# Falcon 5208

## NVMe Virtual Function Reassignment

**Version 1.0**
**October 1st, 2021**

# Notes, Cautions, and Warning

**Note** A NOTE indicates important information that helps you make better use of your product.

**Caution** **A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.**

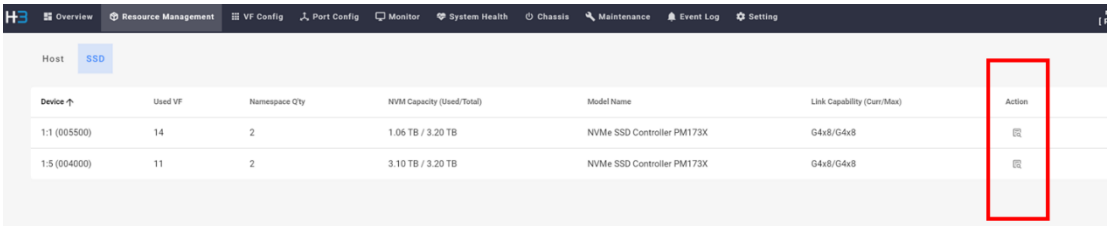
**Warning** **A WARNING indicates a potential for property damage, personal injury, or death.**

# Notes:

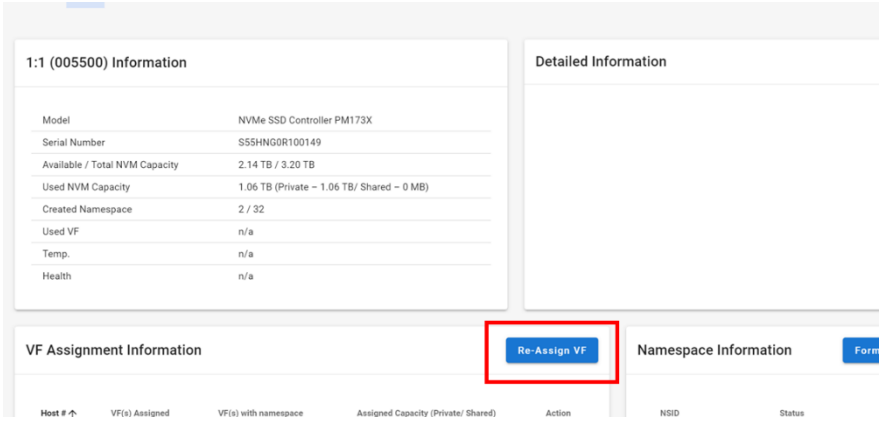
This document explains virtual function reassignment process under Falcon 5208 NVMe SR-IOV management mechanism for users who had assigned NVMe virtual functions in the initial settings and would like to reallocate virtual functions. For first time users, please see Falcon 5208 User Manual and Quick Installation Guide

## Virtual function reassignment can be done from the re-assign page:

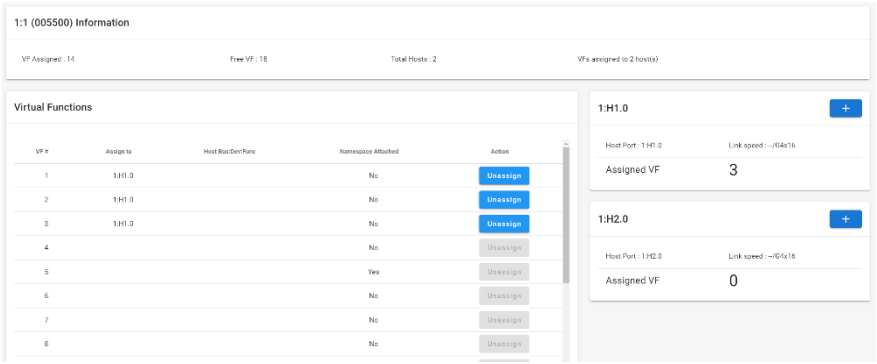
Resource Management (SSD) > Select a device and click “Action”




Find “VF assignment Information” and click “Re-assign VF”




“Re-assign VF” page



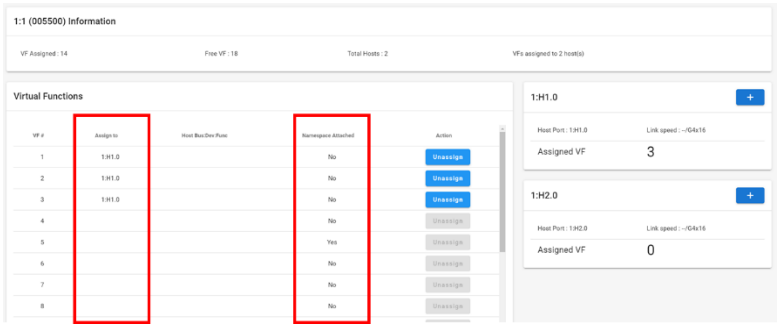
# NVMe Virtual Function Reassignment

Under Falcon 5208 NVMe SR-IOV management mechanism, users can reassign virtual functions among connected host machines. It is recommended to reboot or rerun a PCIe scan on the host machines when any virtual function reassignment is made.

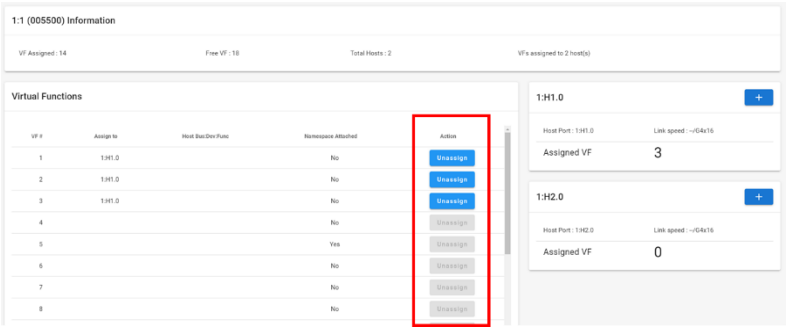
As all 256 virtual functions have been preassigned to host machines in the initial setting, when reassigning virtual functions, users should first unassign the unused virtual function from a host machine (VFs without any namespace attached). Users can only assign virtual functions that have not been assigned to any host. Please refer to the following steps:

## Unassign unused virtual function(s) from a host machine.

Check host port and namespace attachment

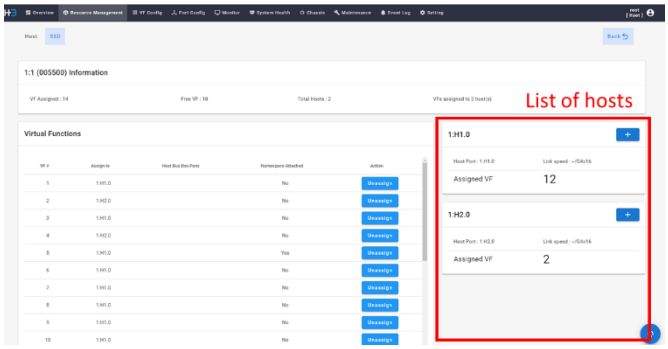


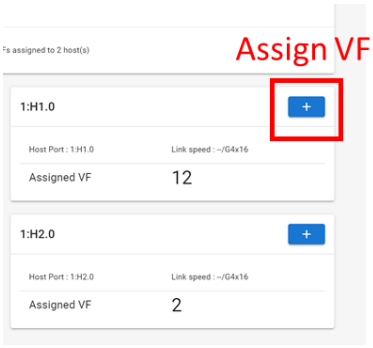

Click the “Unassign” button to unassign virtual function(s) without namespaces attached (i.e., Namespace Attached=No)




When unassigning VFs with namespace(s) attached, the VF will be unassigned, and the namespaces will be detached automatically. The data stored on the namespace(s) are not erased, users can still find the namespace under the SSD action page.

## Assign the virtual function(s) to a different host machine.




One VF can only be assigned to one host at a time.

The system will assign VFs on first available basis in VF number order.

e.g., If VF 1-2 and 1-3 are both free, when assigning VFs, the system would prioritize VF1-2.

## Reboot the host machines that received VF re-assignment.

An example is given in the next pages.

# Example

If customers would like to change the assigned VFs to the connected hosts, below is an example of changing the assigned VFs.

The original assigned VFs are as below. The host with x16 host connection gets 16 VFs from every NVMe SSD, the hosts with x8 host connection get 8 VFs from every NVMe SSD. The number of VFs assigned to each host was based on the bandwidth of host connection.

### Original VF assignment:

Host connections 1 x16, 1 x8, and 1 x8
8 Samsung PM1735 NVMe SSD
32 virtual functions per NVMe SSD
Assigned VFs: 16x VFs for host 1; 8x VFs for host 2; 8x VFs for host 3

| Host | Host 1 | Host 2 | Host 3 |
|---|---|---|---|
| **Link** | PCIe 4.0 x16 | PCIe 4.0 x8 | PCIe 4.0 x8 |
| SSD | VFs assigned to each host per SSD | | |
| **1** | 16 | 8 | 8 |
| **2** | 16 | 8 | 8 |
| **3** | 16 | 8 | 8 |
| **4** | 16 | 8 | 8 |
| **5** | 16 | 8 | 8 |
| **6** | 16 | 8 | 8 |
| **7** | 16 | 8 | 8 |
| **8** | 16 | 8 | 8 |

## Reassign virtual functions

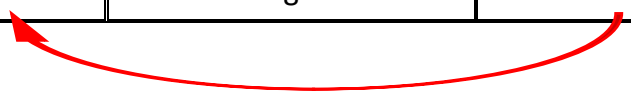
The VF assignment is changed to the following: Host 1 gets 20 VFs, the host 2 gets 8 VFs (unchanged), and host 3 gets 4 VFs from every NVMe SSD.

### New VF assignment:

Host connections 1 x16, 1 x8, and 1 x8
8 units of Samsung NVMe SR-IOV SSD
32 virtual functions in one NVMe SSD
Assigned VFs: 20 VFs for host 1; 8x VFs for host 2; 4x VFs for host 3

(Continue to next page)

| Host | Host 1 | Host 2 | Host 3 |
|---|---|---|---|
| **Link** | PCIe 4.0 x16 | PCIe 4.0 x8 | PCIe 4.0 x8 |
| SSD | VFs assigned to each host per SSD | | |
| **1** | 16 +4 | 8 | 8 -4 |
| **2** | 16 +4 | 8 | 8 -4 |
| **3** | 16 +4 | 8 | 8 -4 |
| **4** | 16 +4 | 8 | 8 -4 |
| **5** | 16 +4 | 8 | 8 -4 |
| **6** | 16 +4 | 8 | 8 -4 |
| **7** | 16 +4 | 8 | 8 -4 |
| **8** | 16 +4 | 8 | 8 -4 |



Steps:

**For each SSD**

1. **Unassign 4 VFs that are previously assigned to host 3.**
   Resource management→Device→SSD, click on action →Re-assign VF
   From the Virtual Function panel, find any 4 VFs assigned to host 3, unassign them.

2. **Assign the 4 VFs to host 1**
   From host panel, find host 1, click the "+" button 4 times.

**When all the reassignments are done, reboot host 1 and host 3** for the changes to take effect.

After the host 1 and host 3 are rebooted, the VF re-assignment is finished. The host machines should recognize any change that has been made. Users can now attach namespaces to the VFs added to host 1.