

# Intel® Ethernet Converged Network Adapter X710/XL710

iSCSI Quick Connect Guide (Windows\*)

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Networking Division (ND)

October 2015

Revision 2.0  
Order # 333208-001



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## Revision History

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Revision	Date	Comments
1.0	February 2013	Initial Release (Intel Public).
2.0	October 2015	Added Intel® Ethernet Converged Network Adapter X710/XL710 and Windows Server* 2012 R2 information.



**NOTE:**        *This page intentionally left blank.*



## 1.0 Introduction

This quick connect guide is considered a supplement to the *Microsoft\* Storage Administrators Guide*. It is an introduction to iSCSI storage connectivity from a Windows server administrator's perspective and shows the basic connection from the Windows operating system to an iSCSI storage target. The primary goal of this guide is to show the connection from a host perspective and the requirements provided by and to the storage and network administrators. It is part of a series of iSCSI Quick Connect guides for multiple operating systems. Note that switch and storage configuration are outside the scope of this guide.

The information in this guide is for experienced system administrators who are familiar with server, network, data center, and SAN storage concepts and technologies.

## 2.0 iSCSI Basics

iSCSI has been in development since the early 2000s and Intel has been offering iSCSI solutions for over a decade. iSCSI is a proven and powerful Storage Area Networking (SAN) protocol, providing data availability, performance, and ease of use. Being a storage protocol that can be routed, iSCSI imposes no inherent distance limitations and is scalable across LAN and Wide Area Network (WAN) infrastructures.

The iSCSI Qualified Name (IQN) is typically shown as the literal IQN string plus date, reverse domain, and optional text such as storage target name as shown in the example that follows. The IQN or iSCSI name is used when assigning the Logical Unit Number (LUN) on the external storage. In some applications, there is the ability to customize the IQN. Basic iSCSI configuration includes setup of the storage array by creating the LUN and initiator group then assigning the server's iSCSI IQN to that initiator group.

```
Naming      String defined by
Type Date   Auth    "example.com" naming authority
+--+-----+ +-----+ +-----+
iqn.1998-01.com.microsoft:myservername-123abc0
```

## 3.0 Administrative Ownership

Basic iSCSI connectivity touches three technology disciplines: server, network, and storage. The server administrator provides the IQN to the storage administrator and sets up the host with an IP address provided by the network administrator. Besides IP assignment, the network administrator ensures the network is setup end-to-end. The storage administrator creates the LUN and host entity then assigns each to a storage group to create the LUN masking and provides the target IQN to the server administrator. A single host in a host record implies LUN masking.



**Table 1. Administrative Ownership Table**

Server Administrator	<ol style="list-style-type: none"><li>1. Assign the IP address provided by the network administrator.</li><li>2. Identify the host IQN.</li><li>3. Provide the space requirements, IQN, and IP address to the storage administrator.</li><li>4. Set the discovery IP address for the host's basic storage connection.</li><li>5. Set up the host for any security policies.</li><li>6. Format and assign the drive identifier on the host.</li></ol>
Network Administrator	<ol style="list-style-type: none"><li>1. Assign the host IP address to the server administrator.</li><li>2. Register the IP address into the DNS.</li><li>3. Ensure end-to-end IP connectivity between the host and storage array.</li></ol>
Storage Administrator	<ol style="list-style-type: none"><li>1. Create a host record.<ol style="list-style-type: none"><li>a. Assign an IP address to the host record.</li><li>b. Assign an IQN to the host record.</li></ol></li><li>2. Create a LUN/target.</li><li>3. Create a storage group.<ol style="list-style-type: none"><li>a. Assign a host record to the storage group.</li><li>b. Assign the LUN to the storage group.</li></ol></li></ol>

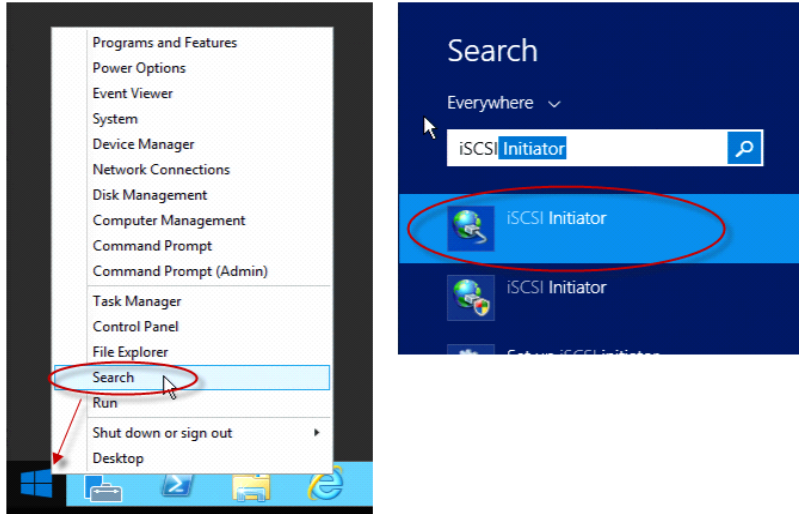
## 4.0 Network Setup

The network administrator owns IP address assignment, network switch port configuration, and end-to-end connectivity between the storage array and the server. Because iSCSI data traffic can be routed with network speeds now ranging up to 40 Gb/s, the network administrator must understand the data flow and architecture of the data center to best place servers for optimal performance. Coordination of the technical resources is imperative for a successful implementation.

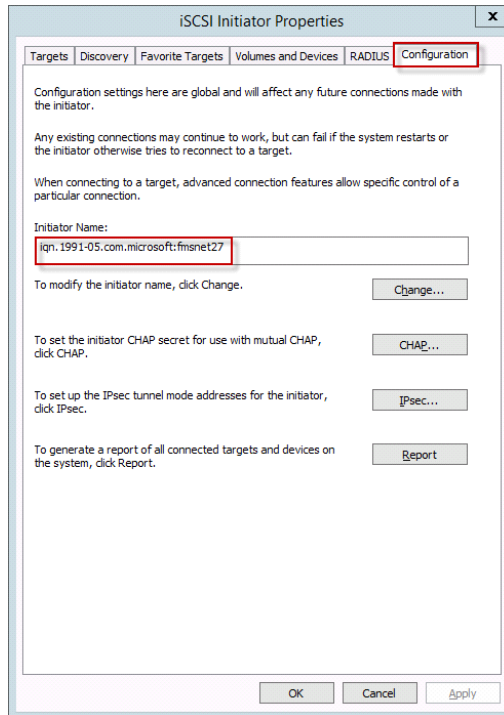
## 5.0 Obtaining the IQN and IP Address in Windows

This section describes how to obtain an IQN using the Windows operating system.

1. At the Start Menu, right-click to search and launch the iSCSI Initiator Properties utility as shown:



2. In the iSCSI Initiator Properties utility, navigate to the Configuration tab to get the IQN or Initiator Name as shown:





3. Use PowerShell ipconfig from a command prompt to get the server's IP address as follows:

```
PS C:\> Get-NetIPConfiguration

InterfaceAlias      : Ethernet 1
InterfaceDescription : Intel(R) Ethernet Converged Network Adapter X710
NetProfile.Name     : Unidentified network
IPv4Address         : 192.168.100.102
IPv4DefaultGateway :
DNSServer           : fec0:0:0:ffff::1
                   : fec0:0:0:ffff::2
                   : fec0:0:0:ffff::3

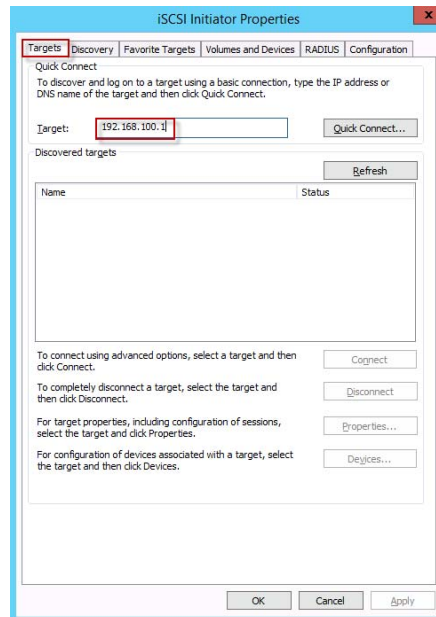
PS C:\>
```

4. The server administrator provides both the IQN and the IP address to the storage administrator. The storage administrator uses the IQN and IP address to assign a LUN to the host.

## 6.0 Windows Operating System Setup

This section describes the server steps once the storage administrator has created the storage target. The storage administrator provides the Target IP address and IQN once the target has been created.

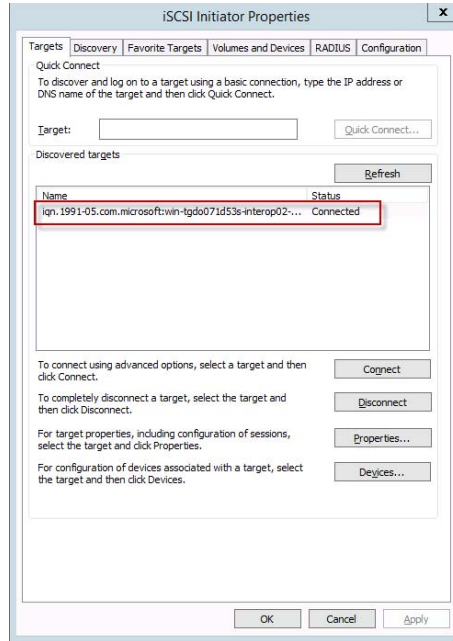
1. Return to the iSCSI Initiator Properties utility and navigate to the Targets tab. Using the target IP provided by the storage administrator, enter the IP address of the storage array in the Target dialog box. Click the Quick Connect button to establish the connection between the server and the storage array as shown:



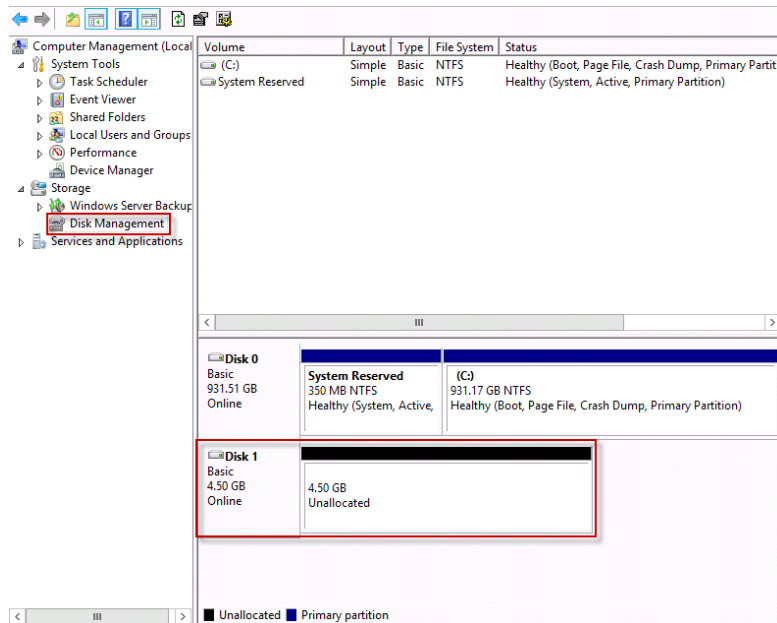




2. Select the IQN provided by the storage administrator and click the Connect button to establish a connection between the server and the target as shown:



3. Navigate to the Disk Management area of Server Manager and scan for new disks. Add and initialize the newly added storage as necessary to create a new volume as shown:





## 7.0 Summary

The Intel® Ethernet Converged Network Adapter X710/XL710 10 GbE and 40 GbE solutions fully support a wide range of storage capabilities. Customers get the ease of Ethernet support along with Windows iSCSI storage support in a single adapter.

For more information on iSCSI on Windows refer to the [Windows Server® 2008/2012 iSCSI Users Guide](#).

For more iSCSI configuration information using Intel® Server Adapters refer to the [Intel® Ethernet Unified Networking for iSCSI](#) or the Intel® XL710/X710 product briefs.