FUTUREWEI

Qlogic® QL45212 25Gbe RoCE NIC compatibility test with Huawei CloudEngine CE6865-48S8CQ-EI switch

Test Report

Trademarks and Permissions

Notice

The purchased products, services, and features are stipulated by the contract ma
customer. All or part of the products, services, and features described in this docu
purchase scope or the usage scope. Unless otherwise specified in the contract, all
recommendations in this document are provided "AS IS" without warranties, guarant
kind, either express or implied.

The information in this document is subject to change without notice. Every e
preparation of this document to ensure accuracy of the contents, but all s
recommendations in this document do not constitute a warranty of any kind, express

FUTUREWEI® TECHNOLOGIES, INC.

Boston Research Center

Address: 111 Speen Street, Suite 114
Framingham, MA 01701
United States of America

Website: http://www.futurewei.com/

Contents

Contents

1 Executive Summary

Huawei® CloudEngine CE6865-48S8CQ-EI is a popular component in Huawei OceanStor based NoF+ storage solutions. It was tested to work well with Mellanox® CX-4/5 based RoCE NICs for host, and Huawei Hi1822 chipset based I/O module on OceanStor arrays.

This test report evaluated compatibility of host side adaptors based on Qlogic® QL45212 chipset. The conclusion is, this chipset is not working with CloudEngine CE6865-48S8CQ-EI switch. We should recommend avoiding HBAs based on this chipset when using CloudEngine CE6865-48S8CQ-EI.

2 Test Environment

2.1 Hardware and Software Configurations

2.1.1 Configuration of involved hardware components

Table 2-1 OceanStor Dorado configuration

Name	Description	Quantity
OceanStor Dorado	Huawei OceanStor Dorado 5000 V6 with two controllers	1
25 Gbit/s RoCE I/O module	4-port FE 25 Gbit/s RoCE I/O module	2
CloudEngine CE6865-48S8CQ-EI	48 port 25Gbit/s RoCE switch	1
QLOGIC QL45212HLCU HBA	Dual port 25Gbe RoCE NIC	2

2.1.2 Configuration of other hardware

Table 2-2 Configuration of other hardware

Name	Description	Quantity	Function
Linux server	x86 server • CPU: 8 x • Memory: 8 GB • Main storage disk: 60 Gb	1	

2.2 QL45212 Compatibility with CloudEngine CE6865-48S8CQ

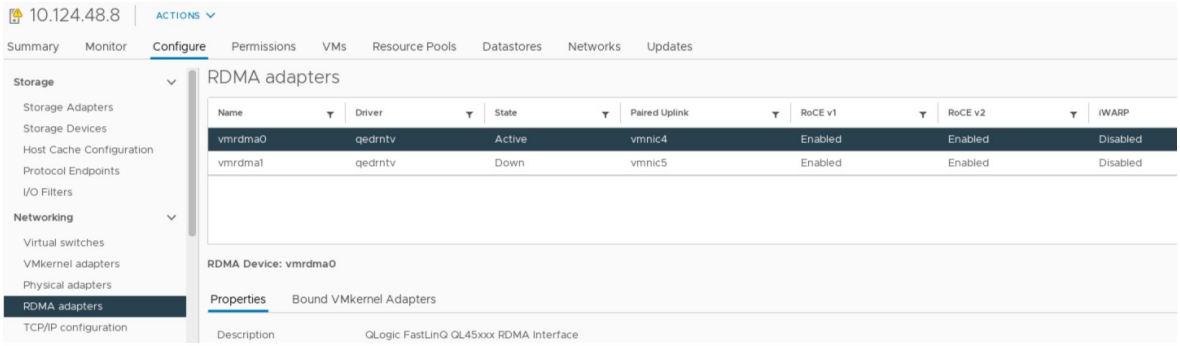
2.2.1 Testing QL45212 connecting to QL45212

Connecting one QL45212 port to another QL45212 port shows properly auto-negotiated 25Gb speed, and connectivity test passed without issue.

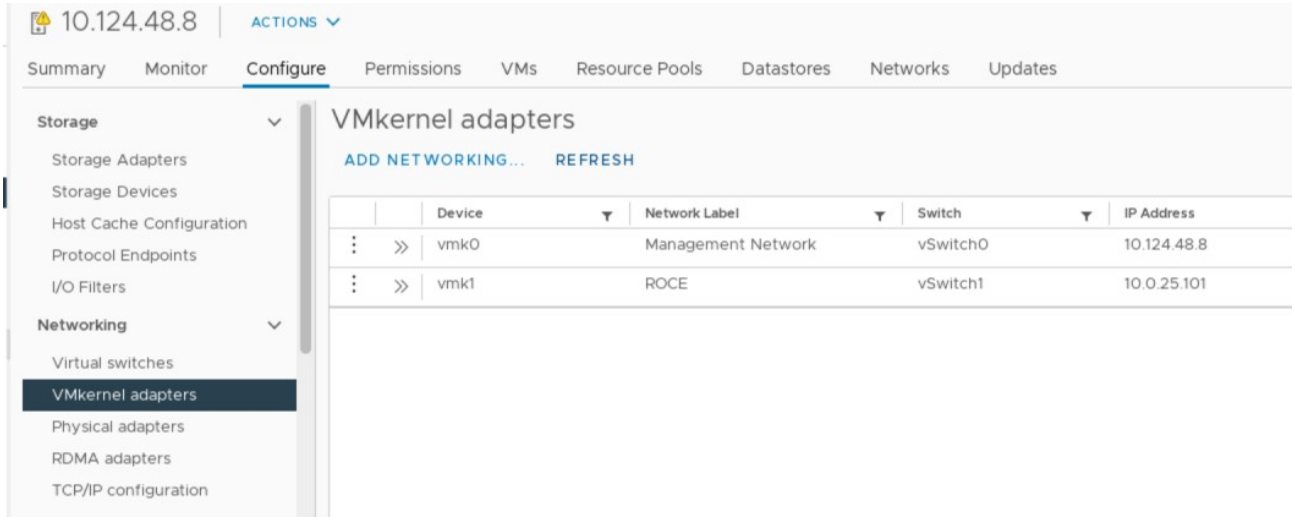
2.2.2 QL45212 as RDMA adaptor in ESXi

Key steps and results:

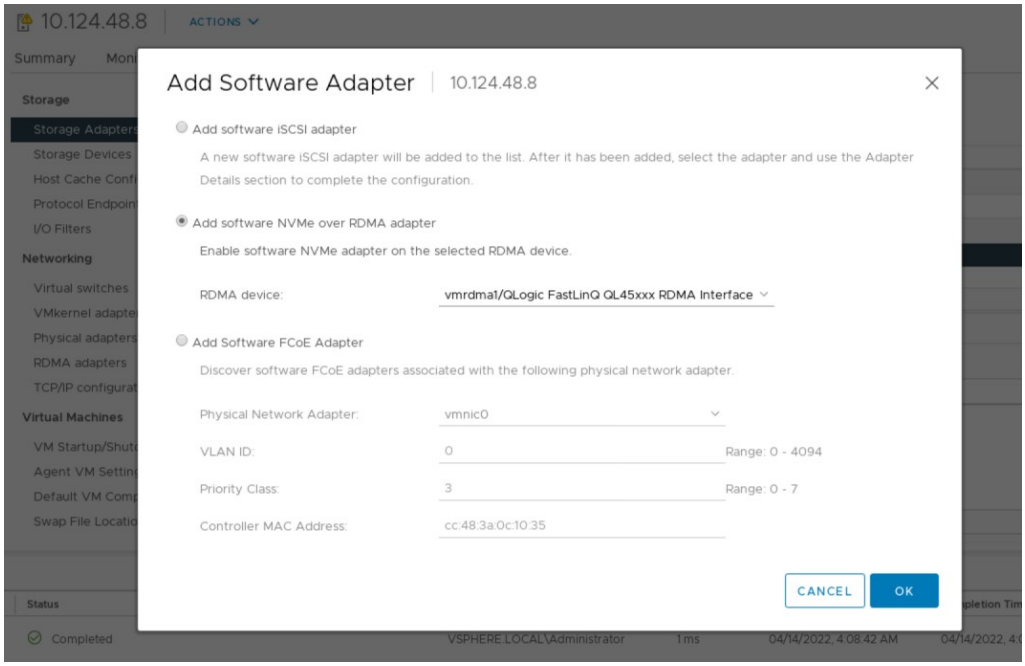
Install the hardware and check status of the adaptor



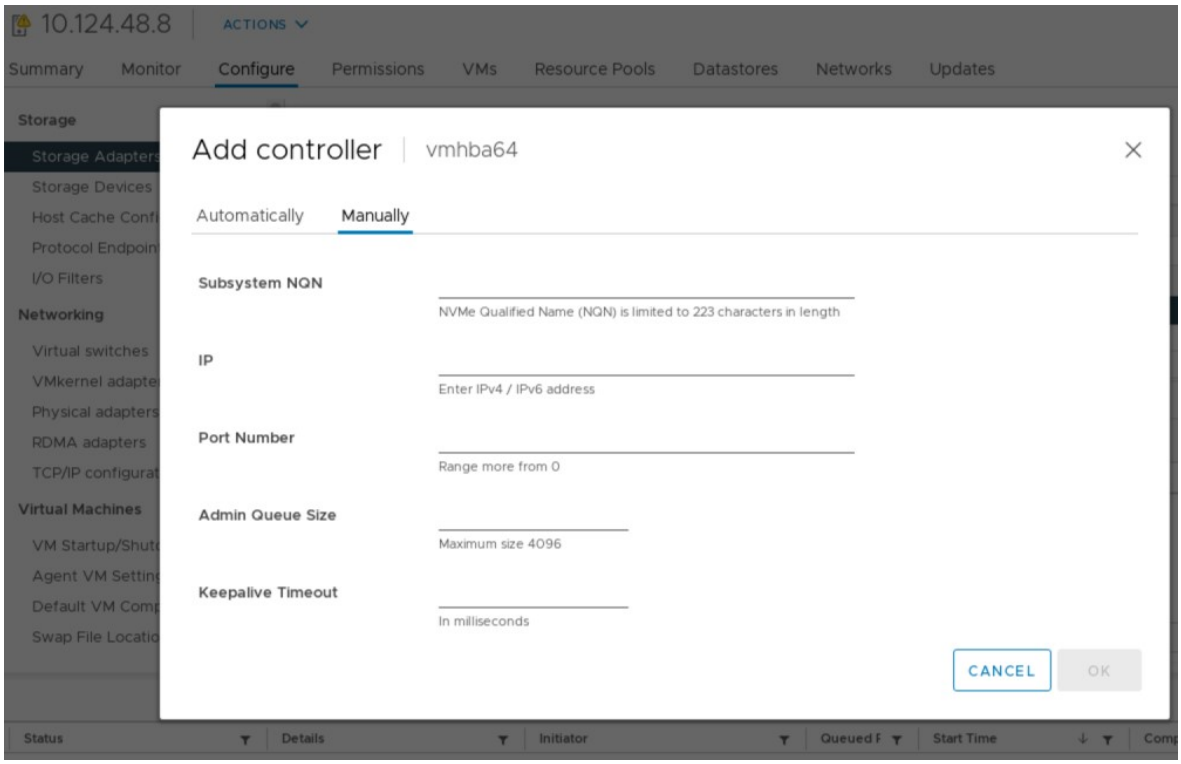
Create vmkernel port binding and new vswitch, add IP



Under host storage section, add new storage adaptor:



Ready to add NoF storage in the new adaptor's controller tab:



2.2.3 QL45212 connecting to CloudEngine

Key observations:

- When connecting Qlogic HBA port to the switch, on the switch side, port shows live:

```
[~HUAWEI-25GE2/0/27]di th int
25GE2/0/27 current state : DOWN (ifindex: 100)
Line protocol current state : DOWN
Description:
Switch Port, PVID :    1, TPID : 8100(Hex), The Maximum Frame Length is 9216
Internet protocol processing : disabled
IP Sending Frames' Format is PKTFMT_ETHNT_2, Hardware address is f033-e552-f8c1
Port Mode:    COMMON COPPER,     Port Split/Aggregate:              -
Speed:                AUTO,     Loopback:                       NONE
Duplex:               FULL,     Negotiation:                 DISABLE
Input Flow-control: DISABLE,    Output Flow-control:         DISABLE
Mdi:                  AUTO,     Fec:                            NONE
Last physical up time   : -
Last physical down time : 2022-04-08 01:33:55
Current system time: 2022-04-28 19:31:14
Statistics last cleared:never
    Last 300 seconds input rate: 0 bits/sec, 0 packets/sec
    Last 300 seconds output rate: 0 bits/sec, 0 packets/sec
    Input peak rate 0 bits/sec, Record time: -
    Output peak rate 0 bits/sec, Record time: -
    Input :                  0 bytes,                  0 packets
    Output:                  0 bytes,                  0 packets
    Input:
      Unicast:                        0    Multicast:                        0
```

- On the Qlogic NIC port, light is off and shows no activity.
- Same cable works fine for connecting two Qlogic ports.
- Same cable works fine for connecting CX-4 HBA port to CloudEngine switch port.

It appears that layer 1 negotiation between Qlogic QL45212 and CloudEngine CE6865-48S8CQ-EI is not working. Further investigation require engineering support from both vendors, and is not covered by this report.

3 Results

Conclusion

There are compatibility issues between Qlogic QL45212 chipset based HBA with CloudEngine CE6865-48S8CQ-EI switch. We should recommend avoiding HBAs based on this chipset when using CloudEngine CE6865-48S8CQ-EI.