

????? <http://benjr.tw/?q=node/505#comment-184>

????? iSCSI ???????? Intel ?? Intel® iSCSI Remote Boot ?? ROM ???? iSCSI Boot ??? ?????????? Intel ?????????????? ???? iSCSI ?????????? <http://support.intel.com/support/network/iscsi/remotboot/> ?????.

??????? Intel® iSCSI Remote Boot ?????,???????Intel PCI-Express Server ??? Gigabit family ??????.???????????????? ??????.

- Intel® Gigabit CT Desktop Adapter(**Controller:82574L**)
- Intel® Gigabit ET Dual Port Server Adapter(**Controller:82576**)
- Intel® Gigabit EF Dual Port Server Adapter(**Controller:82576**)
- Intel® Gigabit ET Quad Port Server Adapter(**Controller:82576**)
- Intel® PRO/1000 PT Quad Port Server Adapter(**Controller:82571EB**)
- Intel® PRO/1000 PT Quad Port LP Server Adapter(**Controller:82571EB**)
- Intel® PRO/1000 PF Quad Port Server Adapter(**Controller:82571EB**)
- Intel® PRO/1000 PT Dual Port Server Adapter(**Controller:82571EB**)
- Intel® PRO/1000 PF Dual Port Server Adapter(**Controller:82571EB**)
- Intel® PRO/1000 PT Server Adapter(**Controller:82572EI**)
- Intel® PRO/1000 PF Server Adapter(**Controller:82572EI**)
- Intel® Gigabit PT Quad Port Server ExpressModule(**Controller:82571**)
- Intel® 10 Gigabit AF DA Dual Port Server Adapter(**Controller:82598EB**)
- Intel® 10 Gigabit AT Server Adapter(**Controller:82598EB**)
- Intel® 10 Gigabit XF SR Server Adapter(**Controller:82598EB**)
- Intel® 10 Gigabit XF LR Server Adapter(**Controller:82598EB**)
- Intel® 10 Gigabit XF SR Dual Port Server Adapter(**Controller:82598EB**)
- Intel® 10 Gigabit CX4 Dual Port Server Adapter(**Controller:82598EB**)

????????????? iSCSI Remote Boot ? driver,????????????????????????????????.

- Microsoft\* Windows\* Server 2003 SP1, SP2, R2 x86
- Microsoft Windows Server 2008 x86
- Red Hat\* Enterprise Linux 4 U3, Red Hat\* Enterprise Linux 5
- Novell SUSE\* Linux Enterprise 9 SP3, Novell SUSE\* Linux Enterprise 10

**?? iSCSI Remote Boot ROM:**

Intel ?????????? Intel iSCSI Network Adapter Boot Configuration Utility (iSCSIUtl) ??? DOS ???,????????????? DOS ???? Intel NIC firmware ? iSCSI Remote Boot ROM.????????????????????????? iSCSIUtl\DOS\iscsiutl.exe ???? Intel NIC ? iSCSI Remote Boot ROM ??????????????:  
iSCSIUtl -[OPTION] or -[OPTION]=[VALUE]

```
C:\iscsiutl -all -up
Intel(R) iSCSI Boot Utility
iSCSIUtl version 2.3.17.00
Copyright (C) 2003-2009 Intel Corporation

Programming flash on part 1 with iSCSI Boot image
An Intel(R) Boot Agent setting has been detected on this device. Programming
```

this device with Intel(R) iSCSI Boot will erase this setting.

Would you like to continue? (Y)es or (N)o:Y

\*

Flash update successful.

Flash not enabled on port 2

Use the "-FLASHENABLE" parameter to enable to flash

Port	Network Address	Series	WOL	Boot ROM Type	Version
1	001517785DD6	Gigabit	YES	iSCSI Enabled	2.3.17
2	001517785DD7	Gigabit	N/A	FLASH Disabled	2.3.17

pre-installed Intel Boot Agent image Y(yes) ,?????

ISCSIUTL -NIC=1 -FLASHENABLE

Intel Option ROM

Intel(R) iSCSI Boot version 2.3.17  
 Copyright (c) 2003-2009 Intel Corporation. All rights reserved.  
 Press ESC key to skip iSCSI boot initialization.  
 Press <Ctrl-D> to run setup...

<Ctrl-D> Intel iSCSI Remote Boot ? Option ROM.?? iSCSI initiator

**?? iSCSI Remote Boot**

Intel ? Option ROM ??? iSCSI Target ??? Lun ,??? iSCSI Target RHEL5 ? iSCSI Target ??? [RHEL5 - iSCSI IP-SAN](#) ??? Intel iSCSI Remote Boot ? option ROM.

?? iSCSI Remote Boot Port Selection Menu ???????????? Intel iSCSI Remote Boot-capable adapters.?????????  
 ??? Intel ??? PCI device ID, PCI bus/device/function ?? MAC Address

?????????? 10 iSCSI Remote Boot-capable ports ,????????????,???? Server ??? 10 ??????????.????????? iSCSI  
 Remote Boot status ,????????? BOOT:PRIMARY, BOOT:SECONDARY

Boot ?????????????.

- **Primary:**  
 ??????? Primary(? 'P' ?????????? Primary) Intel iSCSI Remote Boot ??????? iSCSI Target ??????????.????  
 ????????????? Primary.
- **secondary:**  
 ??????? secondary(? 'S' ?????????? secondary) , ??? Primary ?????? secondary ??? iSCSI Target ??????.??  
 ????????????? secondary.
- ? 'D' ??? iSCSI Remote Boot ???????????.
- ? 'B' ?????????? LED ??.
- ? 'ESC' ?????????.

???? iSCSI Boot ROM ?????????????????,???????????????? PRIMARY ?????? SECONDARY.

???????????? iSCSI setup menu ??????????:

- **iSCSI Remote Boot Configuration**

??????? iSCSI Remote Boot initiator ? target ?????? IP ,name ?? Boot Lun ??????.

- **CHAP Configuration**

?? iSCSI ??? CHAP(Challenge Handshake Authentication Protocol) ??????,??????? MD5 ??????.????  
????????????????????.

- **Discard Changes and Exit**

????? iSCSI Remote Boot Configuration ?? CHAP Configuration ??????"Discard Changes and Exit" ?  
???????????????????? "iSCSI Remote Boot Port Selection Menu

- **Save Changes and Exit**

?? "Save Changes and Exit" ?????? iSCSI Remote Boot Configuration ?? CHAP Configuration ??????  
??,??????? "iSCSI Remote Boot Port Selection Menu

?????? "SCSI Boot Configuration"

?????? "Initiator" ? "Target" ?,?????????? "Intel iSCSI Remote Boot " ??? "Initiator" ????.

- **Use Dynamic IP Configuration (DHCP)**

???? DHCP ??? iSCSI ?????????? DHCP ?? client IP address, subnet mask, and gateway IP address.

- **Initiator Name**

?????? iSCSI initiator name ?????? iSCSI target ???? Intel iSCSI Remote Boot ???.

- **Initiator IP**

????? IP ? IP ???? Target ????????? Target ????.

- **Subnet Mask**

IP ? subnet-mask ??????? IP ???.

- **Gateway IP**

??? Target ? Initiator ?????????? gateway ??????.

?????? Target ?????,?? Target Name(?? IQN ) ??????????,???? iSCSI Target ?? IP.

- **Use DHCP for iSCSI Target Information**

???? DHCP ??? iSCSI ?????????? DHCP ?? iSCSI target's IP address, IP port number, iSCSI target name, and SCSI LUN ID.

- **Target Name**

Target ?? IQN (iSCSI Qualified Name)???? iqn.yyyy-mm.<reversed domain name>[:identifier] .

- **Target IP**  
iSCSI Target ?? IP ??.
- **Target Port**  
iSCSI ???? TCP Port Number(??? 3260).
- **Boot LUN**  
?? SCSI RAID ???? SCSI HD ??????????(LUN),SCSI ??????????????????????,?? LUN ?? 0 ???? RHEL5 ? iSCSI Target ? lun0 ?????????? controller device.

iSCSI ?? CHAP-Challenge Handshake Authentication Protocol(? MD5 ??????????),?????. ?? CHAP ??:?????????,??  
?? Target ?????.

- **User Name**  
iSCSI target ????? CHAP ?????.
- **Target Secret**  
iSCSI target ????? CHAP ?. ?????? Initiator Secret ??????????.
- **Use Mutual CHAP**  
??(Mutual) CHAP ??,????????,?? Target ???? Initiator ??????????
- **Initiator Secret**

iSCSI Initiator Mutual CHAP ?? ?????? Target Secret ??????????.

?? iSCSI ? drive.

```
Intel(R) iSCSI Boot version 2.3.17
Copyright (c) 2003-2009 Intel Corporation. All rights reserved.
Press ESC key to skip iSCSI boot initialization.
Initializing adapter configuration - MAC address(001517785DD6).
Using STATIC configuration for primary port, please wait.
iSCSI Target Name      : iqn.2009-4.bios:storage
iSCSI Target IP Address : 192.8.1.1
LUN ID: 1              Port: 3260
iSCSI Initiator IP     : 192.8.1.24
iSCSI Gateway IP      : 192.8.1.1
iSCSI Initiator Name   : iqn.ben

Attempting to connect to target disk using MAC address(001517785DD6)
LUN: 1 DEVICE: IET VIRTUAL-DISK 18.63 GB
```

BIOS Boot Menu

??? Intel iSCSI Remote Boot ?? BIOS ? Boot Menu ????? Intel® iSCSI Remote Boot ??? ?????????? IBM ? Server ?  
??? Boot Menu ????????????

