

Technical Bulletin 30509

Switch Configuration to Support Link Aggregation

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Abstract

This Technical Bulletin describes the general procedure needed to configure a network switch to support the Link Aggregation (LAG) feature of the xStack Storage arrays. The bulletin will only outline the steps and may not include specific switch configuration commands. Please refer to the specific switch configuration manual for details.

Introduction

D-Link allows you to group individual physical Ethernet ports into a single logical port called a link aggregate group (or “LAG”). Link aggregation is a way to combine (or “aggregate”) multiple data ports in parallel to act as a single logical connection with increased bandwidth using static link aggregation. Combining two or more data ports increases the overall bandwidth capability between the xStack Storage array and your switch creates resilient and redundant links. These capabilities are suited for demanding applications that run in high-performance environments, such as servers in enterprises, Web servers, and intranet servers gain from the high-bandwidth capabilities of link aggregation.

Link Aggregation also reduces the number of ports available for connection to external devices. Link aggregation thus implies a trade-off between port usage and additional bandwidth for a given device pair.

XStack Storage arrays do not support any dynamic port aggregation protocol such as LACP therefore requiring all switches to be **manually** configured. It is critical the switch is configured properly to support non-protocol or vendor specific link aggregation. Unreliable operation will occur when a switch is NOT configured to support a LAG.

Resolution

Switch manufacturers support configuration through a variety of methods including a GUI, a command line interface or using a serial port. Grouping of ports can be referred to as link aggregation, port aggregation or trunking depending upon the switch vendor. Regardless, the vendor provides a configuration method so the switch understands grouped ports. The following pages outline link aggregation configuration commands from different switch vendors. Please refer to the appropriate switch manual for details.

Cisco

For details refer to the section on Configuring EtherChannels in the appropriate Cisco manual.

This example shows how to configure an EtherChannel. It assigns two ports as static-access ports to channel 1 with the ON mode:

```
Switch# configure terminal
Switch(config)# interface range gigabitethernet0/1 -2
Switch(config-if-range)# switchport mode access
Switch(config-if-range)# channel-group 1 mode on
Switch(config-if-range)# end
```

Dell

For details refer to Link Aggregation in the appropriate Dell manual.

Command Line Interface example:

Create names for 2 port channel:

```
console# configure
console(config)# interface port-channel 1
console(config-if-ch1)# description lag_1
console(config-if-ch1)# exit
console(config)# interface port-channel 2
console(config-if-ch2)# description lag_2
console(config-if-ch2)# exit
```

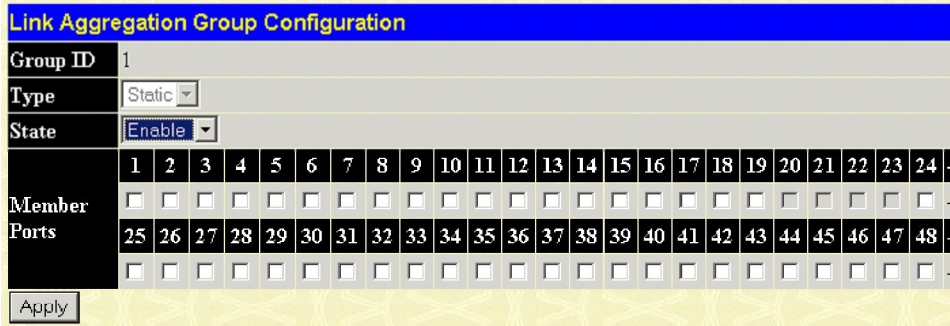
Add the Physical Ports to the Port-Channels:

```
console(config)# interface ethernet 1/g2
console(config-if-1/g2)# channel-group 1 mode auto
console(config-if-1/g2)# exit
console(config)# interface ethernet 1/g3
console(config-if-1/g3)# channel-group 1 mode auto
console(config-if-1/g3)# exit
console(config)# interface ethernet 1/g8
console(config-if-1/g8)# channel-group 2 mode auto
console(config-if-1/g8)# exit
console(config)# interface ethernet 1/g9
console(config-if-1/g9)# channel-group 2 mode auto
console(config-if-1/g9)# exit
```

D-Link

For details refer to Link Aggregation in the appropriate D-Link manual.

Link Aggregation Group Configuration window shown below:



Parameter Description

- State:** Trunk groups can be toggled between *Enabled* and *Disabled*.
- Type:** The type of port trunking supported by the DGS-3048 is Static.
- Members Port:** Choose up to 8 members to form a trunked group.

After setting the previous parameters, click **Apply** to allow your changes to be implemented. Successfully created trunk groups will be show in the Current Trunking Group Entries table.

HP ProCurve

For details refer to Port Trunking in the appropriate HP ProCurve manual. This example uses ports C4 – C7 to create a 4 port non-protocol static trunk group with the group name of **Trk2**.
 ProCurve(config)# trunk c4-c6 trk2 trunk

NetGear

For details refer to Link Aggregation in the appropriate NetGear manual.

Create a LAG

```
(Netgear Switch) #config
(Netgear Switch) (Config)#port-channel lag_10
Netgear Switch) (Config)#exit
```

Add Ports to the LAG

```
(Netgear Switch) #config
(Netgear Switch) (Config)#interface 0/2
(Netgear Switch) (Interface 0/2)#addport 1/1
(Netgear Switch) (Interface 0/2)#exit
(Netgear Switch) (Config)#interface 0/3
(Netgear Switch) (Interface 0/3)#addport 1/1
(Netgear Switch) (Interface 0/3)#exit
(Netgear Switch) (Config)#exit
```

Enable the LAG

```
(Console) #config
(Console) (Config)#port-channel adminmode all
(Console) (Config)#exit
```