Rocky Enterprise Linux 9.2 Manual Pages on command 'iscsiadm.8'

$ man iscsiadm.8

ISCSIADM(8)   Linux Administrator's Manual   ISCSIADM(8)

NAME

    iscsiadm - open-iscsi administration utility

SYNOPSIS

    iscsiadm -m discoverydb [-hV] [-d debug_level] [-P printlevel] [-I iface

    -t type -p ip:port [-lD]] | [[-p ip:port -t type] [-o operation] [-n name] [-v value]

    [-lD]]

    iscsiadm -m discovery [-hV] [-d debug_level] [-P printlevel] [-I iface] [-t type] [-p

    ip:port] [-l]

    iscsiadm -m node [-hV] [-d debug_level] [-P printlevel] [-L all,manual,automatic,onboot]

    [-W]   [-U   all,manual,automatic,onboot]   [-S] [[-T targetname -p ip:port -I iface]

    [-l|-u|-R|-s]] [[-o operation] [-n name] [-v value] [-p ip:port]]

    iscsiadm -m session [-hV] [-d debug_level] [-P printlevel] [-r sessionid|sysfsdir [-R]

    [-u|-s|-o new]]

    iscsiadm -m iface [-hV] [-d debug_level] [-P printlevel] [-I ifacename | -H hostno|MAC] [

    [-o operation] [-n name] [-v value]] [-C ping [-a ip] [-b packetsize] [-c count] [-i in?

    terval]]

    iscsiadm -m fw [-d debug_level] [-l] [-W]

    iscsiadm -m host [-P printlevel] [-H hostno|MAC] [[-C chap [-x chap_tbl_idx]] | [-C

    flashnode [-A portal_type] [-x flashnode_idx]] | [-C stats]] [[-o operation] [-n name]

    [-v value]]

    iscsiadm -k priority

DESCRIPTION

The iscsiadm utility is a command-line tool allowing discovery and login to iSCSI targets, as well as access and management of the open-iscsi database.

Open-iscsi does not use the term node as defined by the iSCSI RFC, where a node is a sin? gle iSCSI initiator or target. Open-iscsi uses the term node to refer to a portal on a target.

For session mode, a session id (sid) is used. The sid of a session can be found by running iscsiadm -m session -P 1. The session id and sysfs path are not currently persistent and is partially determined by when the session is setup.

Note that many of the node and discovery operations require that the iSCSI daemon (iscsid) be running.

OPTIONS

-a, --ip=ipaddr

   ipaddr can be IPv4 or IPv6.

   This option is only valid for ping submode.

-A, --portal_type=[ipv4|ipv6]

   Specify the portal type for the new flash node entry to be created.

   This option is only valid for flashnode submode of host mode and only with new op? eration.

-b, --packetsize=packetsize

   Specify the ping packetsize.

   This option is only valid for ping submode.

-c, --count=count

   count specify number of ping iterations.

   This option is only valid for ping submode.

-C, --submode=op

   Specify the submode for mode. op must be name of submode.

   Currently iscsiadm support ping as submode for iface. For example:

   iscsiadm -m iface -I ifacename -C ping -a ipaddr -b packetsize -c count -i interval

   For host, it supports chap , flashnode and stats as submodes. For example:

   iscsiadm -m host -H hostno -C chap -x chap_tbl_idx -o operation

   iscsiadm -m host -H hostno -C flashnode -x flashnode_idx -o operation

   iscsiadm -m host -H hostno -C stats

-d, --debug=debug_level

print debugging information. Valid values for debug_level are 0 to 8.

-h, --help

display help text and exit

-H, --host=[hostno|MAC]

The host argument specifies the SCSI host to use for the operation. It can be the

scsi host number assigned to the host by the kernel's scsi layer, or the MAC ad?

dress of a scsi host.

-i, --interval=interval

interval specify delay between two ping iterations.

This option is only valid for ping submode.

-I, --interface=[iface]

The interface argument specifies the iSCSI interface to use for the operation.

iSCSI interfaces (iface) are defined in /etc/iscsi/ifaces. For hardware iSCSI

(qla4xxx) the iface config must have the hardware address (iface.hwaddress = port's

MAC address) and the driver/transport_name (iface.transport_name). The iface's name

is then the filename of the iface config. For software iSCSI, the iface config must

have either the hardware address (iface.hwaddress), or the network layer's inter?

face name (iface.net_ifacename), and it must have the driver/transport_name

The available drivers/iscsi_transports are tcp (software iSCSI over TCP/IP), iser

(software iSCSI over InfiniBand), qla4xxx (Qlogic 4XXXX and 82XXX HBAs), cxgb3i and

cxgb4i (Chelsio T3 and T4 adapters), bnx2i (QLogic Netextreme II adapters),

be2iscsi (Emulex 10G adapter), qedi (QLogic QEDI 25/40/100Gb adapter), and ocs

(Emulex One Connect storage). Some of these are considered experimental, as they

are not fully tested.

The hwaddress is the MAC address or for software iSCSI it may be the special value

default which directs the initiator to not bind the session to a specific hardware

resource and instead allow the network or InfiniBand layer to decide what to do.

There is no need to create an iface config with the default behavior. If you do not

specify an iface, then the default behavior is used.

As mentioned above there is a special iface name default. There are others which do

not bind the session to a specific card, but instead bind the session to the trans?

port: iser, cxgb3i, cxgb4i, and bnx2i.

In discovery mode multiple interfaces can be specified by passing in multiple

-I/--interface instances. For example:

sh# iscsiadm -m discoverydb -t st -p ip:port -I iface0 -I iface2 --discover

Will direct iscsiadm to setup the node db to create records which will create ses?

sions through the two intefaces passed in.

In node mode, only a single interface is supported in each call to iscsiadm.

This option is valid for discovery, node and iface mode.

-k, --killiscsid=[priority]

Currently priority must be zero. This will immediately stop all iscsid operations

and shutdown iscsid. It does not logout any sessions. Running this command is the

same as doing killall iscsid. Neither should normally be used, because if iscsid is

doing error recovery or if there is an error while iscsid is not running, the sys?

tem may not be able to recover. This command and iscsid's SIGTERM handling are ex?

perimental.

-D, --discover

Discover targets using the discovery record with the recid matching the the dis?

covery type and portal passed in. If there is no matching record, it will be cre?

ated using the iscsid.conf discovery settings. This must be passed in discoverydb

mode to instruct iscsiadm to perform discovery.

This option is only valid for SendTargets discovery mode.

-l, --login

For node and fw mode, login to a specified record. For discovery mode, login to all

discovered targets.

This option is only valid for discovery and node modes.

-L, --loginall=[all|manual|automatic|onboot]

For node mode, login all sessions with the node or conn startup values passed in or

all running session, except ones marked onboot, if all is passed in.

This option is only valid for node mode (it is valid but not functional for session

mode).

-W, ---no_wait

In node, discovery, or firmware mode, do not wait for a response from the targets.

This means that success will be returned if the command is able to send the login

requests, whether or not they succeed. In this case, it will be up to the caller to

poll for success (i.e. session creation).

-m, --mode op

    specify the mode. op must be one of discovery, discoverydb, node, fw, host iface or

    session.

    If no other options are specified: for discovery, discoverydb and node, all of

    their respective records are displayed; for session, all active sessions and con?

    nections are displayed; for fw, all boot firmware values are displayed; for host,

    all iSCSI hosts are displayed; and for iface, all ifaces setup in /etc/iscsi/ifaces

    are displayed.

-n, --name=name

    In node mode, specify a field name in a record. In flashnode submode of host mode,

    specify name of the flash node parameter.

    For use with the update operator.

-o, --op=op

    Specifies a database operator op. op must be one of new, delete, update, show or

    nonpersistent.

    For iface mode, apply and applyall are also applicable.

    For flashnode submode of host mode, login and logout are also applicable.

    This option is valid for all modes except fw. Delete should not be used on a run?

    ning session. If it is iscsiadm will stop the session and then delete the record.

    new creates a new database record for a given object. In node mode, the recid is

    the target name and portal (IP:port). In iface mode, the recid is the iface name.

    In discovery mode, the recid is the portal and discovery type.

    In session mode, the new operation logs in a new session using the same node data?

    base and iface information as the specified session.

    In discovery mode, if the recid and new operation is passed in, but the --discover

    argument is not, then iscsiadm will only create a discovery record (it will not

    perform discovery). If the --discover argument is passed in with the portal and

    discovery type, then iscsiadm will create the discovery record if needed, and it

    will create records for portals returned by the target that do not yet have a node

    DB record.

    delete deletes a specified recid. In discovery mode, if iscsiadm is performing dis?

    covery it will delete records for portals that are no longer returned.

    update will update the recid with name to the specified value. In discovery mode,

if iscsiadm is performing discovery the recid, name and value arguments are not needed. The update operation will operate on the portals returned by the target, and will update the node records with info from the config file and command line.

show is the default behaviour for node, discovery and iface mode. It is also used when there are no commands passed into session mode and a running sid is passed in. name and value are currently ignored when used with show.

nonpersistent instructs iscsiadm to not manipulate the node DB.

apply will cause the network settings to take effect on the specified iface.

applyall will cause the network settings to take effect on all the ifaces whose MAC address or host number matches that of the specific host.

login will log into the specified flash node entry.

logout does the logout from the given flash node entry.

-p, --portal=ip[:port]

Use target portal with ip-address ip and port. If port is not passed in the default port value is 3260.

IPv6 addresses can be specified as [ddd.ddd.ddd.ddd]:port or ddd.ddd.ddd.ddd.

Hostnames can also be used for the ip argument.

This option is only valid for discovery, or for node operations with the new opera? tor.

This should be used along with --target in node mode, to specify what the open-iscsi docs refer to as a node or node record. Note: open-iscsi's use of the word node, does not match the iSCSI RFC's iSCSI Node term.

-P, --print=printlevel

If in node mode print nodes in tree format. If in session mode print sessions in tree format. If in discovery mode print the nodes in tree format.

-T, --targetname=targetname

Use target targetname.

This should be used along with --portal in node mode, to specify what the open-iscsi docs refer to as a node or node record. Note: open-iscsi's use of the word node, does not match the iSCSI RFC's iSCSI Node term.

-r, --sid=sid | sysfsdir

Use session ID sid. The sid of a session can be found from running iscsiadm in ses? sion mode with the --info argument.

Instead of sid, a sysfs path containing the session can be used. For example using one of the following: /sys/devices/platform/hostH/sessionS/targetH:B:I/H:B:I:L, /sys/devices/platform/hostH/sessionS/targetH:B:I,   or   /sys/devices/plat‐ form/hostH/sessionS, for the sysfsdir argument would result in the session with sid S to be used.

sid | sysfsdir is only required for session mode.

-R, --rescan

In session mode, if sid is also passed in rescan the session. If no sid has been passed in rescan all running sessions.

In node mode, rescan a session running through the target, portal, iface tuple passed in.

-s, --stats

Display session statistics. This option when used with host mode, displays host statistics.

-S, --show

When displaying records, do not hide masked values, such as the CHAP secret (pass‐ word).

This option is only valid for node and session mode.

-t, --type=type

type must be sendtargets (or abbreviated as st), slp, isns or fw. Currently only sendtargets, fw, and iSNS is supported, see the DISCOVERY TYPES section.

This option is only valid for discovery mode.

-u, --logout

logout for a specified record.

This option is only valid for node and session mode.

-U, --logoutall=[all,manual,automatic|onboot]

logout all sessions with the node or conn startup values passed in or all running session, except ones marked onboot, if all is passed in.

This option is only valid for node mode (it is valid but not functional for session mode).

-v, --value=value

Specify a value for use with the update operator.

This option is only valid for node mode and flashnode submode of host mode.

-V, --version

    display version and exit

-x, --index=index

    Specify the index of the entity to operate on.

    This option is only valid for chap and flashnode submodes of host mode.

DISCOVERY TYPES

    iSCSI defines 3 discovery types: SendTargets, SLP, and iSNS.

    A special discovery type called fw (for firmware) is also supported, for discoverying

    firmware interfaces, and populating the interface database in the process.

    SendTargets

        A native iSCSI protocol which allows each iSCSI target to send a list of available

        targets to the initiator.

    SLP   Optionally an iSCSI target can use the Service Location Protocol (SLP) to announce

        the available targets. The initiator can either implement SLP queries directly or

        can use a separate tool to acquire the information about available targets.

    iSNS iSNS (Internet Storage Name Service) records information about storage volumes

        within a larger network. To utilize iSNS, pass the address and optionally the port

        of the iSNS server to do discovery to.

    fw   Firmware mode.   Several NICs and systems contain a mini iSCSI initiator which can

        be used for boot. To get the values used for boot the fw option can be used. Doing

        fw discovery, does not store persistent records in the node or discovery DB, be?

        cause the values are stored in the system's or NIC's resource.

        Performing fw discovery will print the portals, like with other discovery methods.

        To see other settings like CHAP values and initiator settings, like you would in

        node mode, run iscsiadm -m fw.

    Note that the SLP implementation is under development and currently is not supported.

EXIT STATUS

    On success 0 is returned. On error one of the return codes below will be returned.

    Commands that operate on multiple objects (sessions, records, etc), iscsiadm/iscsistart

    will return the first error that is encountered. iscsiadm/iscsistart will attempt to exe?

    cute the operation on the objects it can. If no objects are found ISCSI_ERR_NO_OBJS_FOUND

    is returned.

    0   ISCSI_SUCCESS - command executed successfully.

1   ISCSI_ERR - generic error code.

2   ISCSI_ERR_SESS_NOT_FOUND - session could not be found.

3   ISCSI_ERR_NOMEM - could not allocate resource for operation.

4   ISCSI_ERR_TRANS - connect problem caused operation to fail.

5   ISCSI_ERR_LOGIN - generic iSCSI login failure.

6   ISCSI_ERR_IDBM - error accessing/managing iSCSI DB.

7   ISCSI_ERR_INVAL - invalid argument.

8   ISCSI_ERR_TRANS_TIMEOUT - connection timer exired while trying to connect.

9   ISCSI_ERR_INTERNAL - generic internal iscsid/kernel failure.

10   ISCSI_ERR_LOGOUT - iSCSI logout failed.

11   ISCSI_ERR_PDU_TIMEOUT - iSCSI PDU timedout.

12   ISCSI_ERR_TRANS_NOT_FOUND - iSCSI transport module not loaded in kernel or iscsid.

13   ISCSI_ERR_ACCESS - did not have proper OS permissions to access iscsid or execute
     iscsiadm command.

14   ISCSI_ERR_TRANS_CAPS - transport module did not support operation.

15   ISCSI_ERR_SESS_EXISTS - session is logged in.

16   ISCSI_ERR_INVALID_MGMT_REQ - invalid IPC MGMT request.

17   ISCSI_ERR_ISNS_UNAVAILABLE - iSNS service is not supported.

18   ISCSI_ERR_ISCSID_COMM_ERR - a read/write to iscsid failed.

19   ISCSI_ERR_FATAL_LOGIN - fatal iSCSI login error.

20   ISCSI_ERR_ISCSID_NOTCONN - could not connect to iscsid.

21   ISCSI_ERR_NO_OBJS_FOUND - no records/targets/sessions/portals found to execute op?
     eration on.

22   ISCSI_ERR_SYSFS_LOOKUP - could not lookup object in sysfs.

23   ISCSI_ERR_HOST_NOT_FOUND - could not lookup host.

24   ISCSI_ERR_LOGIN_AUTH_FAILED - login failed due to authorization failure.

25   ISCSI_ERR_ISNS_QUERY - iSNS query failure.

26   ISCSI_ERR_ISNS_REG_FAILED - iSNS registration/deregistration failed.

27   ISCSI_ERR_OP_NOT_SUPP - operation not support

28   ISCSI_ERR_BUSY - device or resource in use

29   ISCSI_ERR_AGAIN - operation failed, but retrying later may succeed

30   ISCSI_ERR_UNKNOWN_DISCOVERY_TYPE - unknown discovery type

31   ISCSI_ERR_CHILD_TERMINATED - child process terminated

32   ISCSI_ERR_SESSION_NOT_CONNECTED - session likely not connected

EXAMPLES

Discover targets at a given IP address:

sh# iscsiadm --mode discoverydb --type sendtargets --portal 192.168.1.10 --discover

Login, must use a node record id found by the discovery:

sh# iscsiadm --mode node --targetname iqn.2001-05.com.doe:test --portal

192.168.1.1:3260 --login

Logout:

sh# iscsiadm --mode node --targetname iqn.2001-05.com.doe:test --portal

192.168.1.1:3260 --logout

List node records:

sh# iscsiadm --mode node

Display all data for a given node record:

sh# iscsiadm --mode node --targetname iqn.2001-05.com.doe:test --portal

192.168.1.1:3260

FILES

/etc/iscsi/iscsid.conf

The configuration file read by iscsid and iscsiadm on startup.

/etc/iscsi/initiatorname.iscsi

The file containing the iSCSI InitiatorName and InitiatorAlias read by iscsid and

iscsiadm on startup.

/etc/iscsi/nodes/

This directory contains the nodes with their targets.

/etc/iscsi/send_targets

This directory contains the portals.

SEE ALSO

iscsid(8)

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