

Synology®

How to Replace Fan for 2 bay DiskStation



Revision 1.0

THIS DOCUMENT CONTAINS PROPRIETARY
TECHNICAL INFORMATION WHICH IS THE
PROPERTY OF SYNOLOGY INCORPORATED AND
SHALL NOT BE DISCLOSED TO OTHERS IN
WHOLE OR IN PART, REPRODUCED, COPIED, OR
USED AS THE BASIS FOR DESIGN,
MANUFACTURING, OR SALE OF APPARATUS
WITHOUT WRITTEN PERMISSION OF SYNOLOGY
INCORPORATED.

How to Replace Fan for 2 bay DiskStation

Table of Content

1. Introduction.....	3
1.1 Applied Models & Required Components	3
1.2 Required Tools	3
2. Replace for DS214play, DS214, DS213+, DS213, DS212+, DS212.....	4
2.1 Dismantle the defective fan module	4
2.2 Install the replacement fan module	13
3. Replace for DS214se, DS213air, DS213j, DS212j, DX213	21
3.1 Dismantle the enclosure	21
3.2 Replace the fan module for DS214se, DS213j.....	27
3.3 Replace the fan module for DS213air, DS212j, DX213.....	37
3.4 Restore the enclosure.....	41

Revision History

Revision Number	Date of Issue	Summary of Change	By
v.1.0	2014/10/14	Initial version	Dennis Tang

How to Replace Fan for 2 bay DiskStation

1. Introduction

This SOP explains about the detailed steps for replacing system fan on Synology's 2 bay DiskStation products.

1.1 Applied Models & Required Components

- Fan module of the DiskStation model for replacing:

Required Module	Item Code	Description	Applied Model
Fan 92*92*25_1	13-060901139	3PIN DC12V 2510 W/ 120mm 1800RPM FD129225LL-N(1A3H) PB_FREE	DS214 DS214play DS214se DS213+ DS213air DS213 DS213j DS212+ DS212 DS212j DX213



▲ Fan 92*92*25_1

Note: For DS214+, refer to the SOP for DS71x series.

Note: All replacement fans are delivered with NO protecting net.

1.2 Required Tools

- Screw Driver "+" Type: Suggested Bit Size PH#2
- Aluminum Foil: 1pc needed for one DS unit (DS214se, DS213air, DS213j, DS212j, DX213)
Synology P/N: 13-050000010
Description: Conductive Tape (導電膠帶) AL 10*40mm T0.05 CAL-005
- Anti-static / Cotton Gloves

How to Replace Fan for 2 bay DiskStation

2. Replace for DS214play, DS214, DS213+, DS213, DS212+, DS212

Note: *DS214play is hereunder the common example.*

2.1 Dismantle the defective fan module

2.1.1 Remove the front cover. (Fig. 1)



Fig. 1

2.1.2 Remove the both disk trays from the HDD chassis. (Fig. 2)



Fig. 2

How to Replace Fan for 2 bay DiskStation

2.1.3 The left cover clamps to the enclosure frame with the two (2) tenons on its interior (Marked by the red rectangle). (Fig. 3)

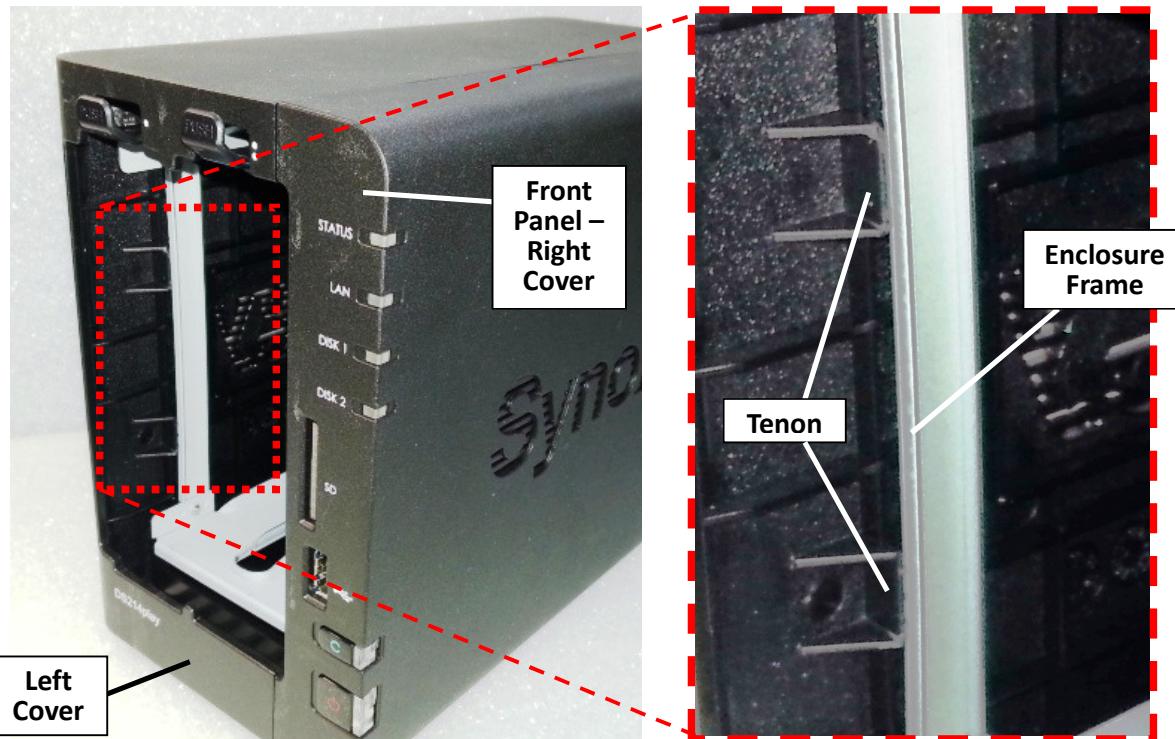


Fig. 3

Put your four fingers other than the thumb on the enclosure frame. (Fig. 4)

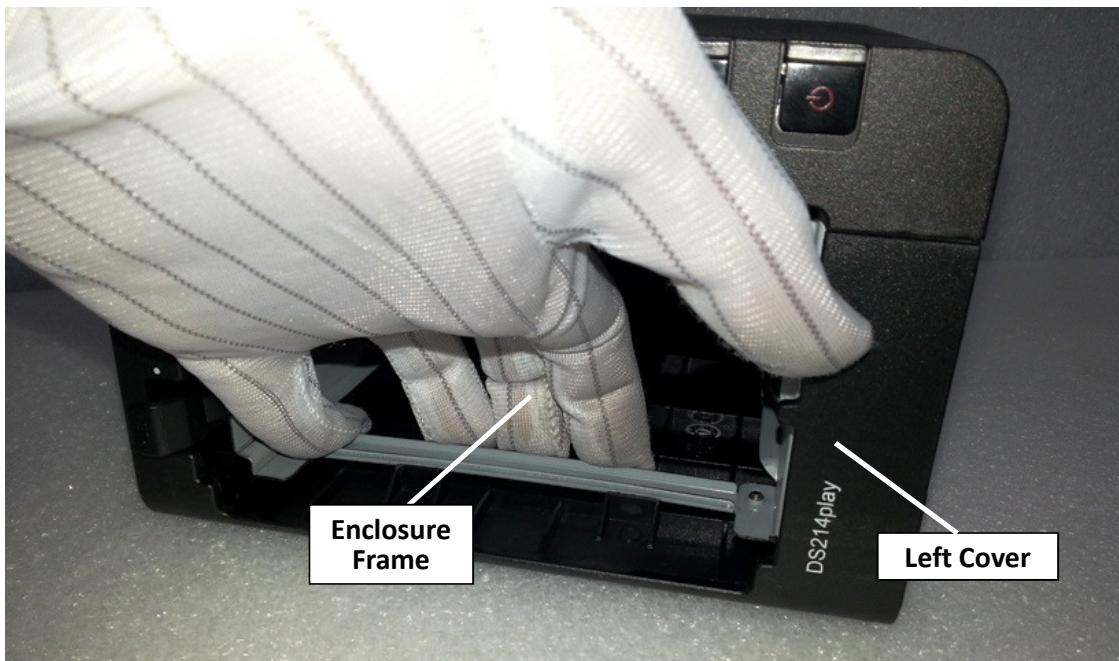


Fig. 4

How to Replace Fan for 2 bay DiskStation

- 2.1.4 Put your thumb on the outer edge of the left cover. Then grab the enclosure frame and push the left cover at the same time to make the two tenons bypassed the enclosure frame. Separate the left cover and the enclosure frame/right cover. (Fig. 5)

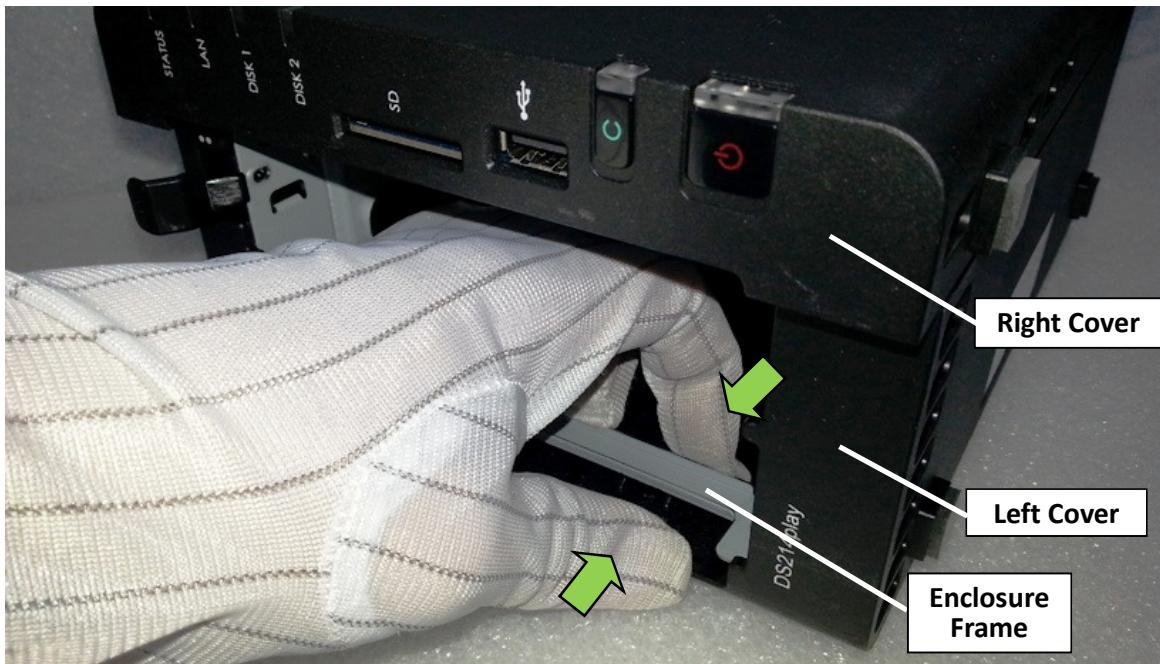


Fig. 5

Fig. 6 & 7 show the status before and after the tenons bypass the enclosure frame.

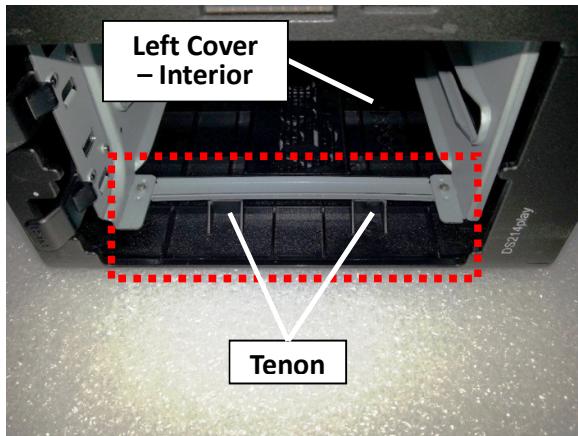


Fig. 6 – Before Bypassing

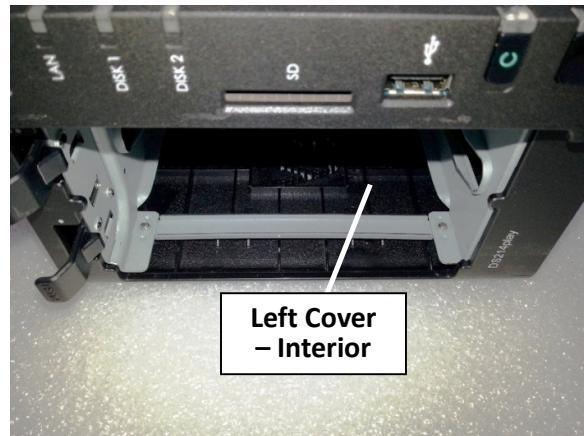


Fig. 7 – After Bypassing

How to Replace Fan for 2 bay DiskStation

Fig. 8 & 9 show the status before and after the left cover and the enclosure frame/right cover are separated.

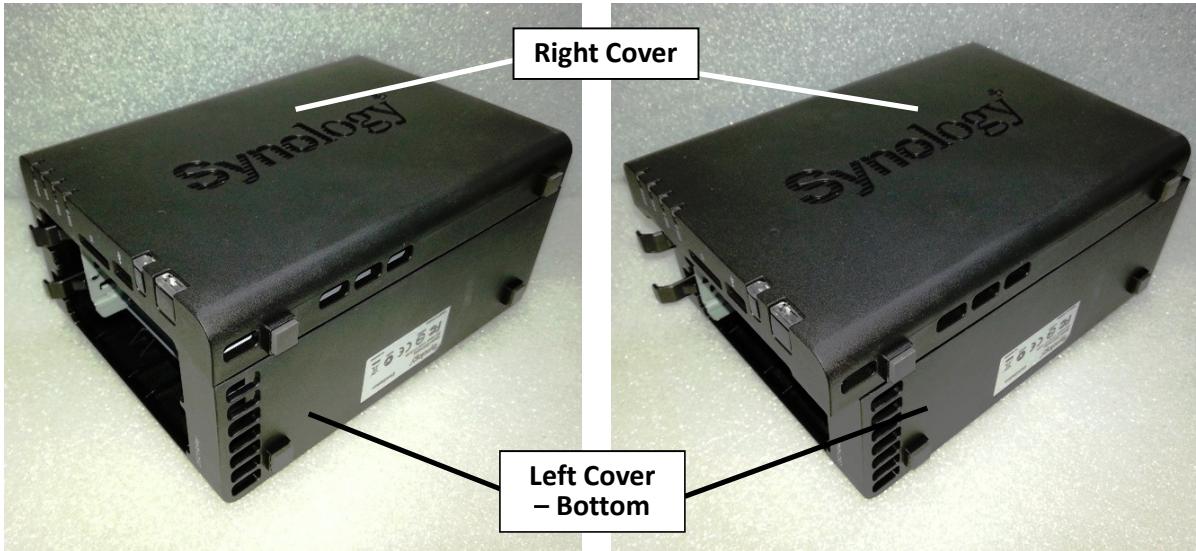


Fig. 8 – Before Separating

Fig. 9 – After Separating

2.1.5 Put the right cover side down. Then remove the left cover from the HDD chassis.
(Fig. 10)

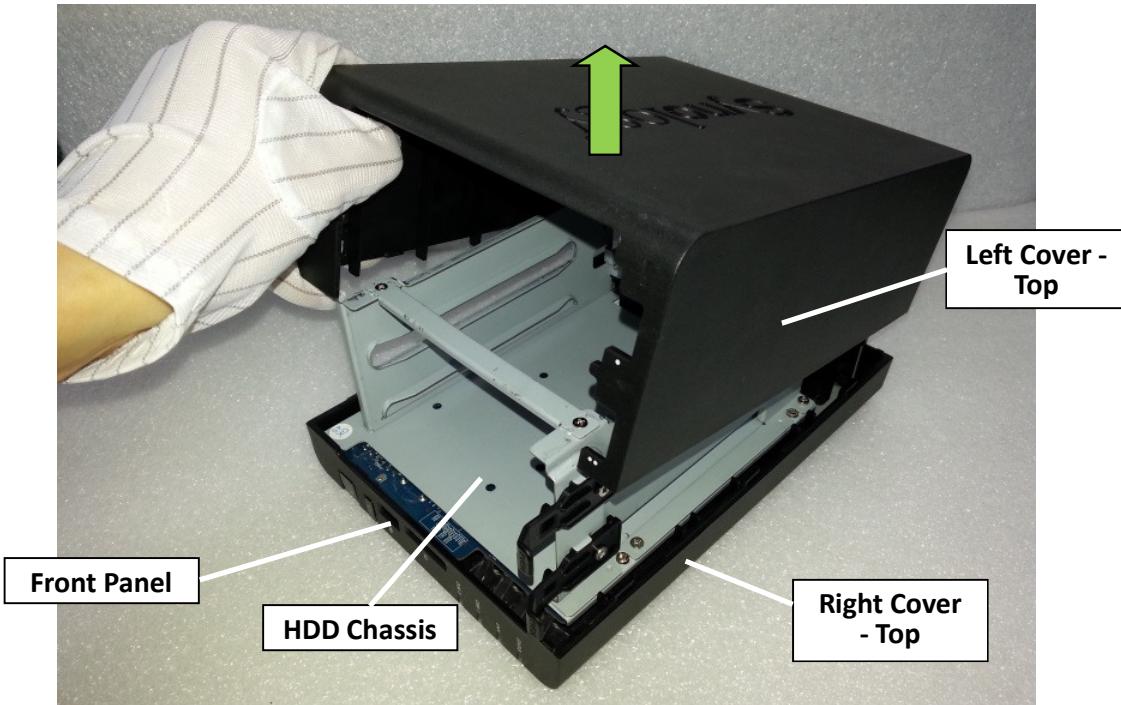


Fig. 10

How to Replace Fan for 2 bay DiskStation

Fig. 11 shows the status after the left cover and the HDD chassis are separated.

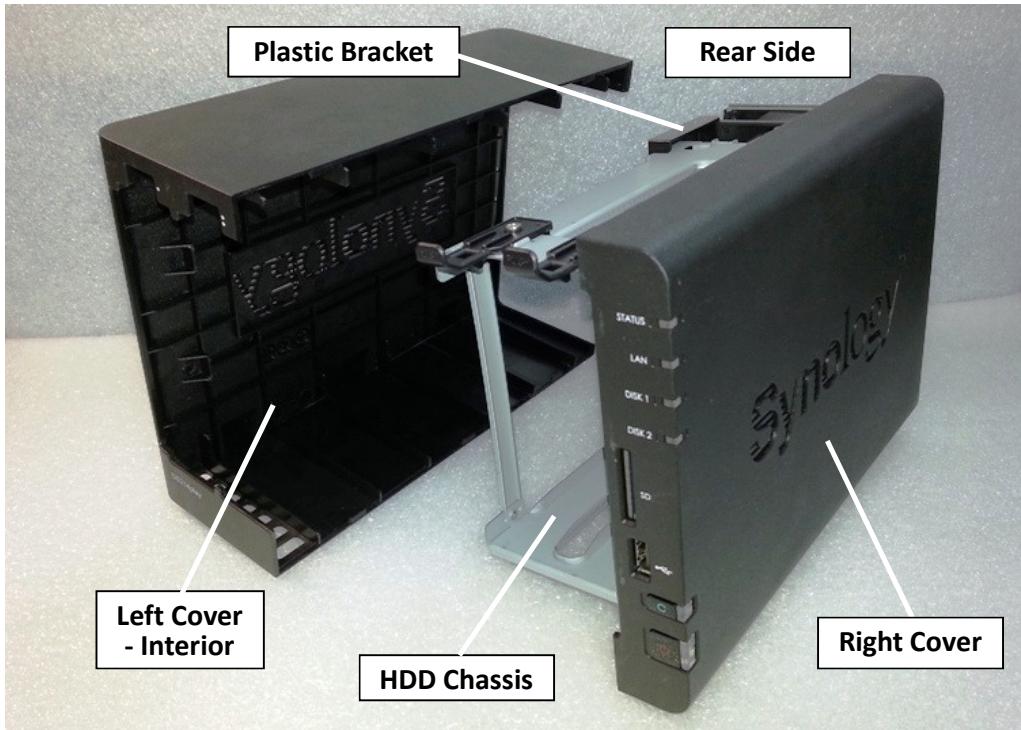


Fig. 11

- 2.1.6 Release the two (2) screws on the enclosure frame (Marked by the red circles) then remove the plastic bracket which joins the defective fan and the HDD chassis. (Fig. 12)

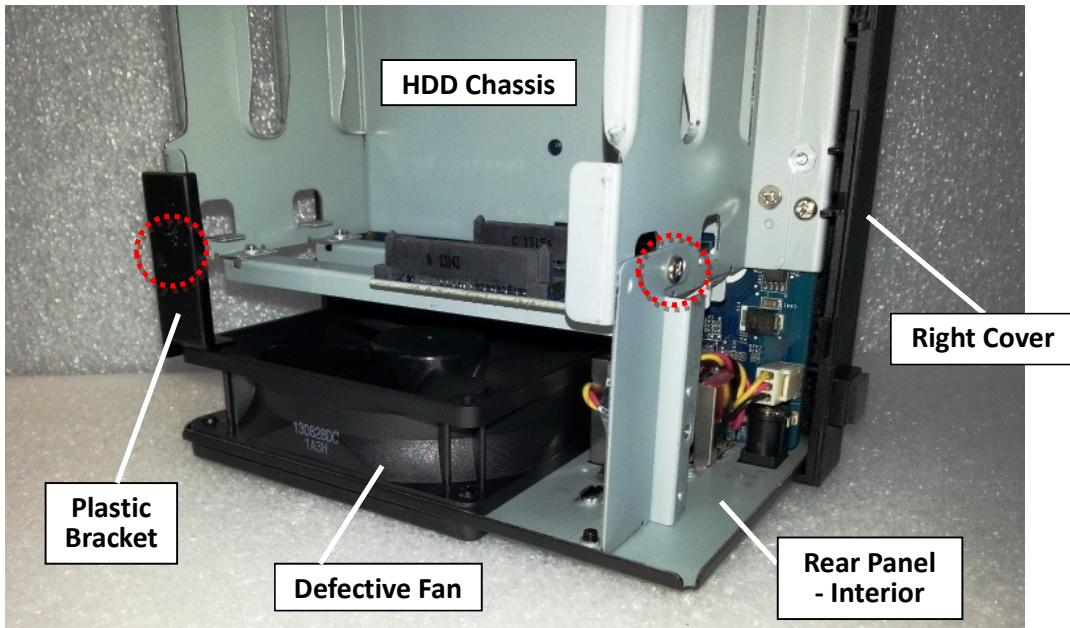


Fig. 12

How to Replace Fan for 2 bay DiskStation

2.1.7 Release the four (4) screws on the enclosure frame (Marked by the red circles).
(Fig. 13 & 14)

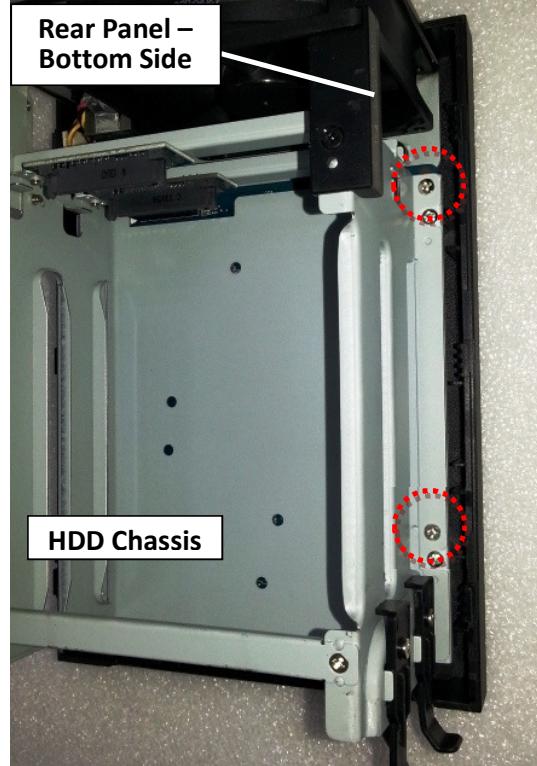
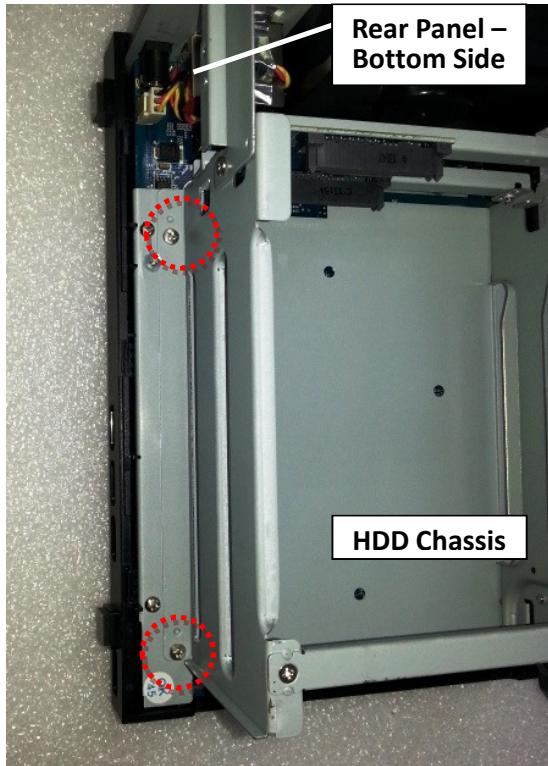


Fig. 13 – Right Side

Fig. 14 – Left Side

2.1.8 Then remove the HDD chassis from the enclosure. (Fig. 15)

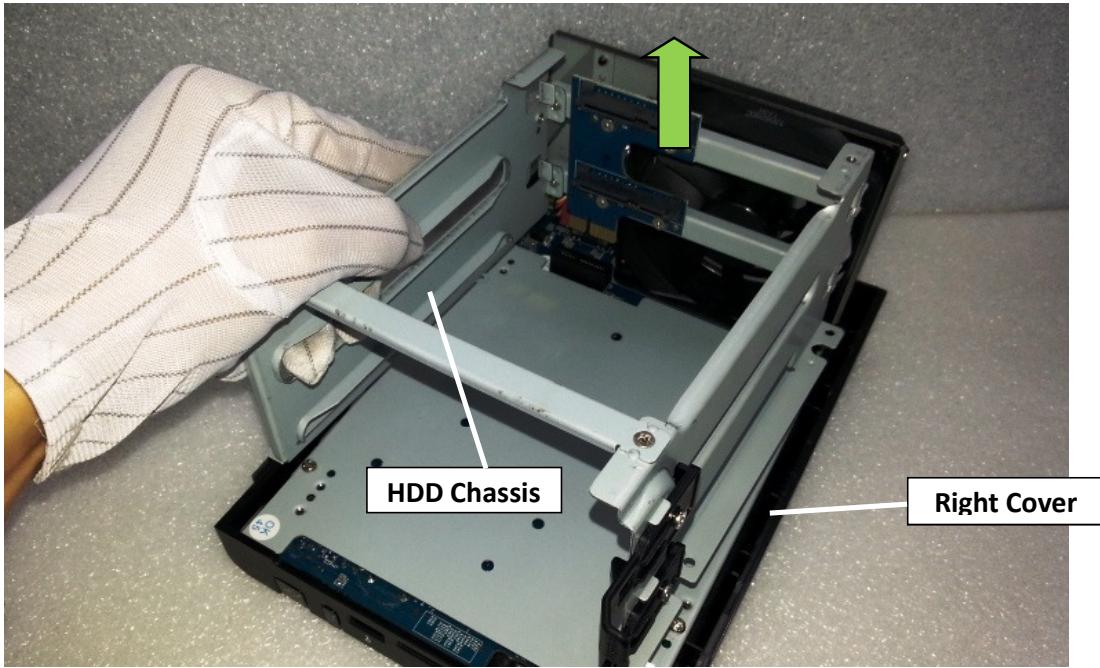


Fig. 15

How to Replace Fan for 2 bay DiskStation

Fig. 16 shows the status after the HDD chassis is removed from the enclosure.



Fig. 16

- 2.1.9 Remove the aluminum foil (Marked by the red rectangle) from the interior of the rear panel. (Fig. 17)

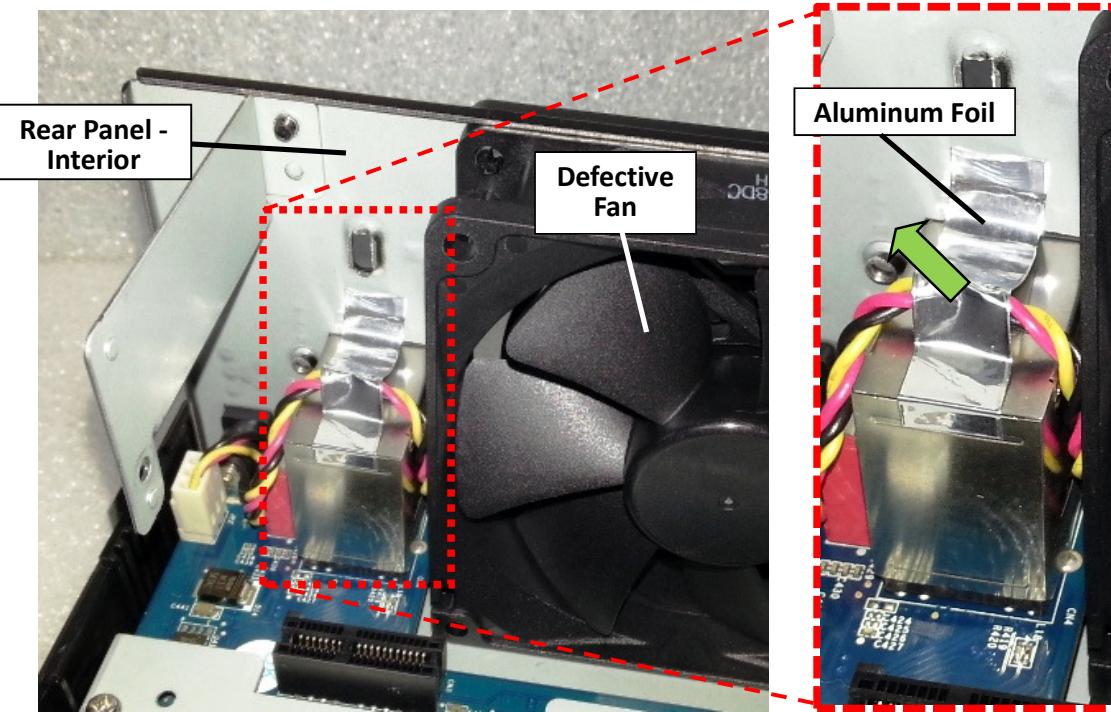


Fig. 17

How to Replace Fan for 2 bay DiskStation

- 2.1.10 Unplug the fan cable connector (Marked by the red rectangle) which attaches to the motherboard. (Fig. 18)

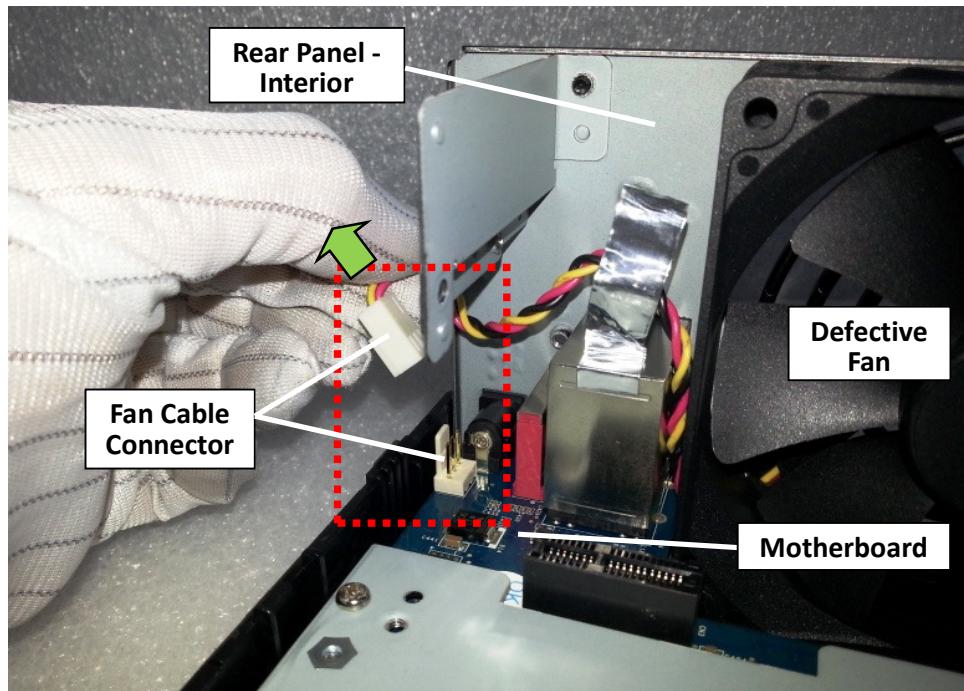


Fig. 18

- 2.1.11 Release the four (4) screws on the fan panel (Marked by the red circles) which fix the defective fan. (Fig. 19)



Fig. 19

How to Replace Fan for 2 bay DiskStation

2.1.12 Remove the protecting net of the defective fan from the rear panel. (Fig. 20)



Fig. 20

2.1.13 Remove the defective fan module from the interior of the rear panel. (Fig. 21)

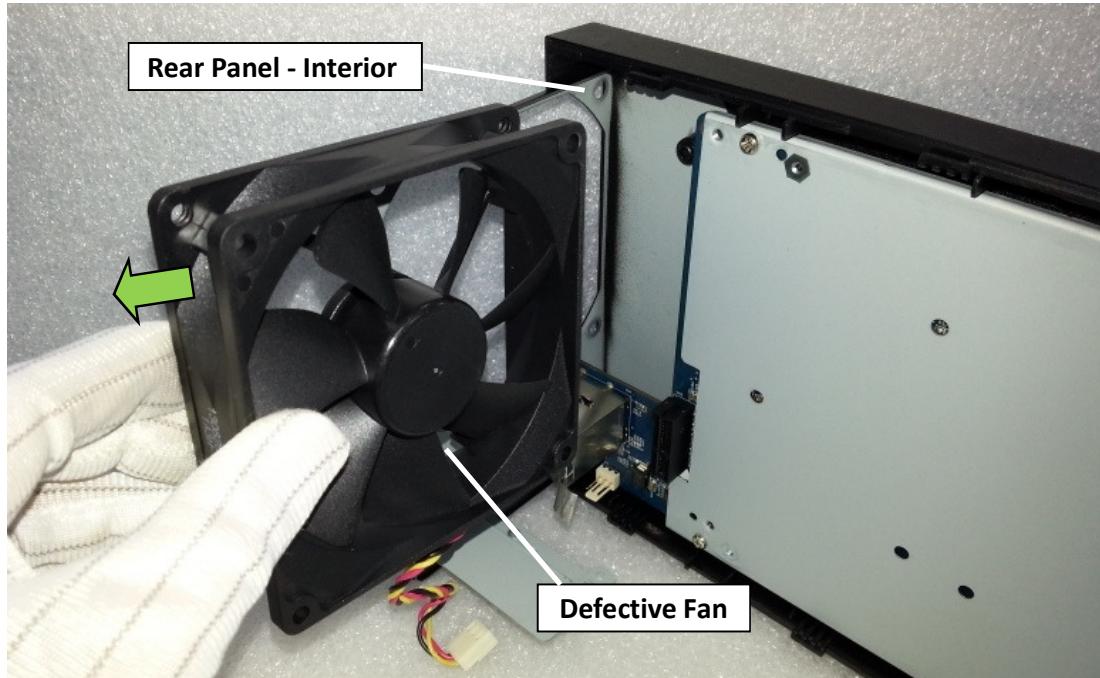


Fig. 21

How to Replace Fan for 2 bay DiskStation

2.2 Install the replacement fan module

2.2.1 Put the replacement fan module to the same location of the defective one on the interior of the rear panel. (Fig. 22)

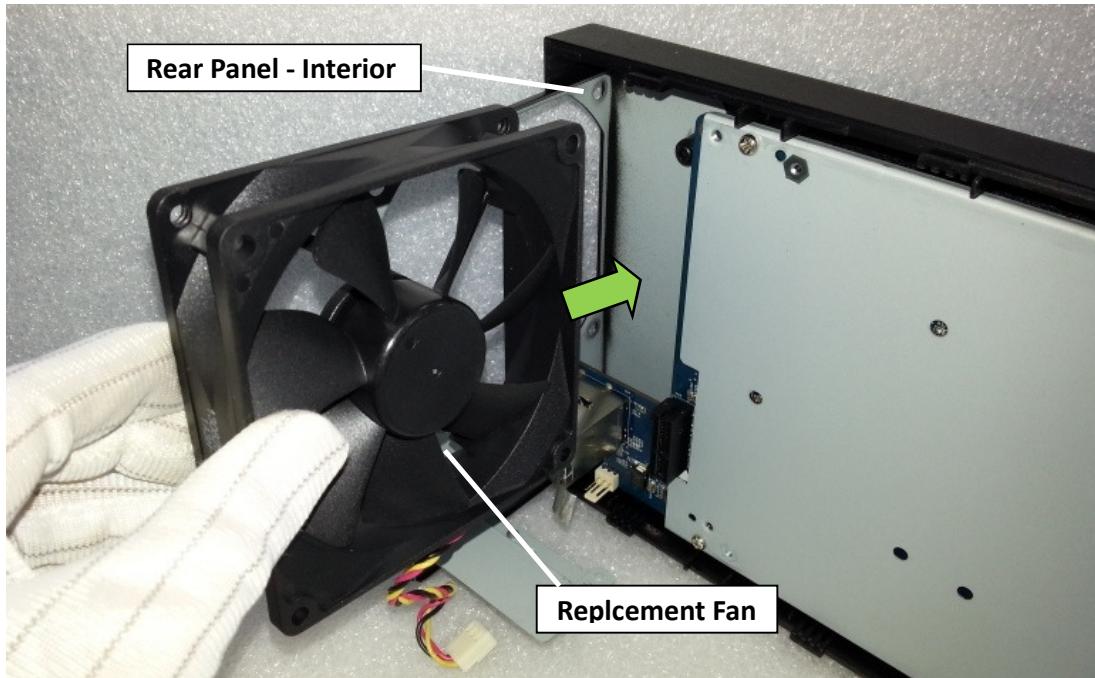


Fig. 22

2.2.2 Restore the protecting net to its original location on the rear panel. (Fig. 23)



Fig. 23

How to Replace Fan for 2 bay DiskStation

2.2.3 Fix the four (4) screws on the fan panel (Marked by the red circles) to secure the replacement fan. (Fig. 24)



Fig. 24

2.2.4 Plug the fan cable connector (Marked by the red rectangle) to the same location as of the defective fan on the motherboard. (Fig. 25)

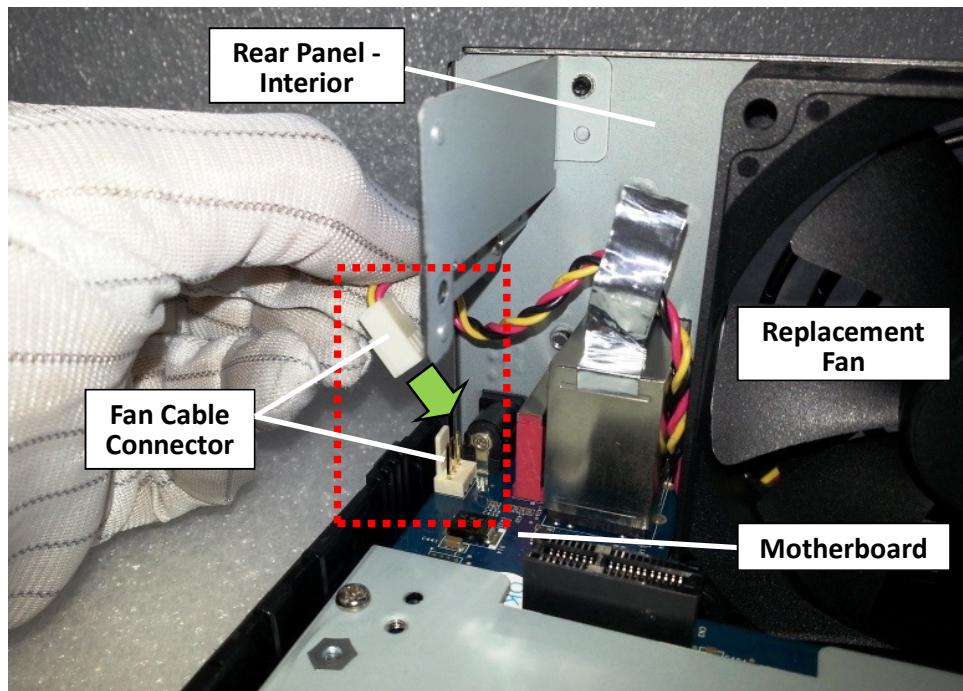


Fig. 25

How to Replace Fan for 2 bay DiskStation

2.2.5 Replace the aluminum foil with a new one on the same locations. (Fig. 26)

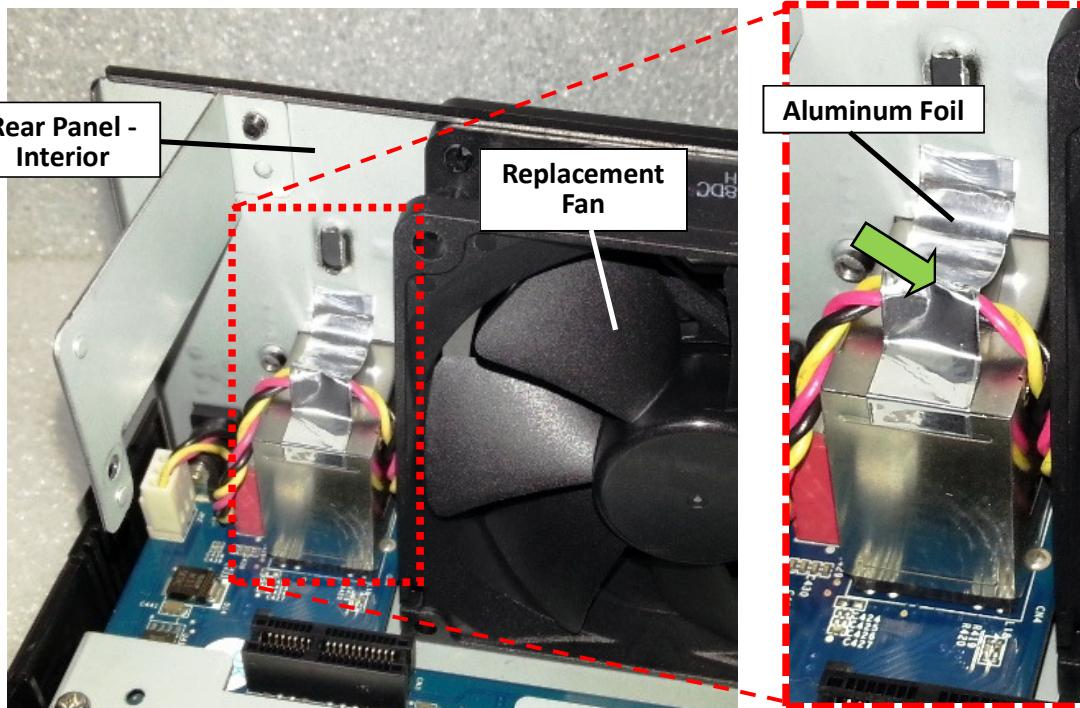


Fig. 26

2.2.6 To restore the HDD chassis into the enclosure, there are two (2) locations as follow for joining the two sides (Fig. 27):

Motherboard Side		Enclosure Side	
#1	PCI Express connector	#2	Bonding finger of the HDD backplane

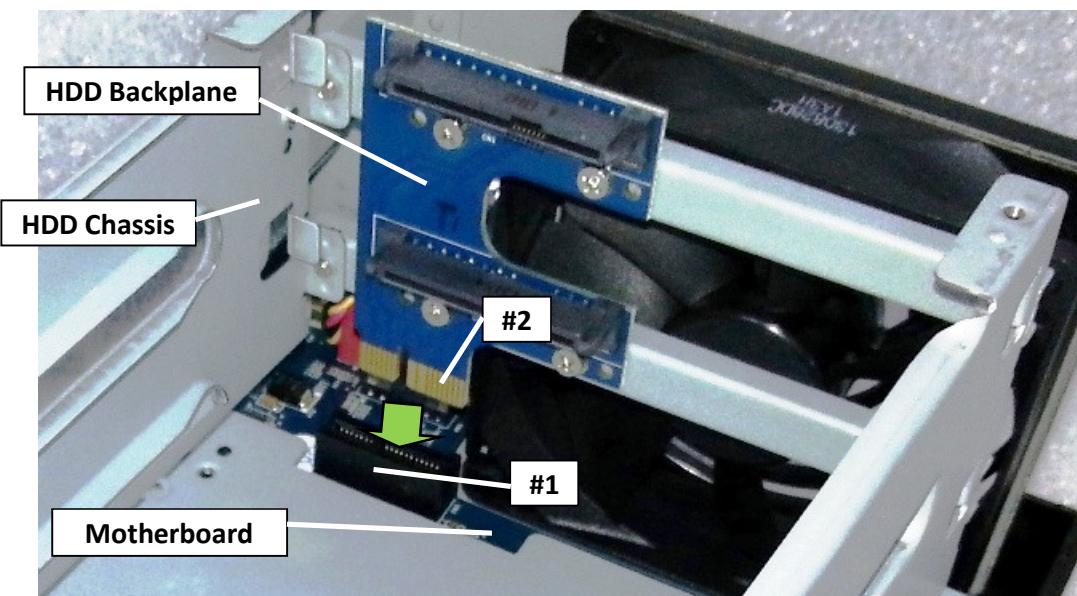


Fig. 27

How to Replace Fan for 2 bay DiskStation

Restore the HDD chassis to its original location on the enclosure. Then join them together with #2 inserted into #1 properly (Marked by the red rectangle). (Fig. 28)

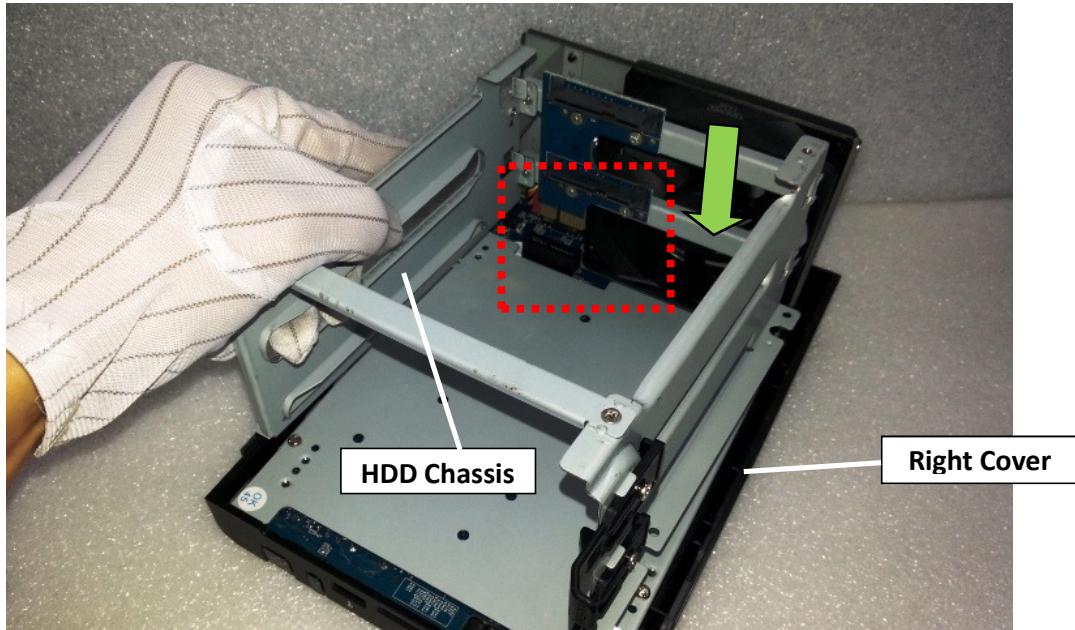


Fig. 28

2.2.7 Then fix the four (4) screws on the enclosure frame (Marked by the red circles) to secure the HDD chassis. (Fig. 29 & 30)

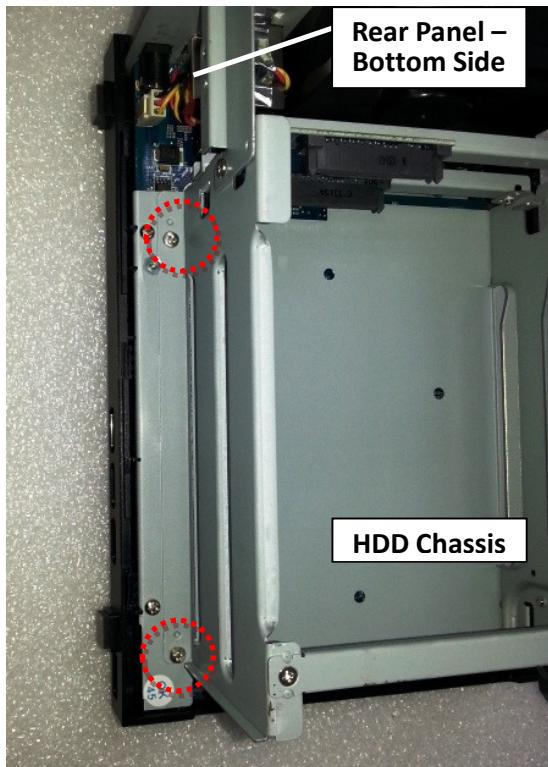


Fig. 29 – Right Side

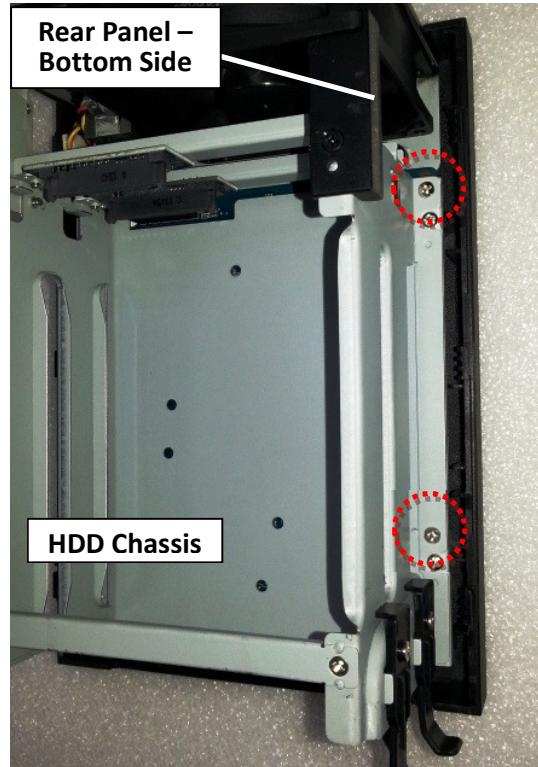


Fig. 30 – Left Side

How to Replace Fan for 2 bay DiskStation

- 2.2.8 Restore the plastic bracket to join the replacement fan and the HDD chassis. Then fix the two (2) screws (Marked by the red circles). (Fig. 31)

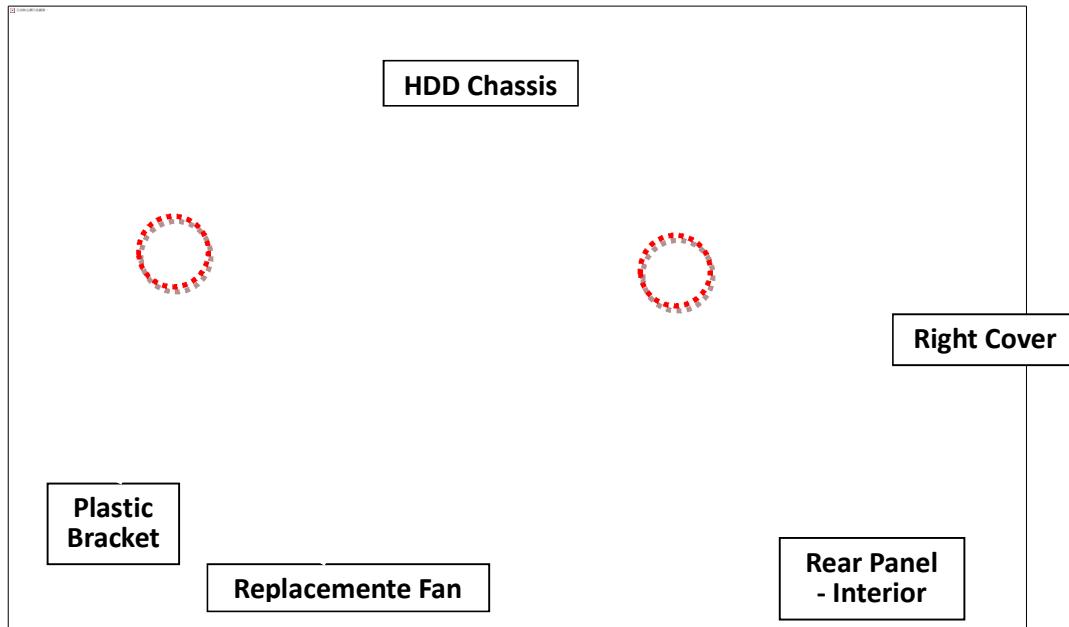


Fig. 31

- 2.2.9 Restore the left cover to its original location covering the HDD chassis. (Fig. 32)

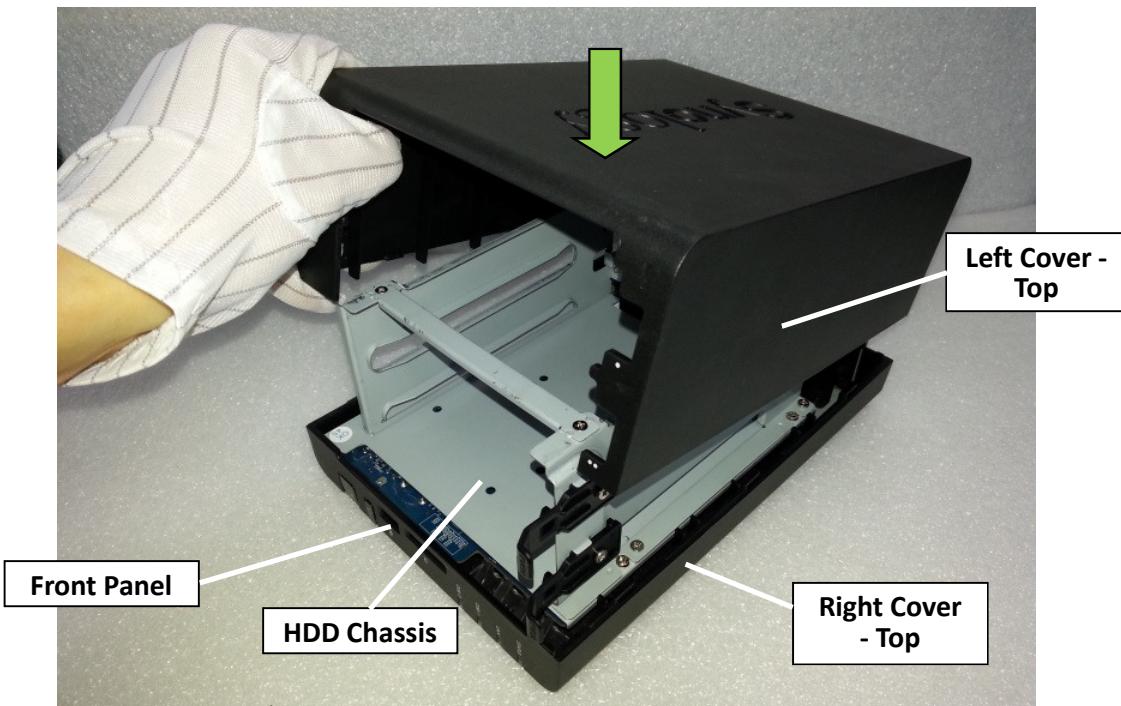


Fig. 32

How to Replace Fan for 2 bay DiskStation

2.2.10 Hold up the right cover then push the left cover to join together them until a click is heard. Make sure the both covers are joined properly. (Fig. 33)

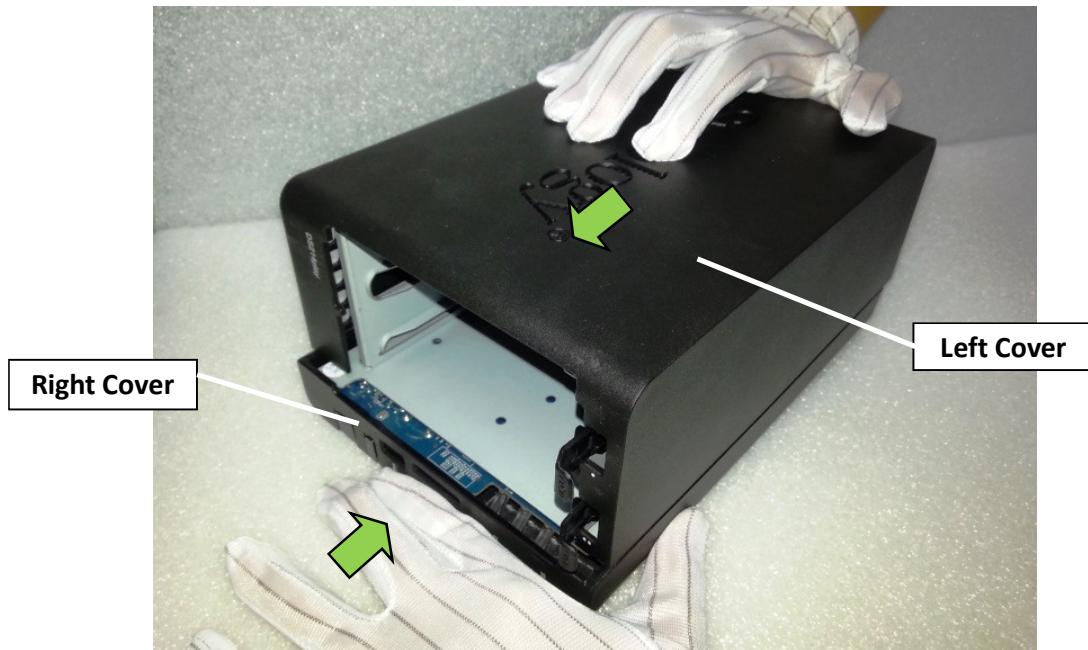


Fig. 33

Fig. 34 shows the status after the left cover and the enclosure frame are joined together.

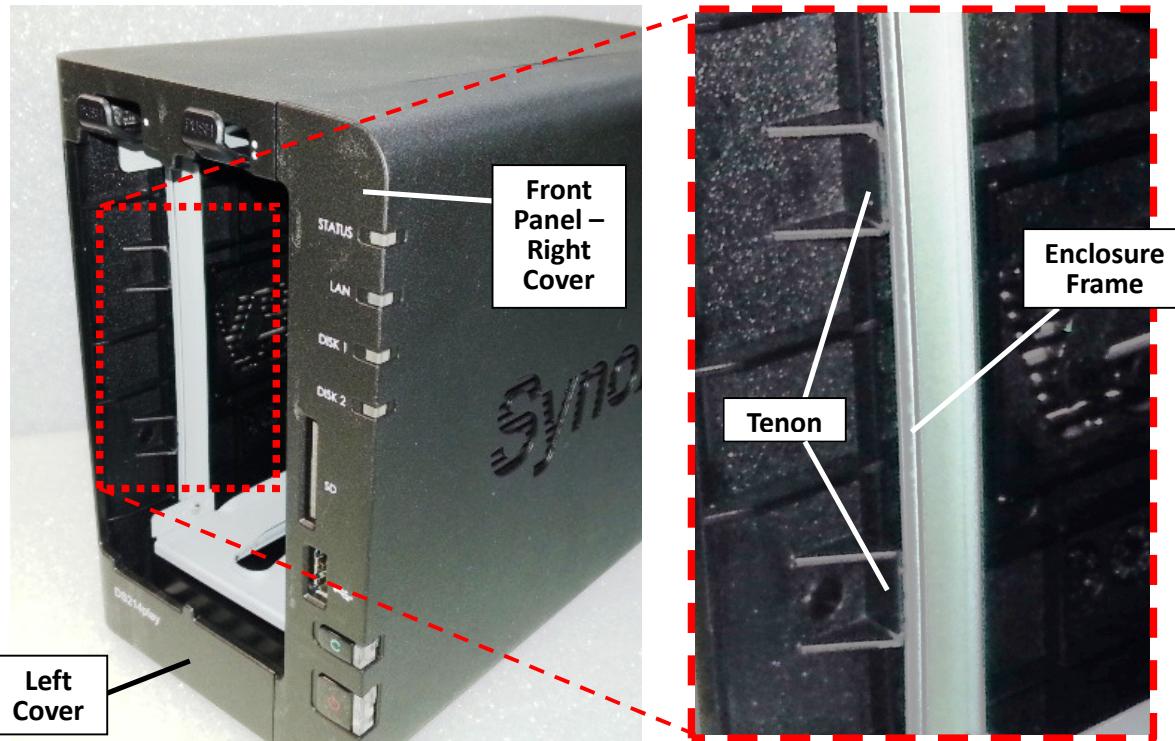


Fig. 34

How to Replace Fan for 2 bay DiskStation

Fig. 35 & 36 show the status before and after the tenons clamp to the enclosure frame.

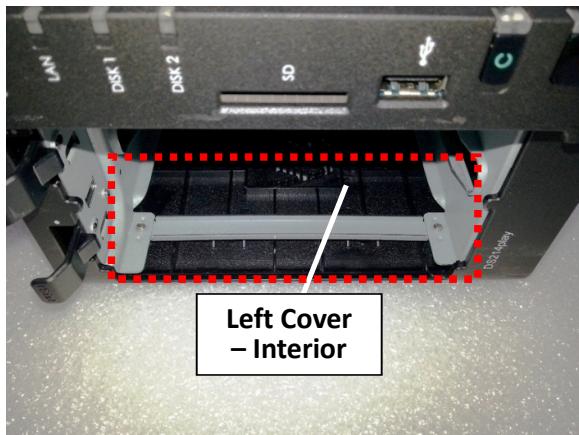


Fig. 35 – Before Joining

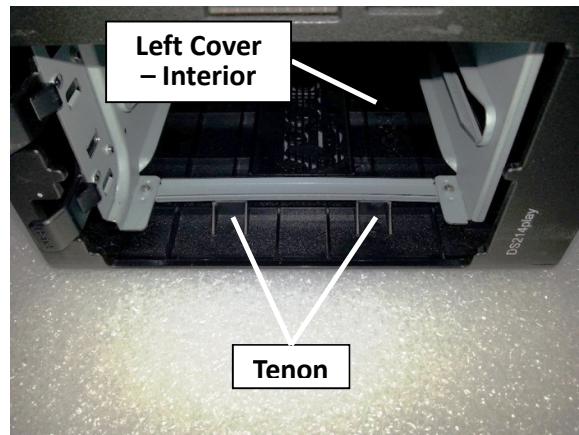


Fig. 36 – After Joining

2.2.11 Restore the both disk trays into the HDD chassis. (Fig. 37)

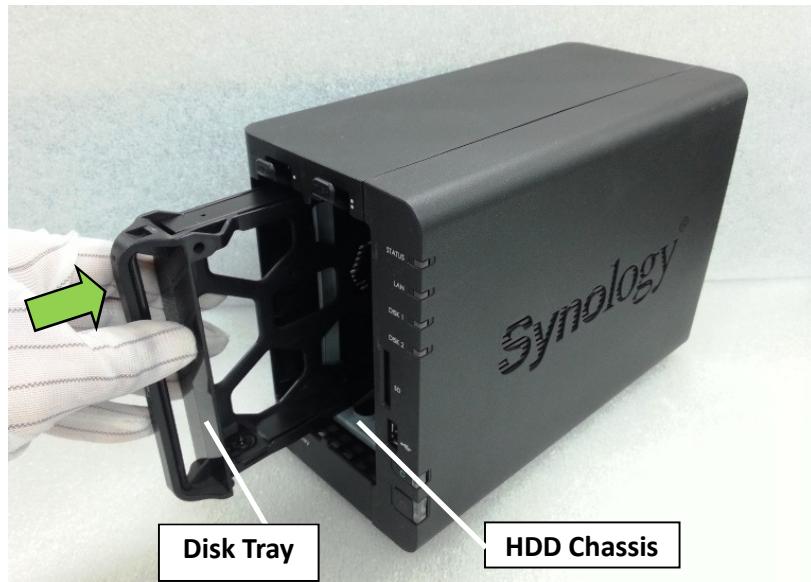


Fig. 37

How to Replace Fan for 2 bay DiskStation

2.2.12 Restore the front cover. (Fig. 38)



Fig. 38

2.3 The replacing task is completed.

How to Replace Fan for 2 bay DiskStation

3. Replace for DS214se, DS213air, DS213j, DS212j, DX213

Note: DS214se is hereunder the common example.

3.1 Dismantle the enclosure

- 3.1.1 Release the two (2) screws (Marked by the red circles) on the rear side of the right cover. (Fig. 39)

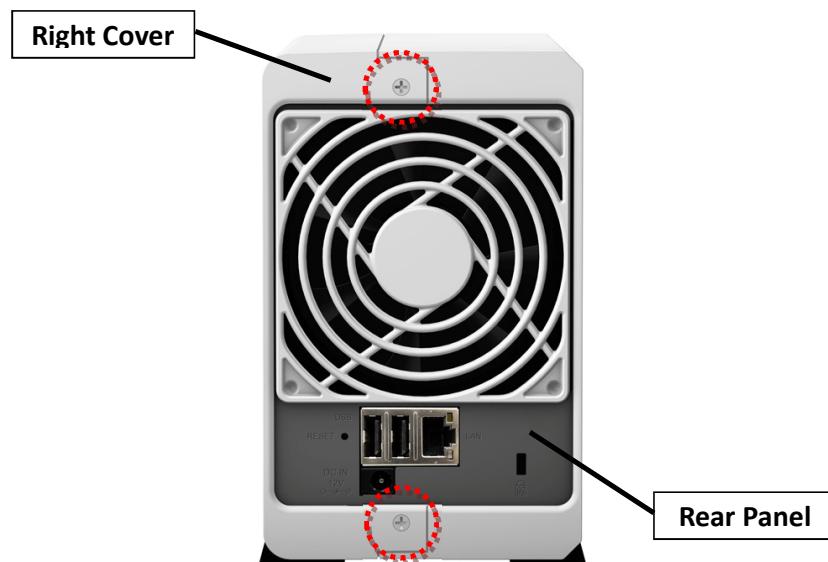


Fig. 39

How to Replace Fan for 2 bay DiskStation

3.1.2 Use your both thumbs to push the left cover (With the footpad on the right cover bottom to be the fulcrum) to separate it and the right cover. (Fig. 40 & 41)

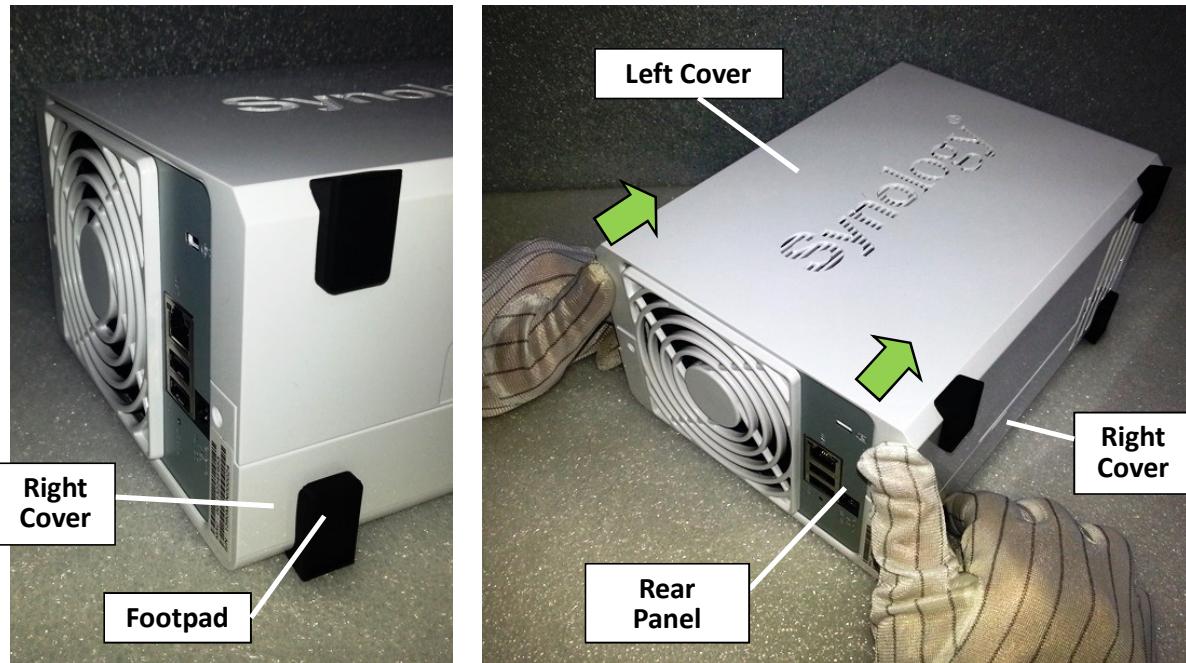


Fig. 40 – Before Separating

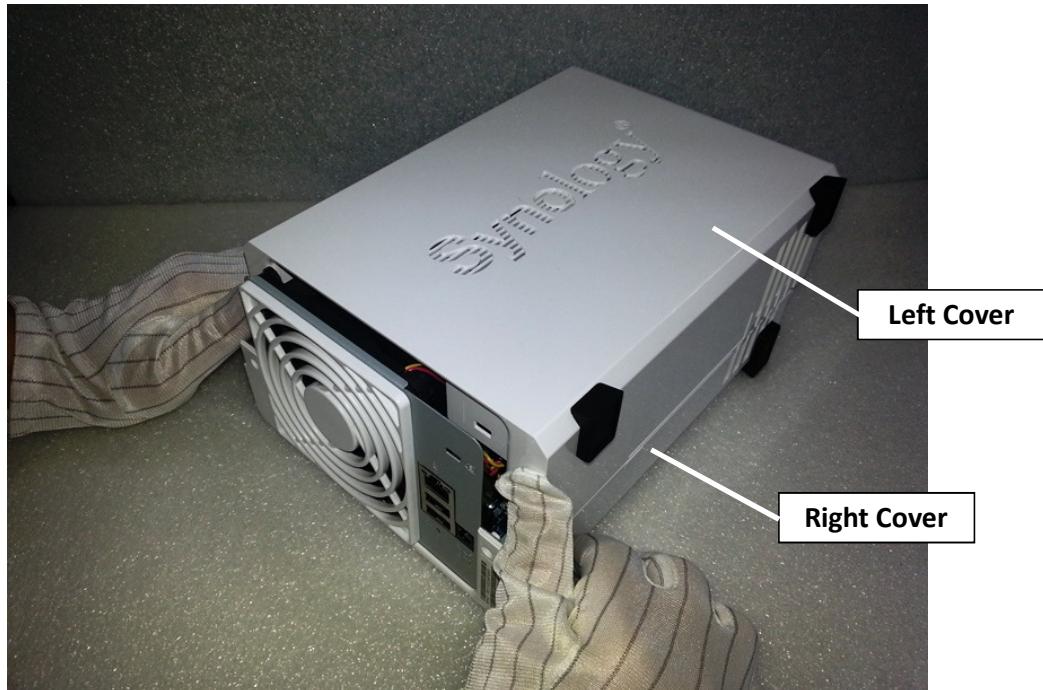


Fig. 41 – After Separating

How to Replace Fan for 2 bay DiskStation

3.1.3 Remove the left cover from the HDD chassis. (Fig. 42)

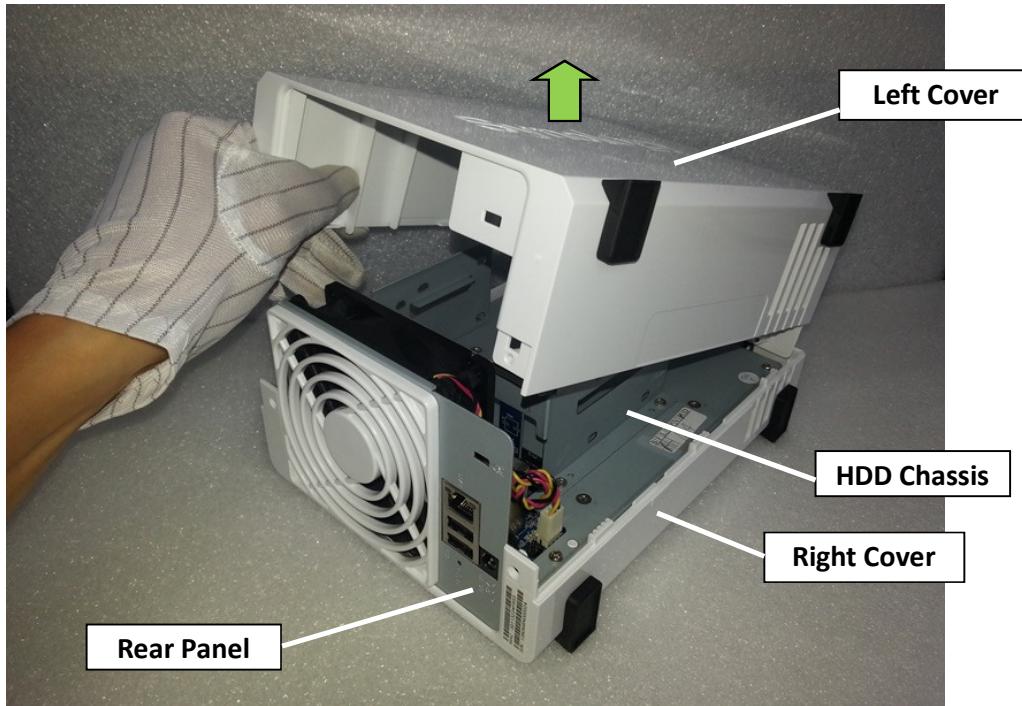


Fig. 42

Fig. 43 shows the status after the left cover and the HDD chassis are separated.

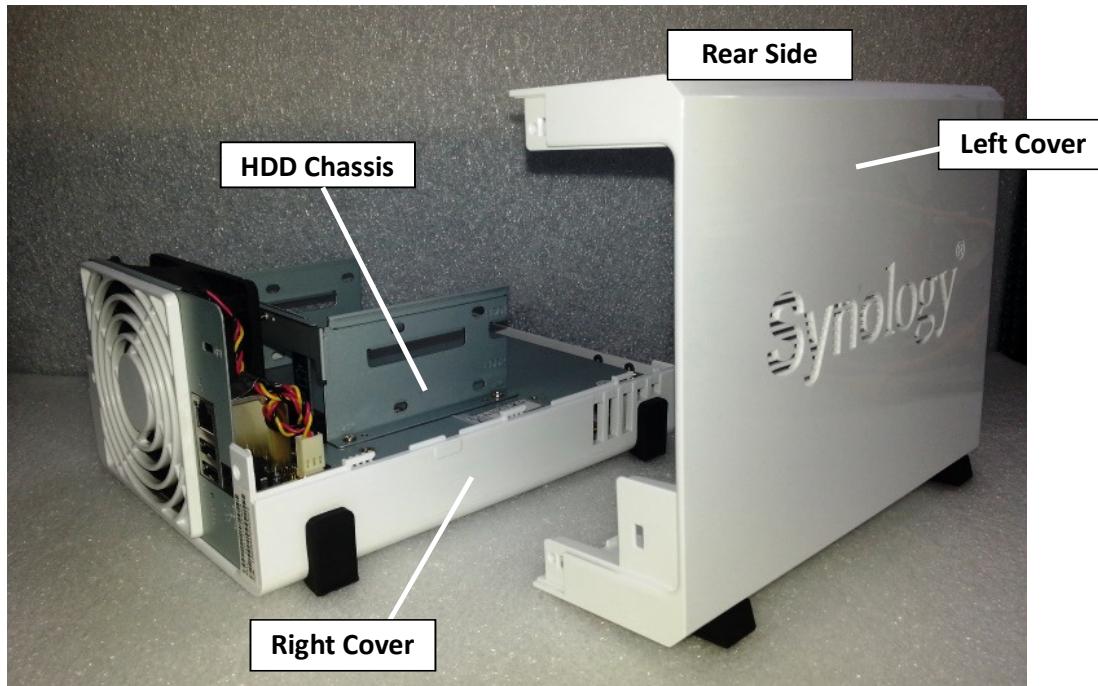


Fig. 43

How to Replace Fan for 2 bay DiskStation

3.1.4 Unplug the fan cable connector with the aluminum foil (Marked by the red rectangle) peeled off. (Fig. 44)

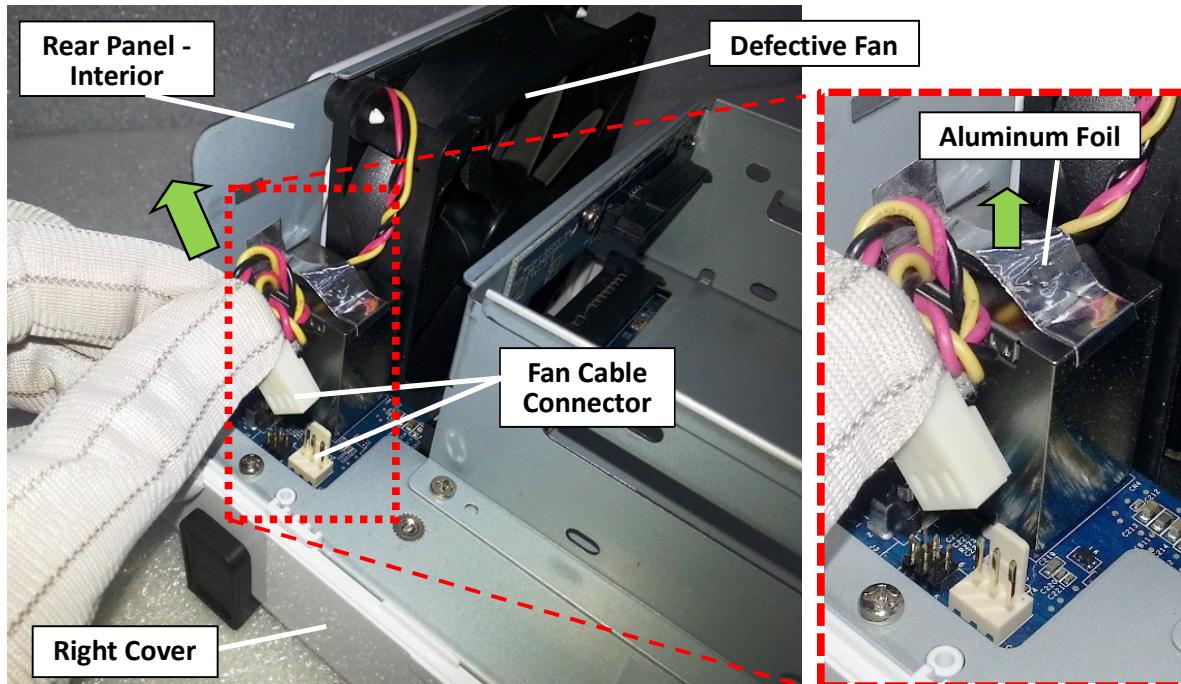


Fig. 44

Fig. 45 shows the status after the above-mentioned is completed.

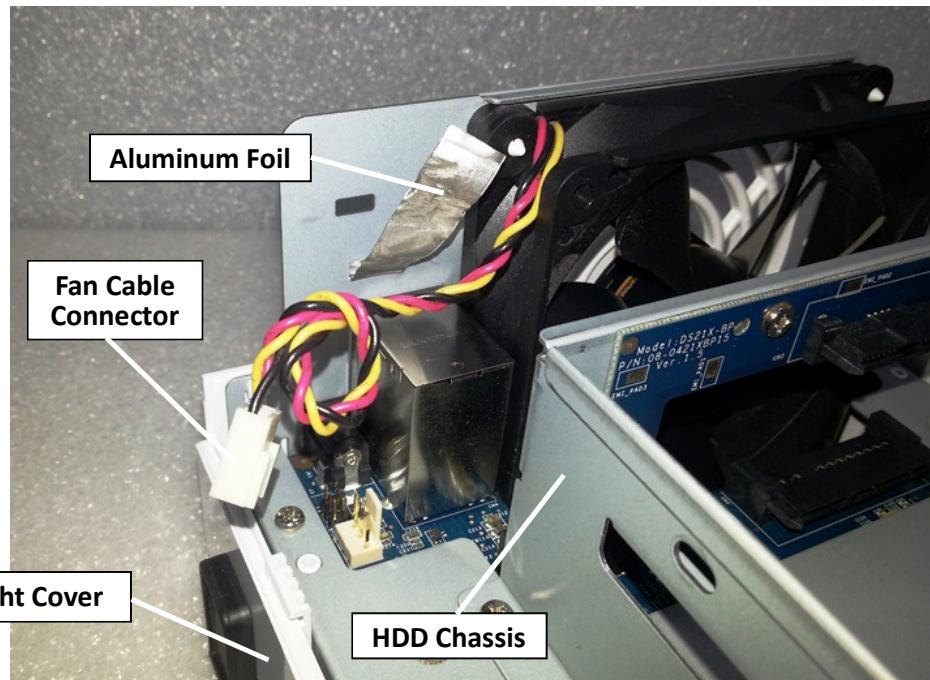


Fig. 45

How to Replace Fan for 2 bay DiskStation

- 3.1.5 Release the four (4) screws (Marked by the red circles). (Fig. 46)

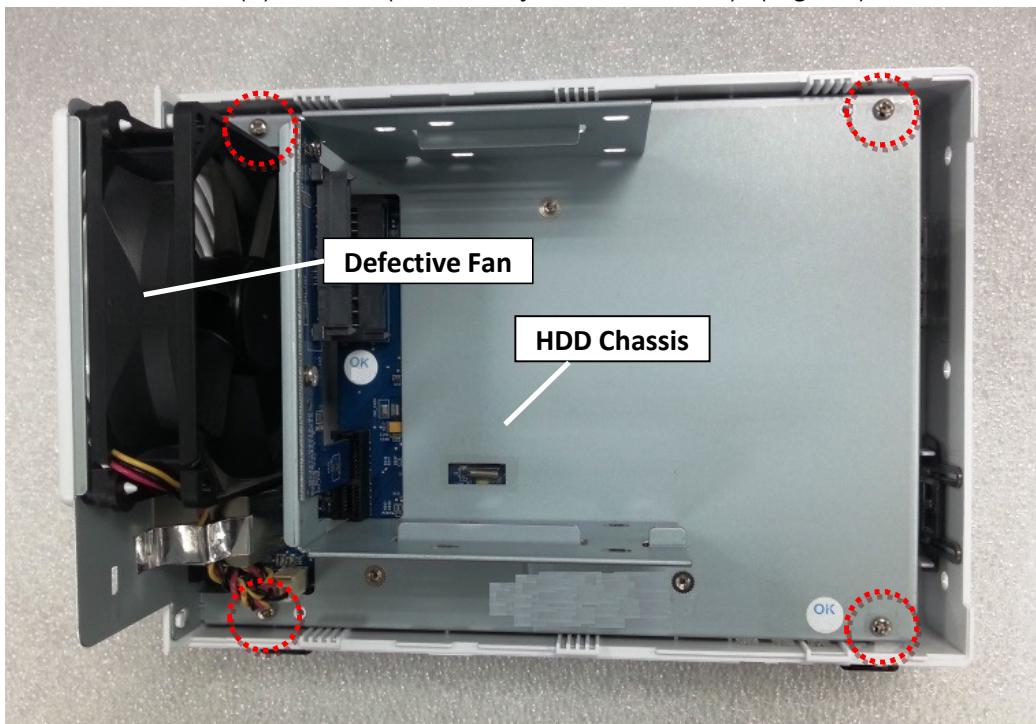


Fig. 46

- 3.1.6 Then remove the HDD chassis from the right cover. Note that at this moment on its bottom side there is a power button cable to connect with the power button board (Marked by the red rectangle). (Fig. 47)

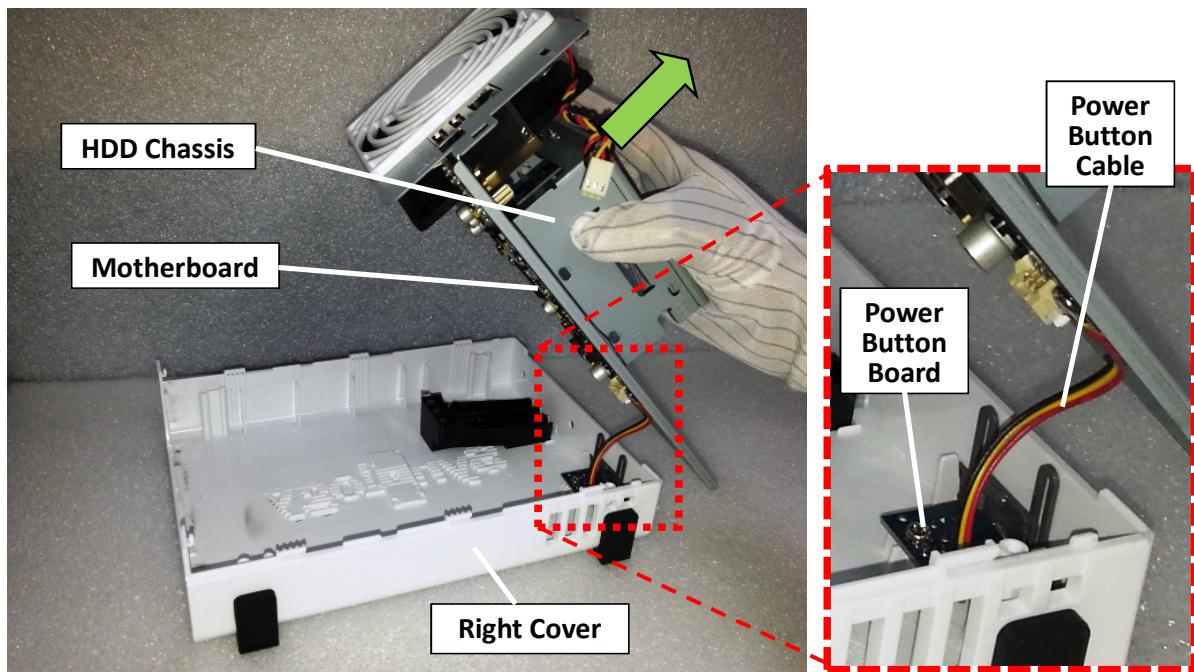


Fig. 47

How to Replace Fan for 2 bay DiskStation

- 3.1.7 Flip up the HDD chassis up side down (With the motherboard faces upwards). Remove the tape then unplug the power button cable connector (Marked by the red rectangle) which attaches to the motherboard. HDD chassis can be removed from the right cover. (Fig. 48)

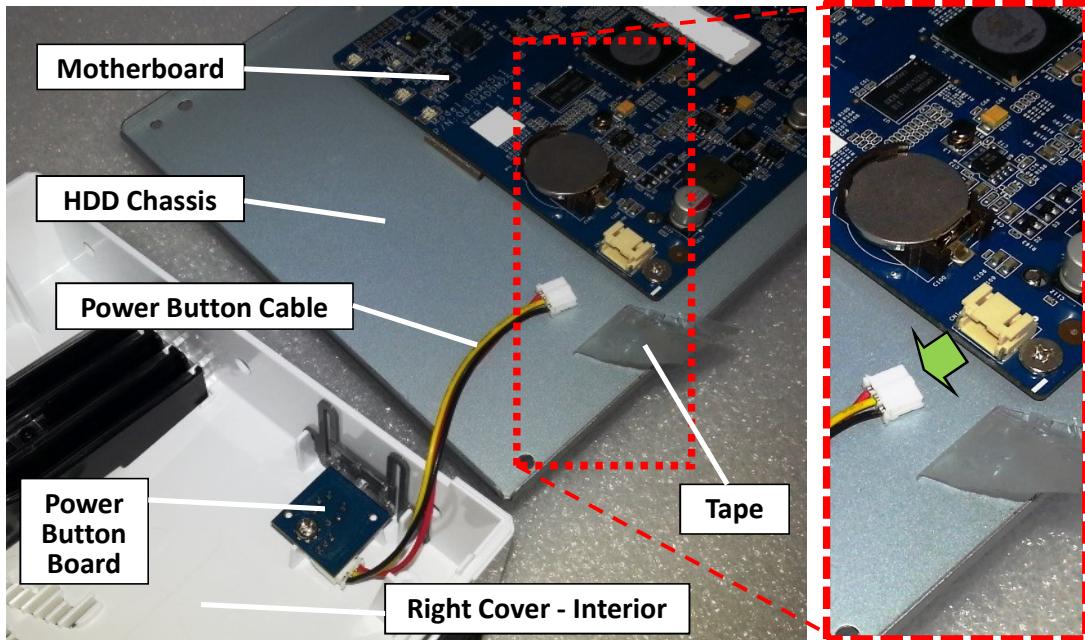


Fig. 48

Fig. 49 shows the status after the HDD chassis is removed from the right cover.

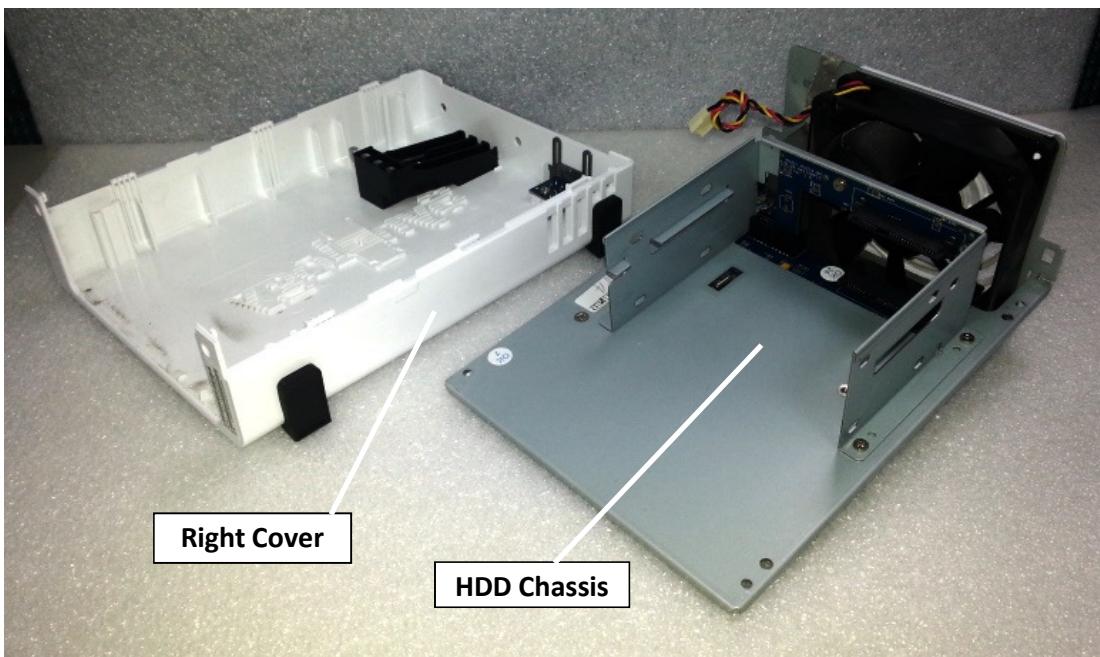


Fig. 49

How to Replace Fan for 2 bay DiskStation

3.2 Replace the fan module for DS214se, DS213j

- 3.2.1 Remove the four (4) rubber rivet locks (Marked by the red circles) which fix the defective fan on the interior of the rear panel. (Fig. 50, 51 and 52)

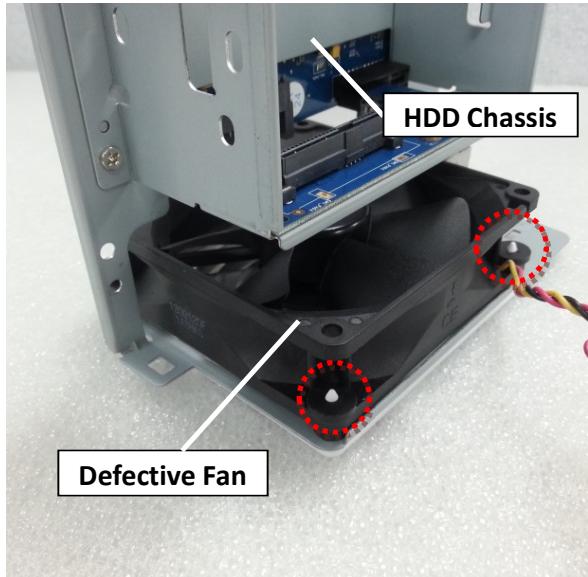


Fig. 50 – HDD Chassis Side

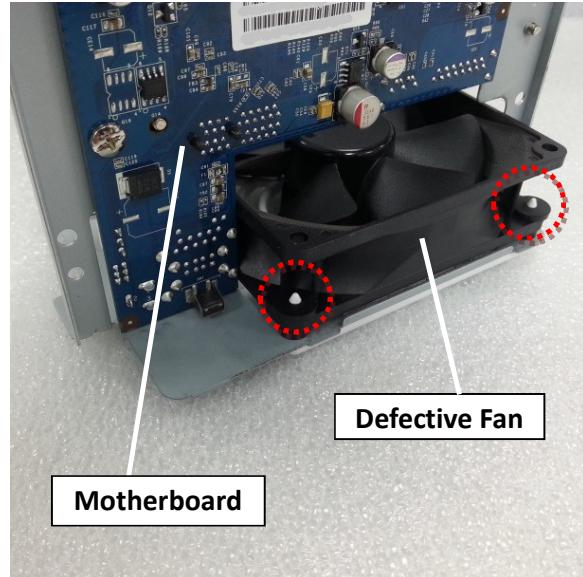


Fig. 51 – Motherboard Side

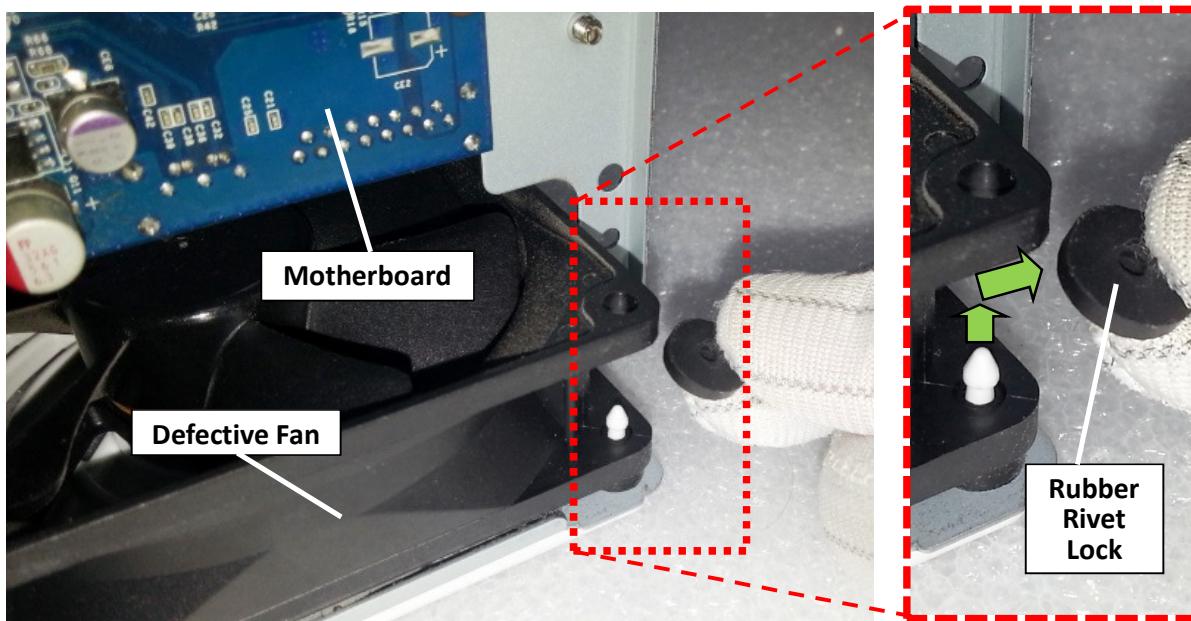


Fig. 52

How to Replace Fan for 2 bay DiskStation

3.2.2 Moving the defective fan away from the fan protecting net, the pillars and the rubber rivets (Marked by the red circles) can then be seen. (Fig. 53)

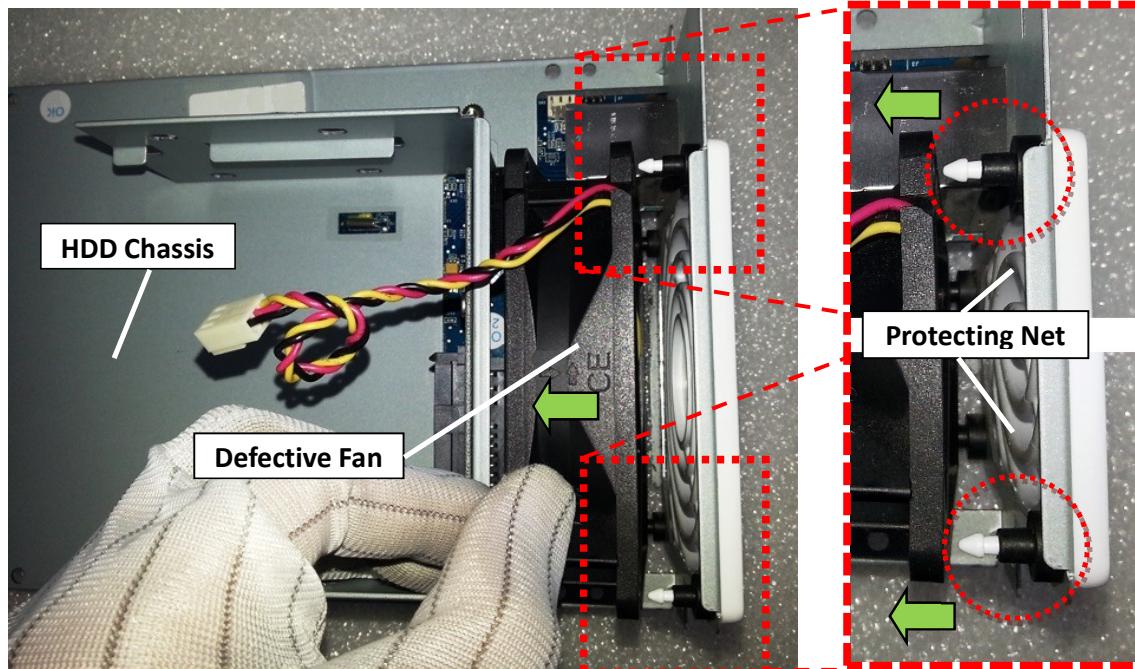


Fig. 53

3.2.3 Starting from the one most nearby the fan cable (Marked by the red circle), push the pillar outwards on its top to release the rubber rivet which fixes the protecting net on the interior of the rear panel. (Fig. 54)

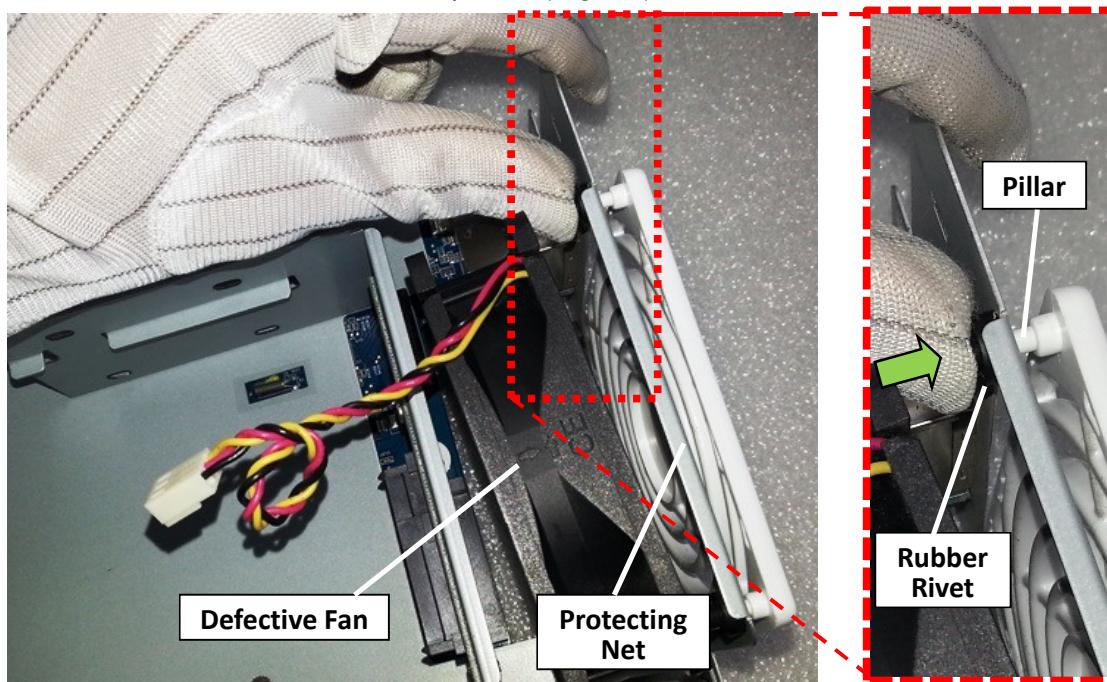


Fig. 54

How to Replace Fan for 2 bay DiskStation

Fig. 55 shows the status after the rubber rivet is released. Repeat the same for the other three sets of pillar and rubber rivet.

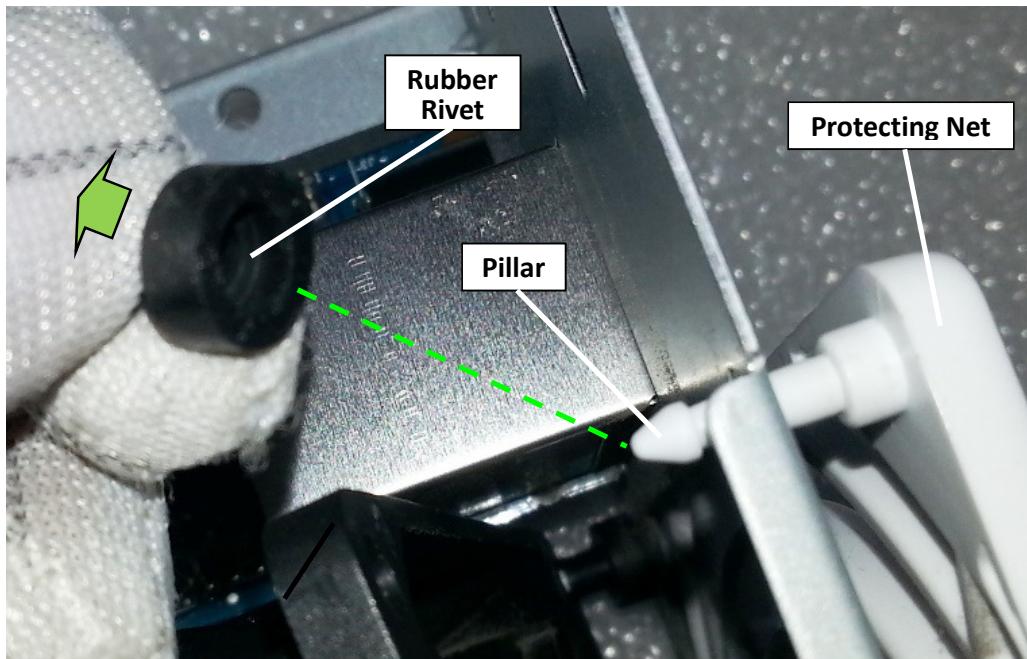


Fig. 55

3.2.4 Then remove the fan protecting net from the rear panel. (Fig. 56)

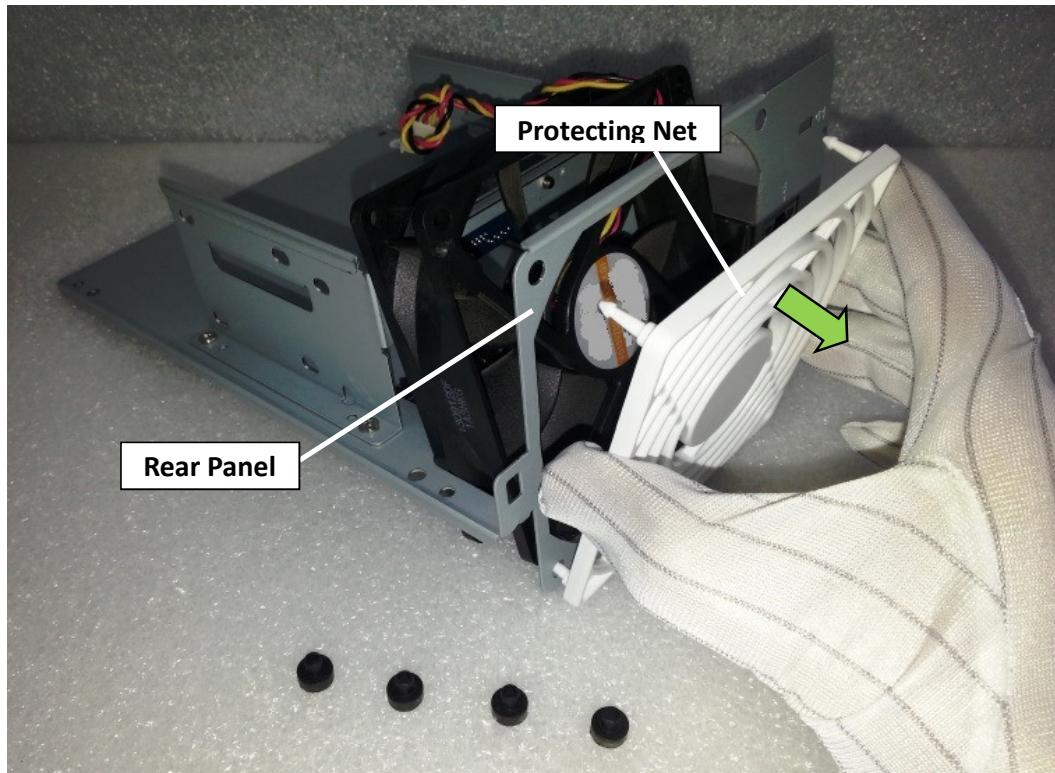


Fig. 56

How to Replace Fan for 2 bay DiskStation

3.2.5 Remove the defective fan module from the interior of the rear panel. (Fig. 57)

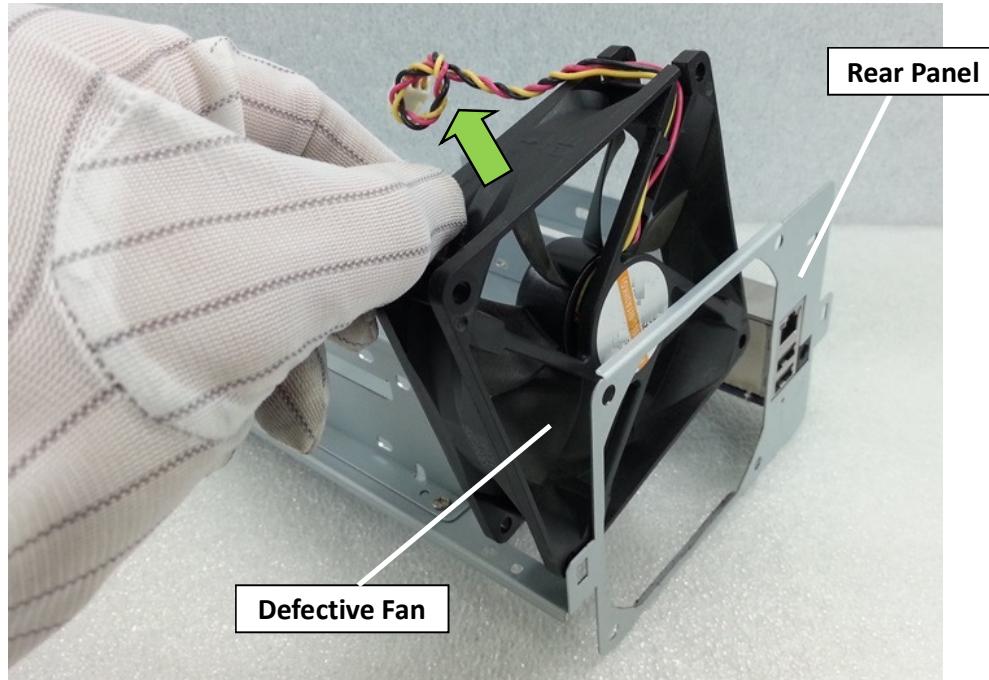


Fig. 57

3.2.6 Insert the replacement fan module to the same location of the defective one on the interior of the rear panel. (Fig. 58)

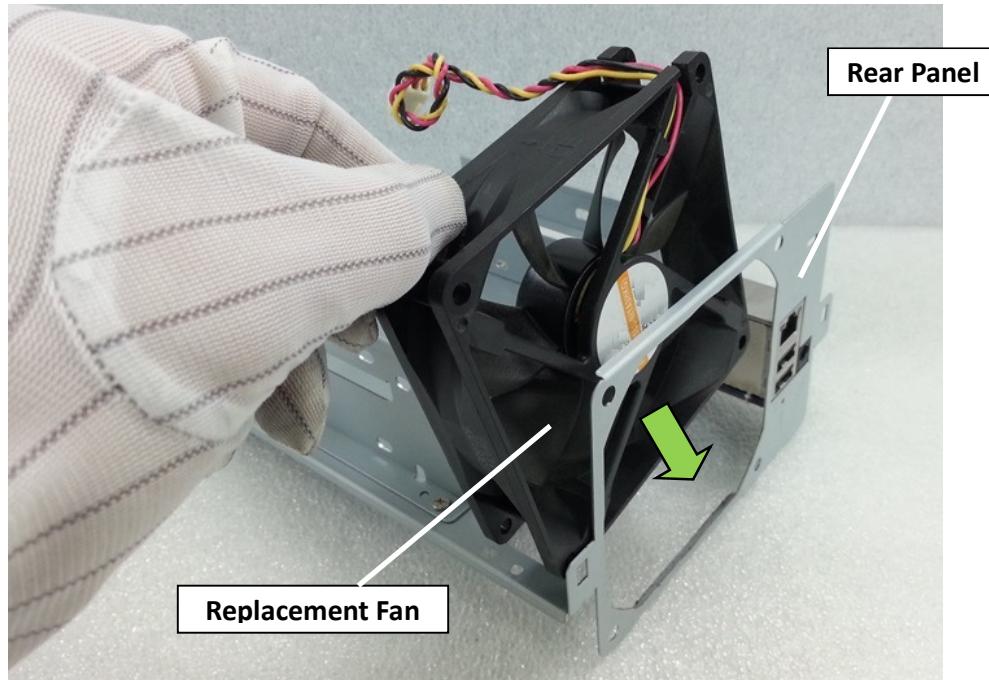


Fig. 58

How to Replace Fan for 2 bay DiskStation

3.2.7 Restore the fan protecting net to its original location on the rear panel. (Fig. 59)

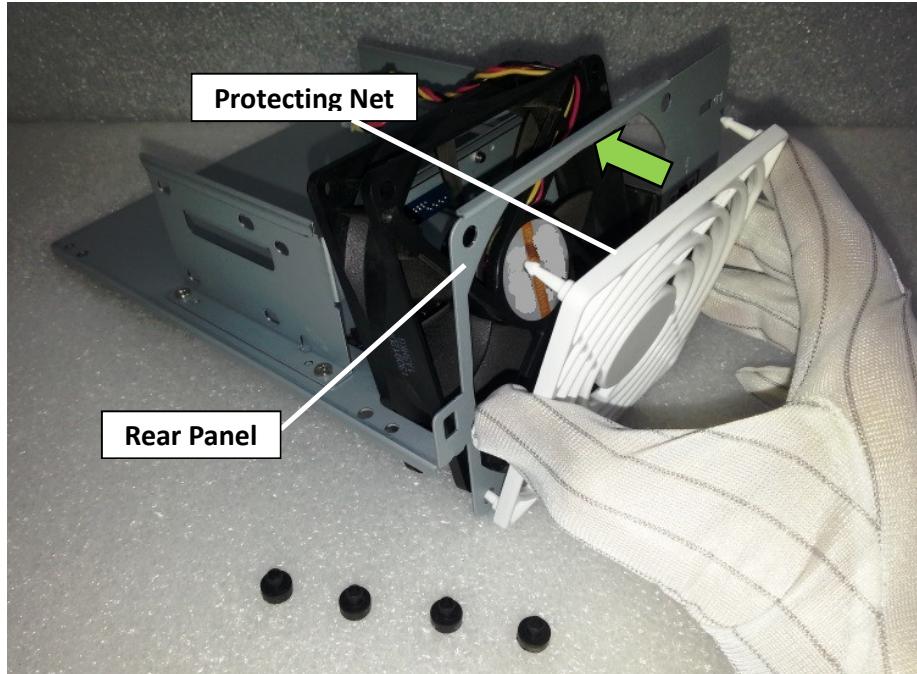


Fig. 59

3.2.8 Fix the four (4) rubber rivets on the pillars to secure the fan protecting net. (Fig. 60)

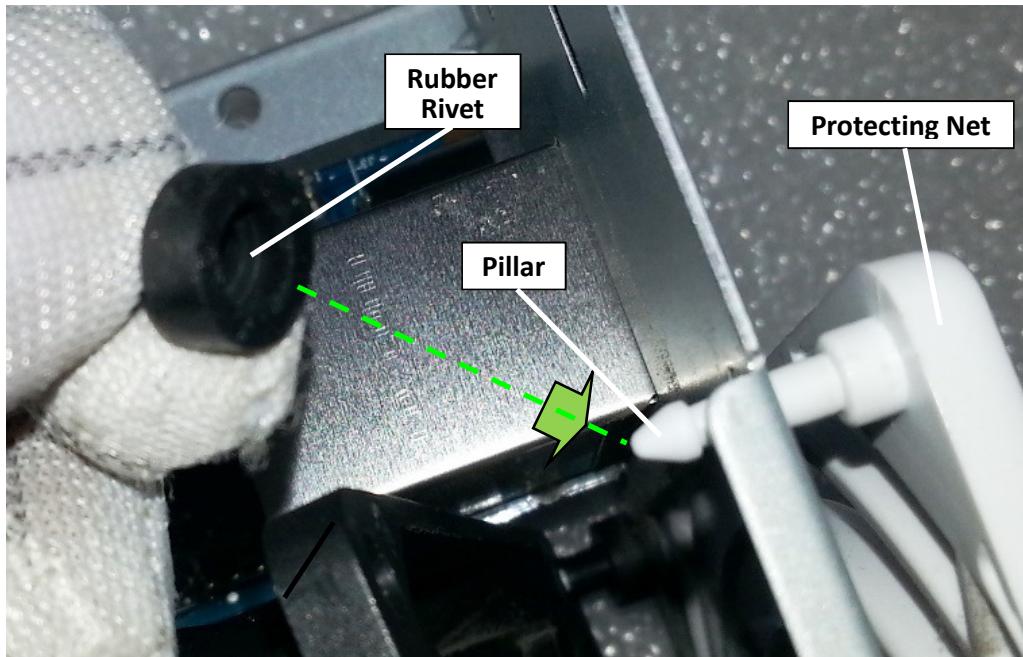


Fig. 60

How to Replace Fan for 2 bay DiskStation

- 3.2.9 Then press the replacement fan outwards with its four (4) holes inserted by the pillars on the fan protecting net (Marked by the red circles). (Fig. 61)

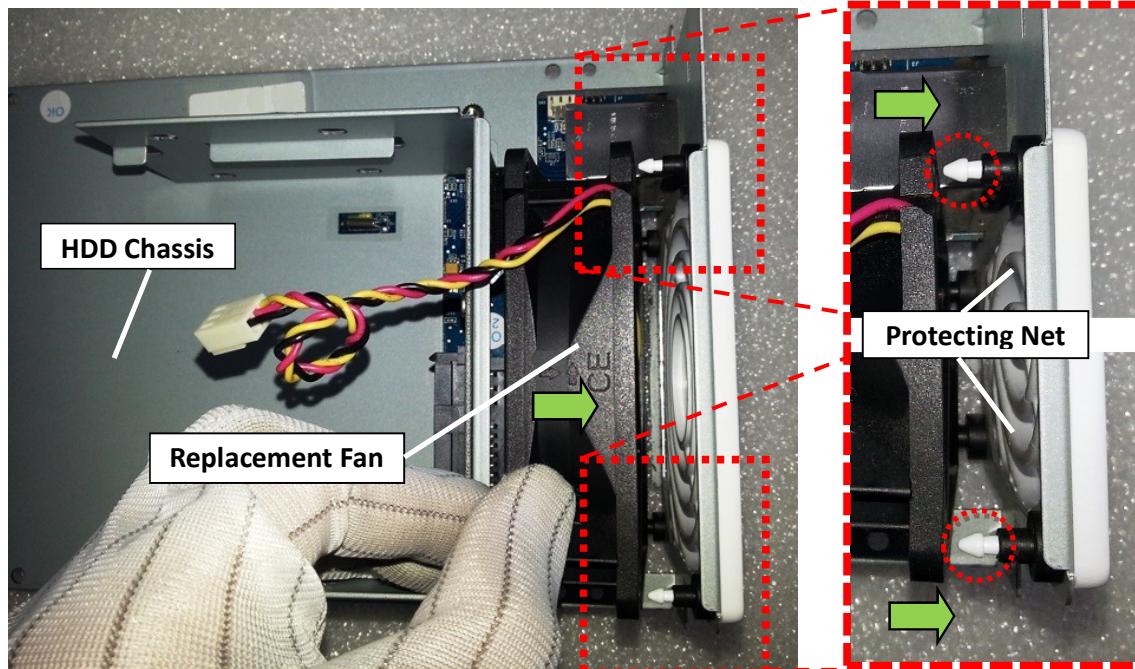


Fig. 61

- 3.2.10 Fix the four (4) rubber rivet locks (Marked by the red circles) to secure the replacement fan on the interior of the rear panel. (Fig. 62, 63 and 64)

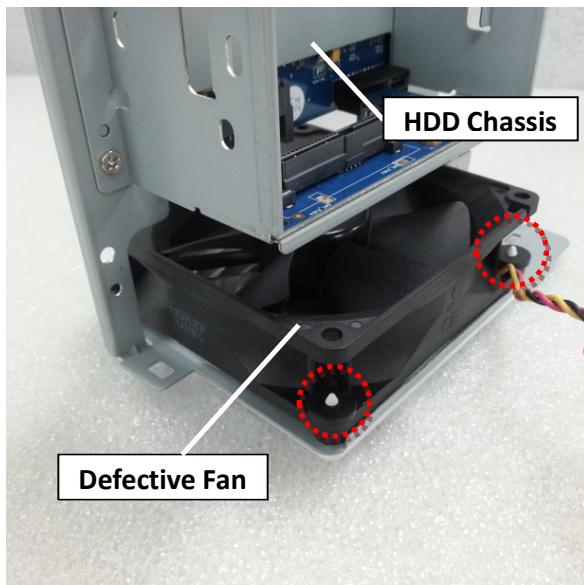


Fig. 62 – HDD Chassis Side

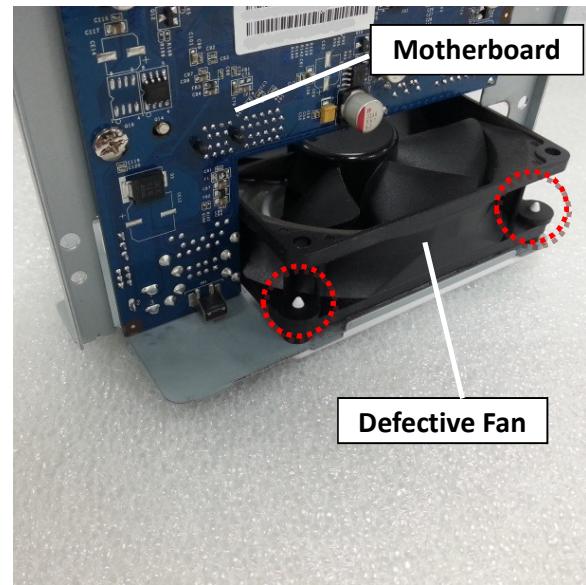


Fig. 63 – Motherboard Side

How to Replace Fan for 2 bay DiskStation

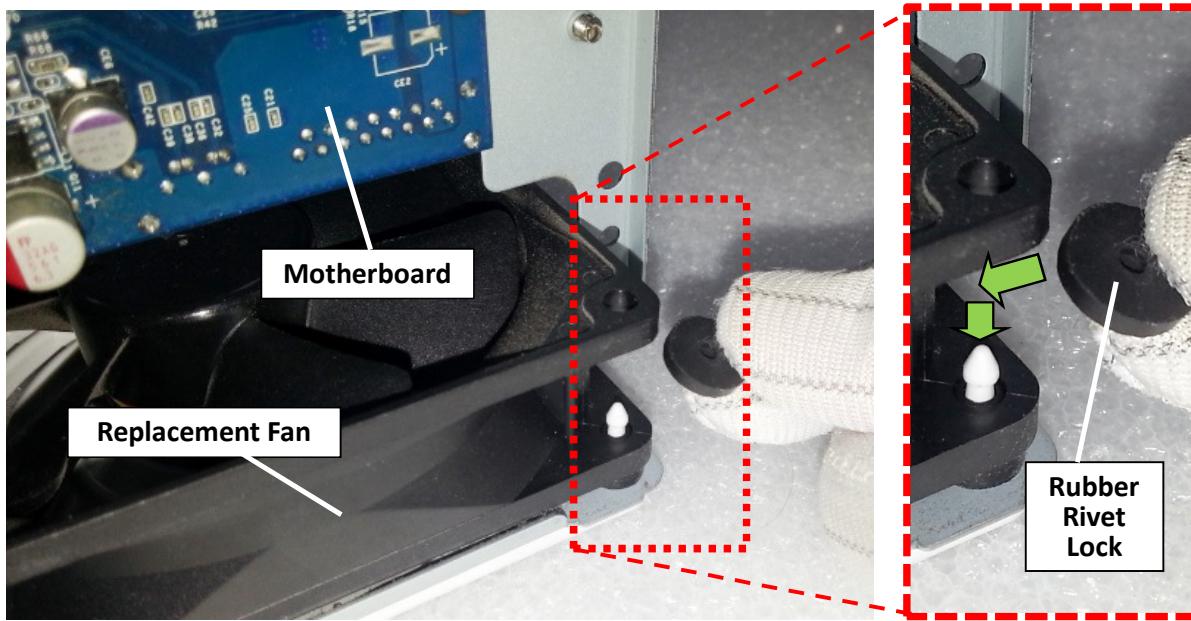


Fig. 64

- 3.2.11 Plug back the power button cable connector (Marked by the red rectangle) to its original location on the motherboard board. (Fig. 65) Then paste a new tape to secure the power button cable on the HDD chassis.

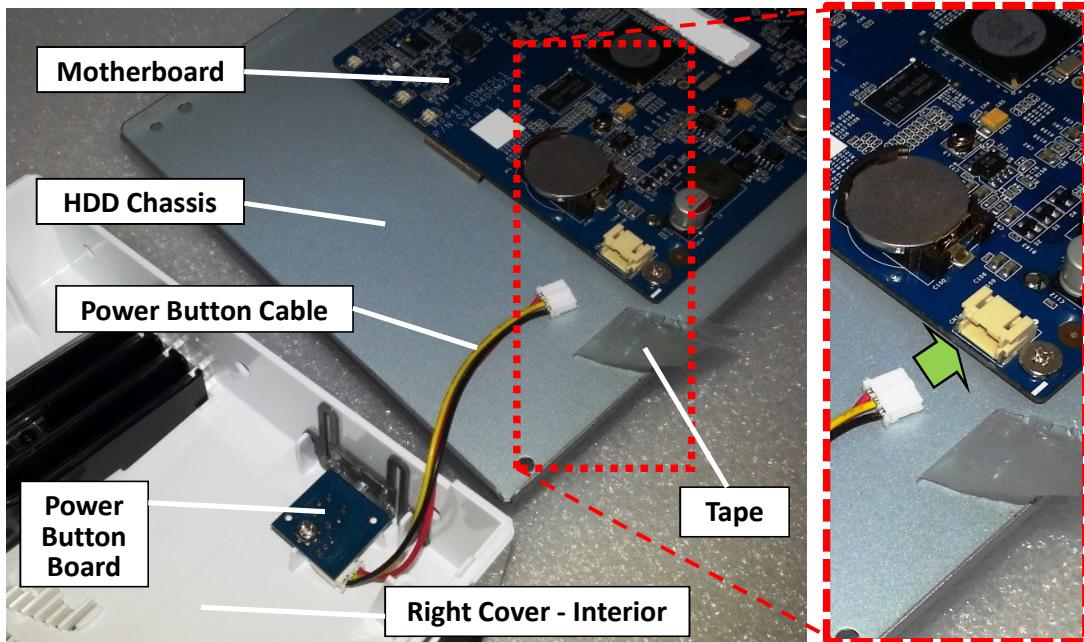


Fig. 65

How to Replace Fan for 2 bay DiskStation

- 3.2.12 Restore the HDD chassis to its original location on the interior of the right cover.
Note that the two hooks on the interior of the right cover should rightly insert into the correspondent holes on the rear panel (Marked by the red circles). (Fig. 66 & 67)

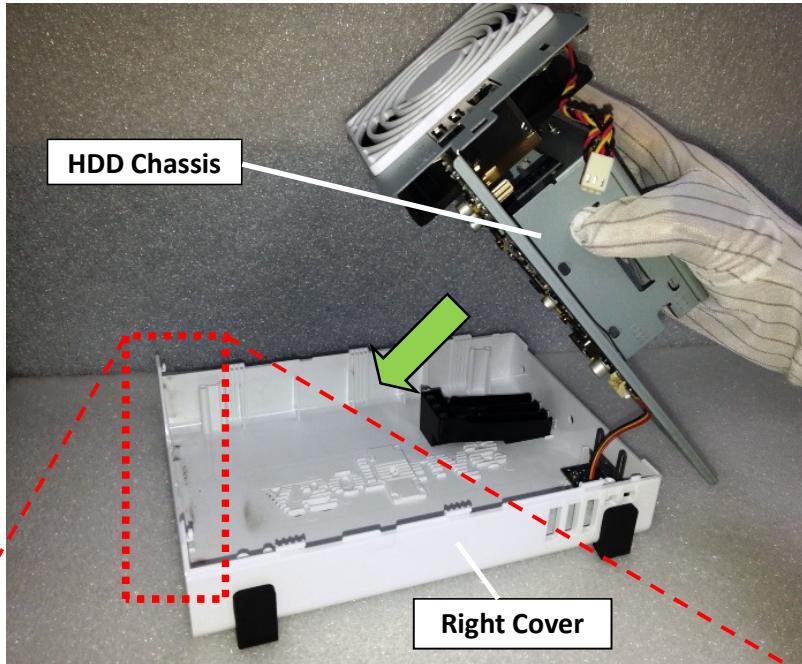


Fig. 66

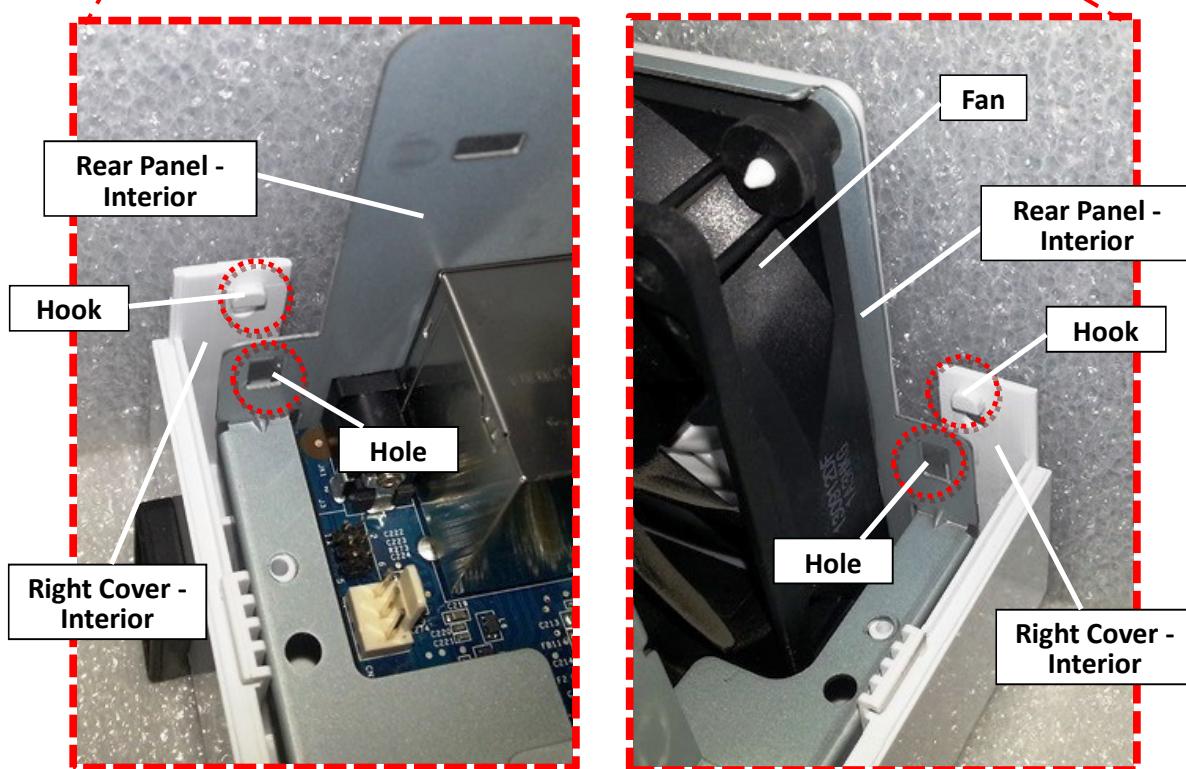


Fig. 67

How to Replace Fan for 2 bay DiskStation

Fig. 68 shows the status after the hooks insert the holes.



Fig. 68

3.2.13 Fix the four (4) screws (Marked by the red circles) to secure the HDD chassis.
(Fig. 69)

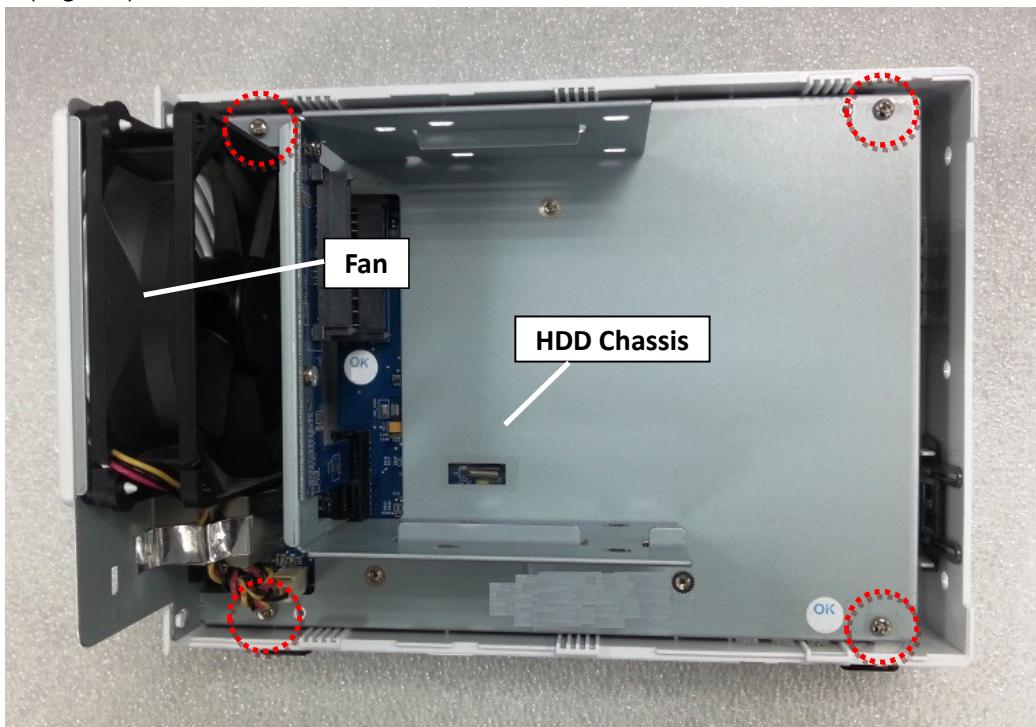


Fig. 69

How to Replace Fan for 2 bay DiskStation

3.2.14 Plug back the fan cable connector to its original location on the motherboard. Then replace the aluminum foil with a new one pasted on the same location. (Fig. 70)

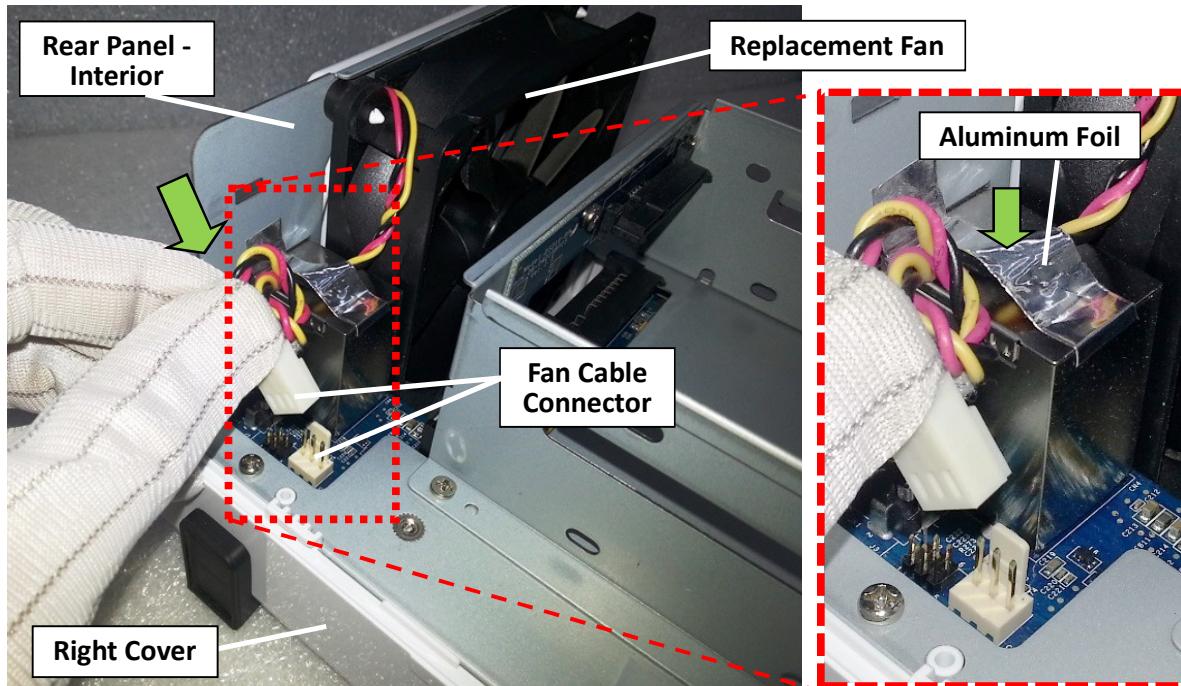


Fig. 70

How to Replace Fan for 2 bay DiskStation

3.3 Replace the fan module for DS213air, DS212j, DX213

- 3.3.1 Release the four (4) screws on the protecting net (Marked by the red circles) which fix the defective fan. (Fig. 71)

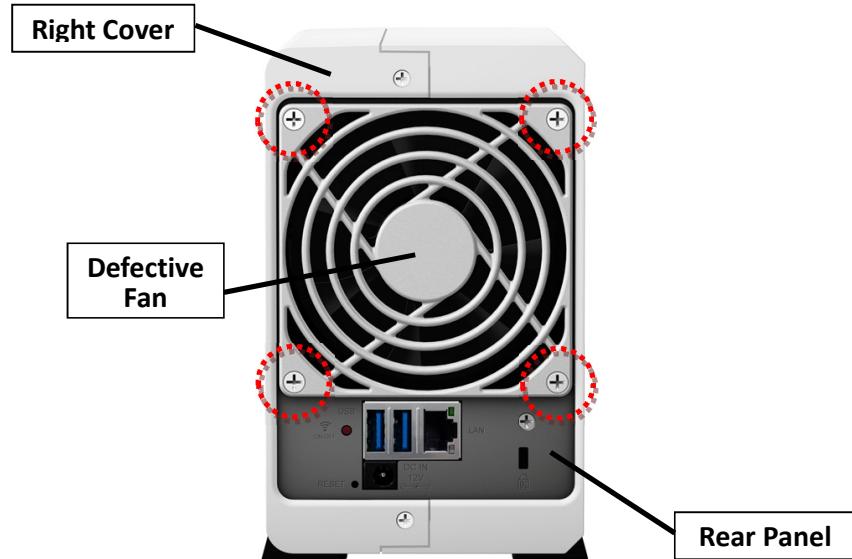


Fig. 71

- 3.3.2 Remove the protecting net of the defective fan from the rear panel. (Fig. 72)

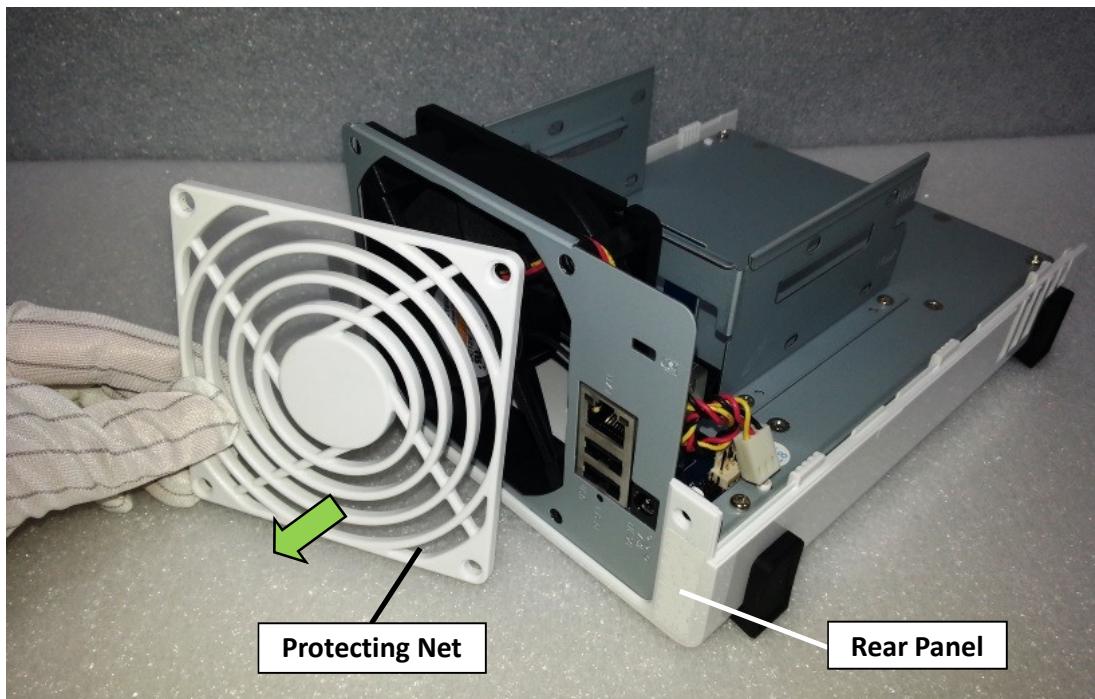


Fig. 72

How to Replace Fan for 2 bay DiskStation

- 3.3.3 Remove the defective fan module from the interior of the rear panel. (Fig. 73)

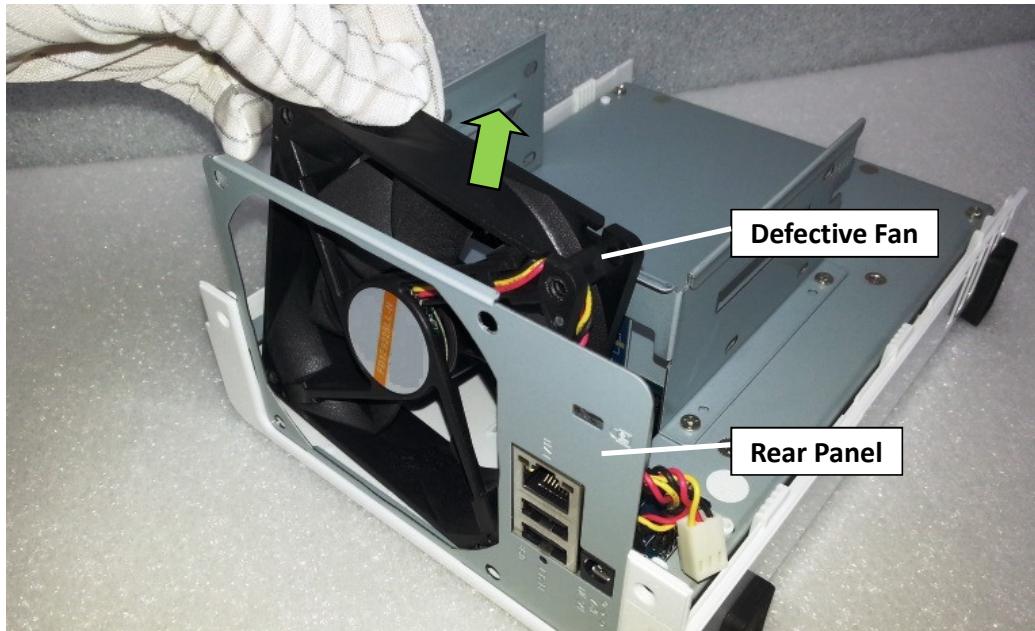


Fig. 73

- 3.3.4 Put the replacement fan module to the same location as of the defective one on the interior of the rear panel. (Fig. 74)

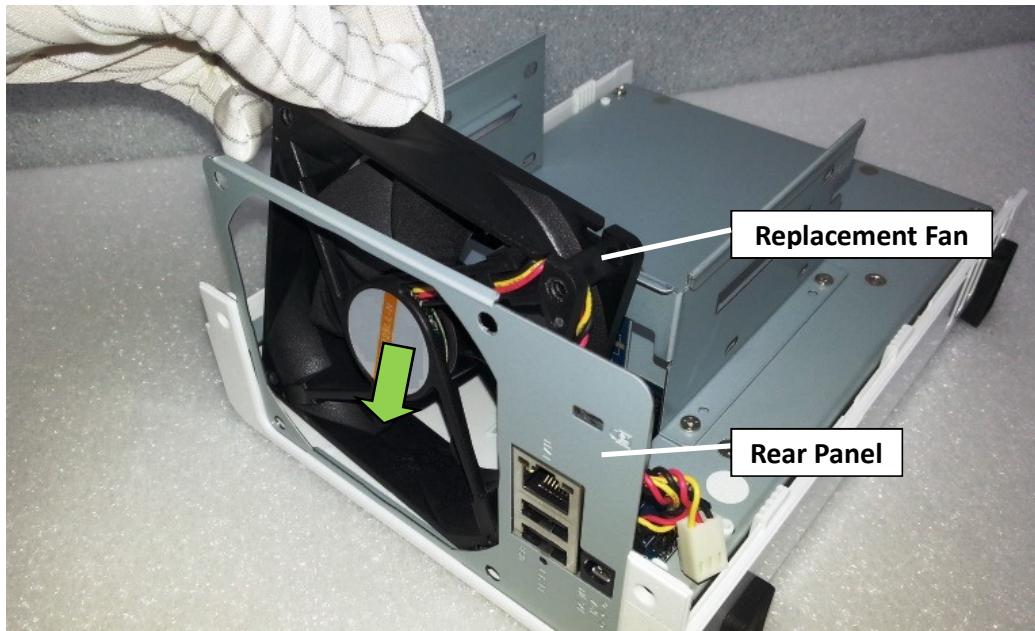


Fig. 74

How to Replace Fan for 2 bay DiskStation

3.3.5 Restore the protecting net to its original location on the rear panel. (Fig. 75)

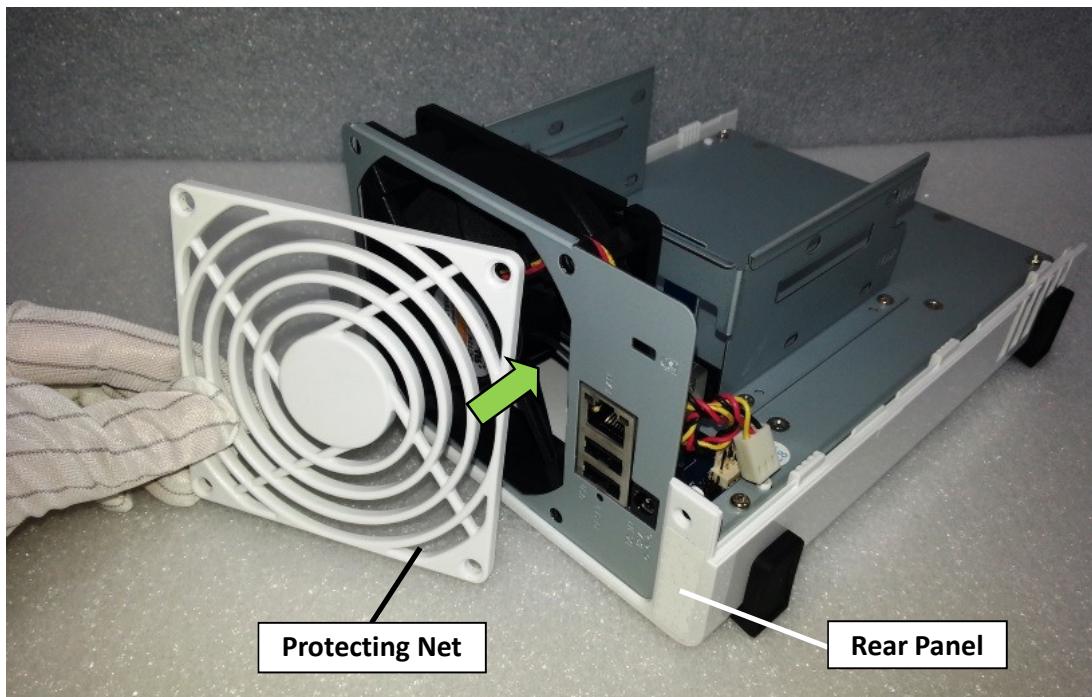


Fig. 75

3.3.6 Fix the four (4) screws on the protecting net (Marked by the red circles) to secure the replacement fan. (Fig. 76)

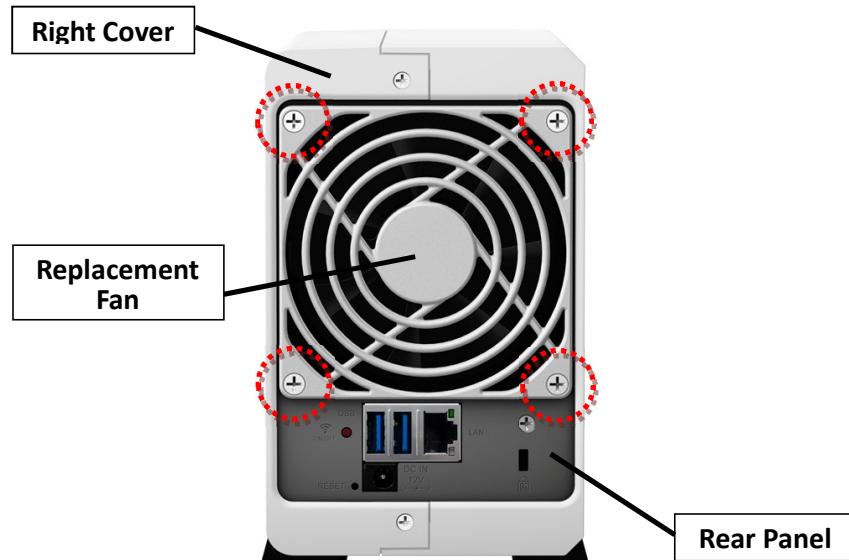


Fig. 76

How to Replace Fan for 2 bay DiskStation

3.3.7 Plug back the fan cable connector to its original location on the motherboard. Then replace the aluminum foil with a new one pasted on the same location. (Fig. 77)

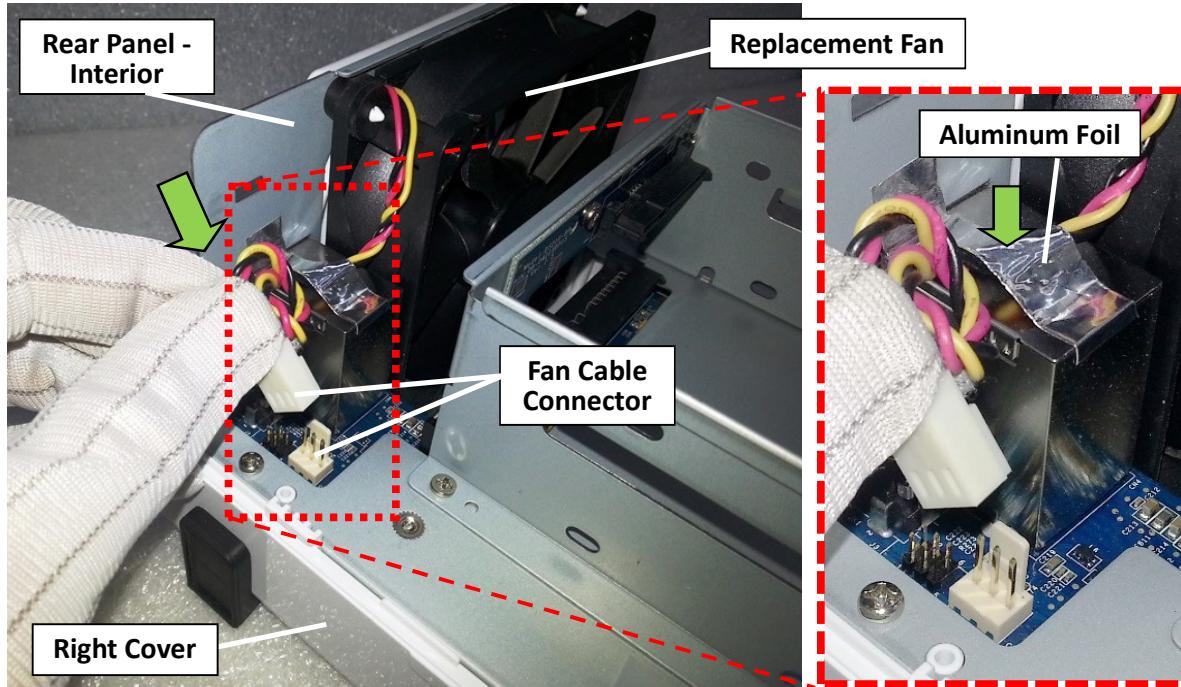


Fig. 77

How to Replace Fan for 2 bay DiskStation

3.4 Restore the enclosure

- 3.4.1 Restore the left cover to its original location covering the HDD chassis. (Fig. 78 & 79)

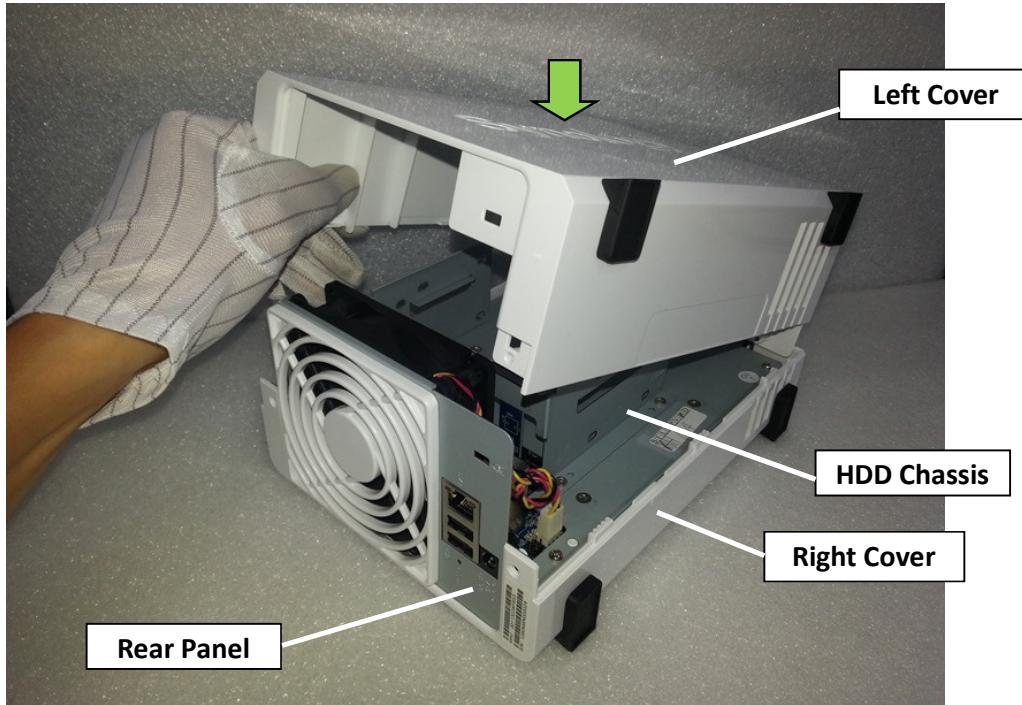


Fig. 78

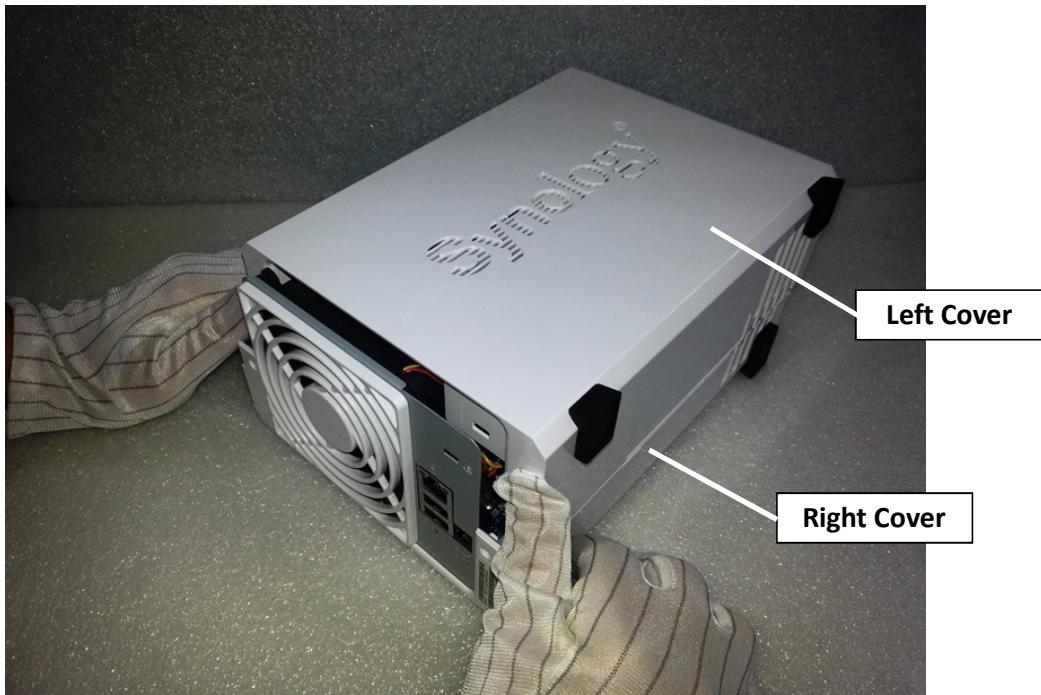


Fig. 79

How to Replace Fan for 2 bay DiskStation

3.4.2 Join the left and right covers properly. (Fig. 80)

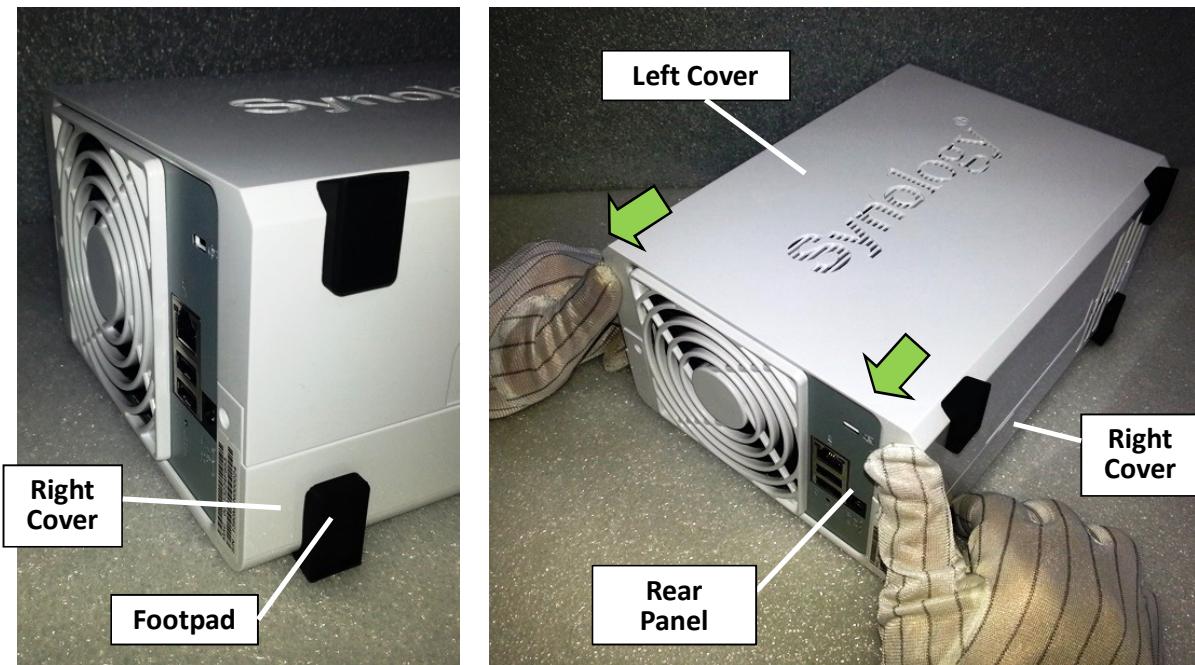


Fig. 80

3.5 The replacing task is completed.