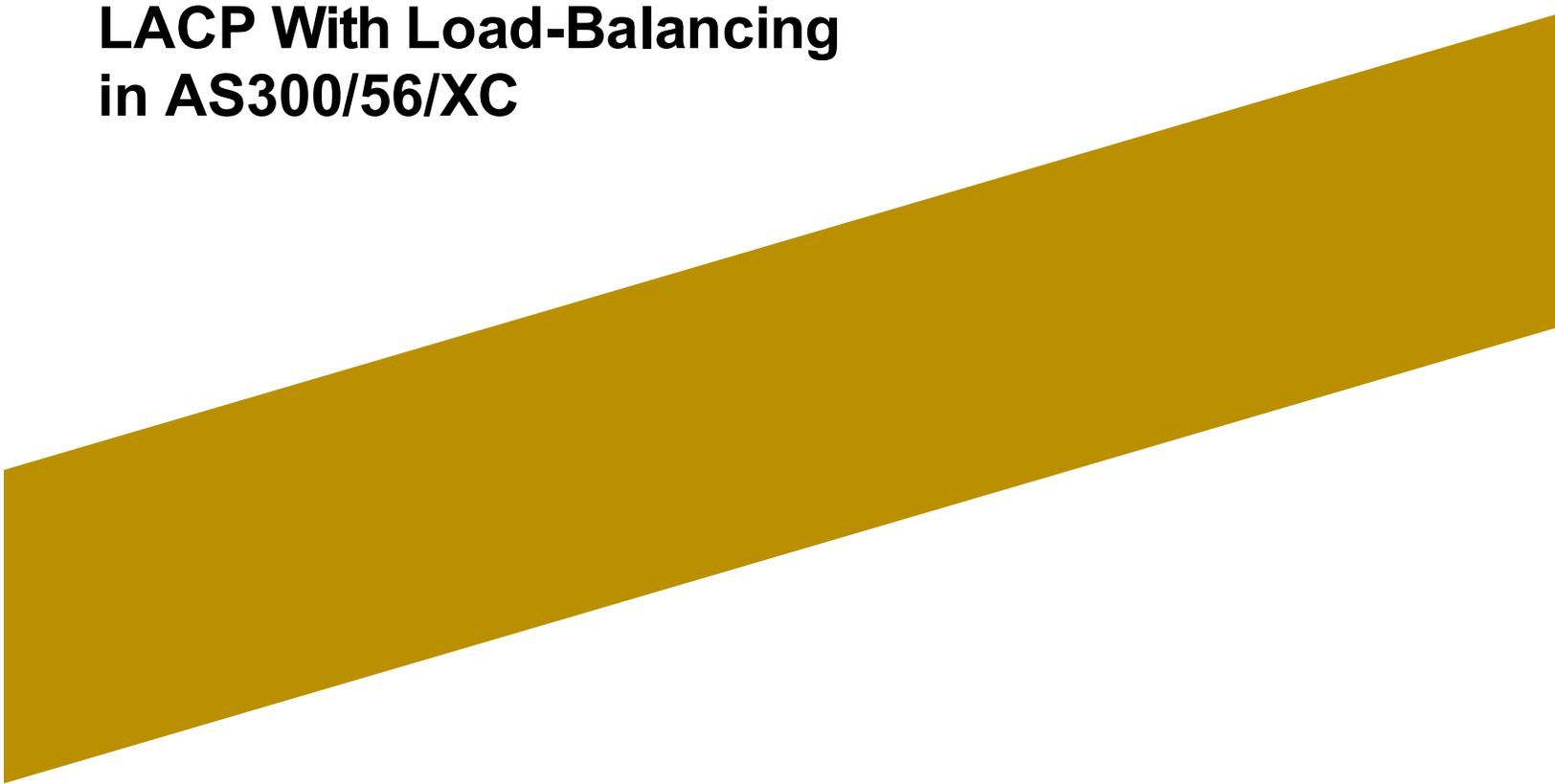
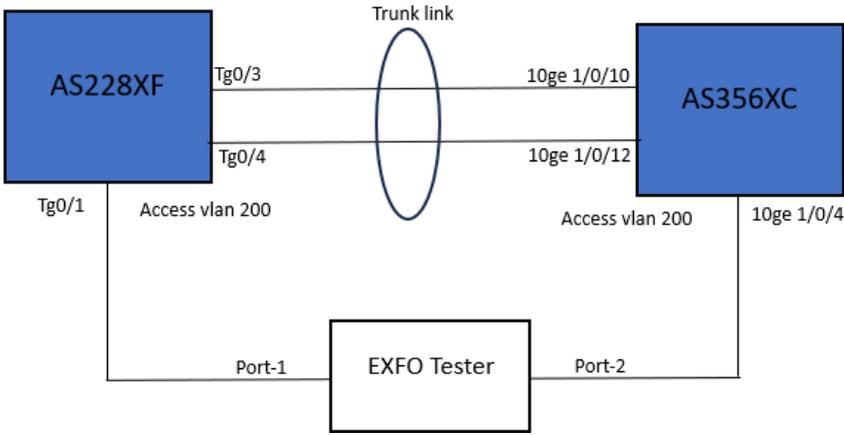


**Alpha Bridge
LACP With Load-Balancing
in AS300/56/XC**



Test	LACP with load-balancing in AS300/56/XC
Test procedure	 <p>The diagram illustrates a network setup for testing LACP with load-balancing. It features two switches, AS228XF and AS356XC, connected via a Trunk link. AS228XF has two ports, Tg0/3 and Tg0/4, connected to the trunk link. AS356XC has two ports, 10ge 1/0/10 and 10ge 1/0/12, connected to the trunk link. Both switches also have an Access vlan 200. AS228XF's Tg0/1 is connected to the Access vlan 200, and AS356XC's 10ge 1/0/4 is connected to the Access vlan 200. An EXFO Tester is connected to both Access vlans via Port-1 and Port-2.</p>
configuration	<p>Configuration in AS356XC:</p> <pre> ! hostname AS356XC ! Vlan 1,200 ! interface vlan 200 ip address 192.168.200.241/24 ! interface eth-trunk 1 //creating the aggregator group mode lacp-static //mode as LACP port link-type trunk port trunk allow-pass vlan all load-balance schedule-profile Alpha //assigning the load-balancing profile ! ! </pre>

```
schedule-profile Alpha // creating the load-balancing profile, Except I4 removed remaining all to  
match the load-balancing with AS228XF
```

```
no l2 field src-mac
```

```
no l2 field dst-mac
```

```
no l2 field l2-protocol
```

```
no l2 field vlan
```

```
no ip field src-ip
```

```
no ip field dst-ip
```

```
no ip field vlan
```

```
no ip field protocol
```

```
no ipv6 field src-ip
```

```
no ipv6 field dst-ip
```

```
no ipv6 field vlan
```

```
no ipv6 field l4-srcport
```

```
no ipv6 field l4-dstport
```

```
no ipv6 field protocol
```

```
no mpls field top-label
```

```
no mpls field 2nd-label
```

```
no mpls field src-ip
```

```
no mpls field dst-ip
```

```
no mpls field vlan
```

```
!
```

```
interface 10gigaethernet 1/0/10
```

```
join eth-trunk 1 // assign the interface to aggregator group
```

```
!
```

```
interface 10gigaethernet 1/0/12
```

```
join eth-trunk 1 // assign the interface to aggregator group
```

```
!
```

Note: When the load-balance profile is created, all hash fields are enabled by default. Unnecessary hash fields need to be removed.

	<p>Configuration in AS228XF:</p> <pre> ! hostname AS228XF ! aggregator-group load-balance both-l4port <i>// enabling the load-balancing</i> ! interface Port-aggregator1 <i>// creating the aggregator group</i> agg-period 1 switchport mode trunk ! interface TGigaEthernet0/1 switchport pvid 200 ! interface TGigaEthernet0/3 aggregator-group 1 mode lacp <i>// assign the interface to aggregator group</i> switchport mode trunk ! interface TGigaEthernet0/4 aggregator-group 1 mode lacp <i>// assign the interface to aggregator group</i> switchport mode trunk ! interface VLAN200 ip address 192.168.200.243 255.255.255.0 no ip directed-broadcast ! ! vlan 1,200 </pre>
test result	<p>Results for LACP with load-balancing</p> <p>Aggregator ports in AS228XF and AS356XC</p>

The screenshot shows two terminal windows. The left window (COM5 - PUTTY) displays the configuration for AS228XF, including LACP aggregator group 1 details and interface status for tg0/4 and tg0/3. The right window (COM7 - PUTTY) displays the configuration for AS356XC, showing LACP status for eth-trunk 1 and detailed local information for interfaces 10/10 and 10/12.

Utilization of the interfaces in AS228XF and AS356XC

The screenshot shows two terminal windows displaying interface utilization statistics. The left window (COM5 - PUTTY) shows counters for AS228XF interfaces tg0/1, tg0/3, and tg0/4. The right window (COM7 - PUTTY) shows verbose interface information for AS356XC eth-trunk 1, including port lists and utilization percentages for member interfaces 10/12 and 10/10.

The output utilization of each interface in AS356XC is 50%, so load is shared to all the ports equally.

Tester results

Summary		Streams	Traffic	Alarms/Errors	Logger	P1	P2
Stream	TX Rate (Mbit/s)	RX Rate (Mbit/s)					
		Current	Average	Minimum	Maximum		
1	625.00	625.00	✓	624.99	624.99	625.01	
2	625.00	625.00	✓	624.99	624.99	625.01	
3	625.00	625.00	✓	624.99	624.99	625.00	
4	625.00	625.00	✓	624.99	624.99	625.00	
5	625.00	624.99	✓	624.99	624.99	625.00	
6	625.00	624.99	✓	625.00	624.99	625.00	
7	625.00	624.99	✓	625.00	624.99	625.01	
8	625.00	624.99	✓	625.00	624.99	625.01	
9	625.00	624.99	✓	625.00	624.99	625.01	
10	625.00	624.99	✓	625.00	624.99	625.01	
11	625.00	624.99	✓	625.00	624.99	625.00	
12	625.00	624.99	✓	625.00	624.99	625.00	
13	625.00	625.00	✓	624.99	624.99	625.00	
14	625.00	625.00	✓	624.99	624.99	625.00	
15	625.00	625.00	✓	624.99	624.99	625.01	
16	625.00	625.00	✓	624.99	624.99	625.01	
Total	10000.00	10000.00					
						Thresholds	
Traffic statistic in tester							
	Line Utilization (%)	Ethernet BW (Mbit/s)	Frame Rate (frame/s)	Frame Count			
Total TX	100.0000	9869.96	812743	290837221			
Total RX	100.0000	9869.96	812744	290837381			
Frame Type	TX Count	RX Count	Frame Size	RX Count	%		
Multicast	0	179	< 64	0	0%		
Broadcast	0	0	64	179	0%		
Unicast	290837221	290837202	65 - 127	0	0%		
Non-Unicast	0	179	128 - 255	0	0%		
Total	290837221	290837381	256 - 511	0	0%		
			512 - 1023	0	0%		
			1024 - 1518	290837202	99.9%		
			> 1518	0	0%		
			Total	290837381			
Remarks	The output utilization of each interface in AS356XC is 50%, so load is shared to all the ports equally.						

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