

ESX: How to convert from naa identifier to LUN ID

Article Number:000167614 Version:2

Key Information

Audience: Level 30 = Customers

Article Type: How To

Last Published: Thu Aug 29 10:50:13 GMT 2013

Validation Status: Final Approved

Summary: This article describes how to convert an ESX naa identifier to an EMC LUN ID.

Article Content

Goal: When you present a SAN LUN to an ESXi host, the OS uses NAA identifiers to address the LUNs. The NAA identifier contains some useful information that can be translated back to a particular storage array and LUN within that array. This article describes how to perform this conversion.

Environment: System: VMware ESXi 4.x
System: VMware ESXi 5.x
Product: Symmetrix
Product: Symmetrix VMAX
Product: CLARiiON
Product: VNX Family

Resolution: The naa identifier comes in the form of naa.aaaaaaaabbbbbbbbbbbccdddddddddd .

The breakdown is as follows:

aaaaaaa is an 8 digit vendor identifier:
60060480 <— EMC Symmetrix
60000970 <- EMC VMAX
60060160 <— DGC (EMC CLARiiON/VNX)

bbbbbbbbbb is a 12 digit serial # of the storage array.
cc is a 2 digit code that is currently unused.
dddddddddd is a 10 digit LUN identifier.

The best way to explain the conversion is to use an example:

Following is device name in the ESX naa.60060480000290105483533030344446

Can you resolve the volume ID from the device name?

You will have to take the 10 digits in pairs, that will give you the ASCII code in hex, for the pair, which after being concatenated gives you the device id.

Example:

60060480bbbbbbbbbb533031464446

60060480 - makes this EMC Symmetrix

0000xxxxxxxx - serial number of the array

53 - unused

3030344446 -> which will break down to 30 30 34 44 46 -> which gives us a device id of 004DF

30 -> converted to decimal from hex= 48 -> which in ASCII = Zero

30 -> converted to decimal from hex= 48 -> which in ASCII = Zero

34 -> converted to decimal from hex= 52 -> which in ASCII = Four

44 -> converted to decimal from hex= 68 -> which in ASCII = D

46 -> converted to decimal from hex= 70 -> which in ASCII = F

0 0 4 D F ==> Device ID

Notes: naa.<NAA>:<Partition>

NAA stands for Network Addressing Authority identifier. The number is guaranteed to be unique to each LUN.

The NAA identifier is the preferred method of identifying LUNs and the number is generated by the storage array.

Since the NAA is unique to the LUN, if the LUN is presented the same way across all ESXi hosts, the NAA or EUI identifier remains the same.

ASCII Table for reference can be found here <http://www.asciitable.com/> to convert from Hex to ASCII.

Article Metadata

Product: Symmetrix VMAX 40K, VMware ESXi, VMware ESX, Symmetrix, VNX, PowerPath/VE