# IceWall SSO

Version 10.0

# Registration Tool Manual

August 2010

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# – Table of Contents –

# 1   Overview

The IceWall SSO Registration Tool is used to register user information necessary to configure the execution environment of IceWall SSO in batch.

Using this tool, you can do the following:

**[General]**
  - Data generation for batch registration of users
  - Automatic password hashing (Options available: MD5, SHA1, and SHA256) ⑩⓪
  - Data encryption in product standard encryption format ⎡10.0⎤
     * For data encryption in the product standard encryption format, see "IceWall SSO Authentication DB Encryption Library Developer's Manual."
**[Oracle 11g (hereafter referred to as "ORACLE") edition]** ⑩⓪
  - Automatic SQL statement generation
**[Sun Java System Directory Server, Netscape Directory Server, Red Hat Directory Server (hereafter referred to as "LDAP") edition**
  - Automatic LDIF entry generation
**[OpenLDAP edition]** ⎡10.0⎤
  - Automatic LDIF entry generation
**[Novell eDirectory (hereafter referred to as "NED") edition]**
  - Automatic LDIF entry generation
**[CSV edition]**
  - Automatic CSV file creation
**[MySQL edition]**
  - Automatic SQL statement generation

Note that the Microsoft Active Directory edition is not supported.

## 1.1   Version designations in the text

The table below gives the meanings of the version designations added to the text.

| Designation | Meaning |
|:---:|---|
| ⎡10.0⎤ | An item added with the version enclosed in the square. In this case, the designation indicates the item was added with 10.0. |
| ⑩⓪ | An item where the specification was changed or function added with the version enclosed in the oval.  In this case, the designation indicates a specification change or added function with 10.0. |

## 2    Installation

When you install the Authentication Module (except for the Microsoft Active Directory edition) as described in the "IceWall SSO Installation Guide," the Registration tool is installed in the following folder:

**/opt/icewall-sso/tools**

### 2.1    Checking installed files

After installation has been done, ensure that the following files exist.

[ORACLE edition]

```
mkuser         : User data generation tool command
TEMPLATE.sql : Sample template (ORACLE edition)
DATA.txt       : Sample data
mkuser.seed    : Seed file
```

[LDAP edition]

```
mkuser         : User data generation tool command
TEMPLATE.ldif : Sample template (LDAP edition)
DATA.txt       : Sample data
mkuser.seed    : Seed file
```

[OpenLDAP edition] [10.0]

```
mkuser         : User data generation tool command
TEMPLATE.ldif : Sample template (OpenLDAP edition)
DATA.txt       : Sample data
mkuser.seed    : Seed file
```

[NED edition]

```
mkuser         : User data generation tool command
TEMPLATE.ldif : Sample template (NED edition)
DATA.txt       : Sample data
mkuser.seed    : Seed file
```

[CSV edition]

```
mkuser         : User data generation tool command
TEMPLATE.csv : Sample template (CSV edition)
DATA.txt       : Sample data
mkuser.seed    : Seed file
```

[MySQL edition]

```
mkuser         : User data generation tool command
TEMPLATE.sql : Sample template (MySQL edition)
DATA.txt       : Sample data
mkuser.seed    : Seed file
```

## 2.2 Environment setting after installation

Execute the commands below to set the environmental variable for library search.

For HP-UX

```
# export SHLIB_PATH=/opt/icewall-sso/lib32/mkuser
```

For Linux

```
# export LD_LIBRARY_PATH=/opt/icewall-sso/lib32/mkuser
```

## 2.3 Checking the version information 10.0

After installation, perform the following steps to see if the binary file for this version is installed. This information will also be necessary when you contact our customer support in cases where trouble occurs.

(1) Move to the directory where the Registration tool is installed.

```
# cd /opt/icewall-sso/tools
```

(2) Enter the following command to view the version information. An example is shown below.

For HP-UX

```
# what mkuser
mkuser:
       IceWall SSO mkuser
       Version: 10.00.00.xxxxxxX
       OS : HP-UX B.11.23
       CPU: Itanium
       Bit: 32bit
       (c) Copyright 2001-2010 Hewlett-Packard Development Compa
ny, L.P.
```

For Linux

```
# strings mkuser | grep '@(#)'
@(#)IceWall SSO mkuser
@(#)Version: 10.00.00.xxxxxxX
@(#)OS : Linux 2.6.18
@(#)CPU: x86_64
@(#)Bit: 32bit
@(#)(c) Copyright 2001-2010 Hewlett-Packard Development Company,
L.P.
```

## 3   mkuser command

The mkuser command loads the template file and data file to generate text data as SQL statements, LDIF entries, or in the CSV format.  The template file is the TEMPLATE.sql (for Oracle and MySQL editions), TEMPLATE.ldif (for LDAP, OpenLDAP, and NED editions), or TEMPLATE.csv (for CSV edition) file that have the skeleton code for SQL statements, LDIF entries, or CSV files respectively.   The data file is the DATA.txt file that defines the user information.
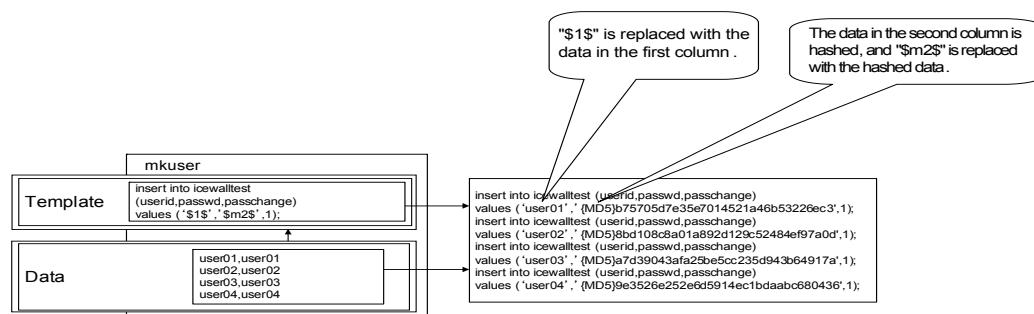


Processing overview (ORACLE edition)

**Syntax**

```
mkuser [template file name] [data file name] ([seed file name])
```

Be sure to specify the template and data file names as arguments when executing the mkuser command.
When generating data in the product standard encryption format, specify the seed file name.  If no seed file is specified, the mkuser.seed file in the directory where mkuser exists is loaded as the seed file.
See "4 Template File" for the specifications of the template file, "5 Data File" for the specifications of the data file, and "6 Seed file" for the specifications of the seed file.

**Execution example**
The following shows an execution example for the ORACLE edition.
See "7 Tool Execution/Output" for an output example after executing the mkuser command.

(1) Move to the directory where the Registration tool is installed.

```
# cd /opt/icewall-sso/tools
```

(2) Run mkuser.

```
# ./mkuser TEMPLATE.sql DATA.txt
```

## 4　Template File

The template file is used as a template to automatically generate text data as SQL statements or LDIF entries, or in the CSV format.  By specifying keywords to this file, the keywords are replaced with actual data.

The data substitution keywords which can be used in the template file are listed below.

| Keyword | Description |
|---|---|
| $n$ | Replaced with data in the nth column of the data file. The first column is specified as "1." |
| $mn$ or $Mn$ | Replaced with data in the nth column of the data file, hashed in MD5. |
| $sn$ or $Sn$ | Replaced with data in the nth column of the data file, hashed in SHA1. |
| $hn$ or $Hn$ [10.0] | Replaced with data in the nth column of the data file, hashed in SHA256. |
| $an$ or $An$ [10.0] | Replaced with data in the nth column of the data file, encrypted in the product standard encryption format (with the key length of 128 bits). |
| $bn$ or $Bn$ [10.0] | Replaced with data in the nth column of the data file, encrypted in the product standard encryption format (with the key length of 256 bits). |

The default contents of the template file are shown below.  Change them to SQL statements, LDIF entries, or CSV descriptions, as required by the environment and work details.

[ORACLE edition] (example)

```
insert into icewalltest ( userid,passwd,passchange,failcount,lockout,logonstop,logstatus ) values ( '$1$','$m2$','1','0','0','0','0' );
```

[LDAP edition] (example)

```
dn: uid=$1$,o=Alias.com
changetype: add
objectclass: top
objectclass: person
objectclass: organizationalPerson
objectclass: inetOrgPerson
cn: $1$
sn: $1$
uid: $1$
userPassword: $s2$
mobile: 1
passwordRetryCount: 0
employeeNumber: 0
homePostalAddress: 0
initials: 0
(Blank line)
```

* Be sure to put a blank line at the end of the template file.

[OpenLDAP edition] (example)  10.0

```
dn: uid=$1$,ou=icewalltest,dc=jpn,dc=hp,dc=com
changetype: add
objectclass: top
objectclass: person
objectclass: organizationalPerson
objectclass: inetOrgPerson
cn: $1$
sn: $1$
uid: $1$
userPassword: $s2$
mobile: 1
roomNumber: 0
employeeNumber: 0
homePostalAddress: 0
initials: 0
(Blank line)
```

* Be sure to put a blank line at the end of the template file.

[NED edition]　(example)

```
version: 1
dn: cn=$1$,o=Alias.com
changetype: add
objectclass: Top
objectclass: Person
objectclass: organizationalPerson
objectclass: inetOrgPerson
objectclass: ndsLoginProperties
cn: $1$
sn: $1$
uid: $1$
userPassword: $s2$
mobile: 1
workforceID: 0
employeeNumber: 0
homePostalAddress: 0
initials: 0
(Blank line)
```

\*　Be sure to put a blank line at the end of the template file.
\*　The template file for the NED edition installed by default contains "version:  1" on
　　the first line.  To use this tool, delete this line in advance.

[CSV edition] (example)

```
# Please delete a column name line and a comment line at the time of data
# creation. Moreover, please add this column line to the created data.
USERID,PASSWD,PASSWDEXP,PASSWDHIS,PASSCHANGE,CHGDATE,LOGON
DATE,LASTDATE,LOGONFAIL,FAILCOUNT,LOCKOUT,LOGONSTOP,LOCKDA
TE,LOGSTATUS
$1$,$m2$,,,1,,,,,0,0,0,,0
```

\*　The template file for the CSV edition installed by default contains comment lines
　　(1st and 2nd lines) and a column line (3rd line).  To use this tool, delete the
　　comment and column lines in advance.

[MySQL edition] (example)

```
insert into icewalltest ( userid,passwd,passchange,failcount,lockout,logonstop,logsta
tus ) values ( '$1$','$m2$','1','0','0','0','0' );
```

For the items which need to be registered as the user information, see the "IceWall
SSO Reference Manual."
Note that the maximum number of keywords which can be used with this tool is
limited to 65535 due to restriction by the specification.

## 5 Data File

The mkuser command reads the contents of this file and uses them with the definition in the template file to generate output.  In the following sample data file (DATA.txt), there are only user IDs and passwords.
The default settings of this file are shown below.  Edit the file in accordance with the user information you want to add.

Data file (example)
DATA.txt

```
user01,user01
user02,user02
user03,user03
user04,user04
```

Pay attention to the following when editing the file:

- Order the data items corresponding to the order of the substitution keywords ($n$) in the template file.
- When a null character corresponds to a substitution keyword, no hashing or encryption is done and the null character is output as is. ⌈10.0⌉
- Separate data items with commas. (CSV format)
- You cannot use a comma as data.
- A double quotation "" is treated as data.
- You can use an arbitrary name for the data file.  Specify the file name as an argument to the mkuser command.
- Be sure to end each line of the data file with a new line. ⌈10.0⌉

## 6 Seed File 〔10.0〕

This file is used to set the seed value used to encrypt data by the product standard encryption format.
The default settings of this file are shown below.
To use this file, delete the leading "#" and enter a seed value.

| |
|---|
| #DBIWCRYPTOSEED= |

● Format
- The file must be a text file.
- A line which starts with "#" is a comment line.
- An indented line is ignored (indentation is not allowed).
- The following types of characters are allowed for the seed value.
    Numbers (0 - 9)
    Alphabetical characters (a-z | A-Z)
    Symbols ("-" | "_" | "." | "!" | "~" | "*" | "(" | ")")
- The seed value must be a value from 1 to 255 bytes.

● Remarks
- The format is the same as the DBIWCRYPTOSEED item in the configuration file of the Authentication Module (cert.conf). Therefore, you can use the configuration file of the Authentication Module as the seed file by specifying the file path to it when invoking the mkuser command.
- You can specify an encrypted seed value starting with {IW}.
- The following are recommended for security:
    The seed file should be owned by the same user as the one executing the mkuser command.
    Permission for the seed file should be 400.

## 7   Tool Execution/Output

When the Registration tool is executed, text data (SQL statements or LDIF entries, or in the CSV format) is output to the standard output (usually a terminal).  The following shows execution examples.

**Execution example [ORACLE edition]**

```
# cd /opt/icewall-sso/tools
# ./mkuser TEMPLATE.sql DATA.txt
insert into icewalltest ( userid,passwd,passchange,failcount,lock
out,logonstop,logstatus ) values ( 'user01','{MD5}b75705d7e35e701
4521a46b532236ec3','1','0','0','0','0' );
insert into icewalltest ( userid,passwd,passchange,failcount,lock
out,logonstop,logstatus ) values ( 'user02','{MD5}8bd108c8a01a892
d129c52484ef97a0d','1','0','0','0','0' );
insert into icewalltest ( userid,passwd,passchange,failcount,lock
out,logonstop,logstatus ) values ( 'user03','{MD5}a7d39043afa25be
5cc235d943b64917a','1','0','0','0','0' );
insert into icewalltest ( userid,passwd,passchange,failcount,lock
out,logonstop,logstatus ) values ( 'user04','{MD5}9e3526e252e6d59
14ec1bdaabc680436','1','0','0','0','0' );
#
```

**Execution example [LDAP edition]**

```
# cd /opt/icewall-sso/tools
# ./mkuser TEMPLATE.ldif DATA.txt
dn: uid=user01,o=Alias.com
changetype: add
objectclass: top
objectclass: person
objectclass: organizationalPerson
objectclass: inetOrgPerson
cn: user01
sn: user01
uid: user01
userPassword: {SHA}BJf+TWdP43GUpvywiRPllu9qMH8=
mobile: 1
passwordRetryCount: 0
employeeNumber: 0
homePostalAddress: 0
initials: 0

dn: uid=user02,o=Alias.com
changetype: add
    .
    .
employeeNumber: 0
homePostalAddress: 0
```

```
initials: 0

#
```

## Execution example [OpenLDAP edition] 10.0

```
# cd /opt/icewall-sso/tools
# ./mkuser TEMPLATE.ldif DATA.txt
dn: uid=user01,ou=icewalltest,dc=jpn,dc=hp,dc=com
changetype: add
objectclass: top
objectclass: person
objectclass: organizationalPerson
objectclass: inetOrgPerson
cn: user01
sn: user01
uid: user01
userPassword: {SHA}BJf+TWdP43GUpvywiRPllu9qMH8=
mobile: 1
roomNumber: 0
employeeNumber: 0
homePostalAddress: 0
initials: 0

dn: uid=user02,ou=icewalltest,dc=jpn,dc=hp,dc=com
changetype: add
        .
        .
employeeNumber: 0
homePostalAddress: 0
initials: 0

#
```

## Execution example [NED edition]

```
# cd /opt/icewall-sso/tools
# ./mkuser TEMPLATE.ldif DATA.txt
version: 1
dn: cn=user01,o=Alias.com
changetype: add
objectclass: Top
objectclass: Person
objectclass: organizationalPerson
objectclass: inetOrgPerson
objectclass: ndsLoginProperties
cn: user01
sn: user01
uid: user01
userPassword: {SHA}BJf+TWdP43GUpvywiRPllu9qMH8=
mobile: 1
```

```
workforceID: 0
employeeNumber: 0
homePostalAddress: 0
initials: 0

version: 1
dn: cn=user02,o=Alias.com
changetype: add
objectclass: Top
objectclass: Person
objectclass: organizationalPerson
objectclass: inetOrgPerson
objectclass: ndsLoginProperties
cn: user02
sn: user02
uid: user02
userPassword: {SHA}p2WWdWaMKzTwpFbbqlCCADQNw2w=
mobile: 1
workforceID: 0
employeeNumber: 0
homePostalAddress: 0
initials: 0

version: 1
dn: cn=user03,o=Alias.com
changetype: add
objectclass: Top
objectclass: Person
objectclass: organizationalPerson
objectclass: inetOrgPerson
objectclass: ndsLoginProperties
cn: user03
sn: user03
uid: user03
userPassword: {SHA}bwkliKQ2ZeJKeReSS6IW9Q+3c30=
mobile: 1
workforceID: 0
employeeNumber: 0
homePostalAddress: 0
initials: 0

version: 1
dn: cn=user04,o=Alias.com
changetype: add
objectclass: Top
objectclass: Person
objectclass: organizationalPerson
objectclass: inetOrgPerson
objectclass: ndsLoginProperties
cn: user04
sn: user04
uid: user04
```

```
userPassword: {SHA}EbWr+8CRTbhY0myoqm8iJv7zb1k=
mobile: 1
workforceID: 0
employeeNumber: 0
homePostalAddress: 0
initials: 0


#
```

### Execution example [CSV edition]

```
# cd /opt/icewall-sso/tools
# ./mkuser TEMPLATE.csv DATA.txt
user01,{MD5}b75705d7e35e7014521a46b532236ec3,,,1,,,,,,0,0,0,,0
user02,{MD5}8bd108c8a01a892d129c52484ef97a0d,,,1,,,,,,0,0,0,,0
user03,{MD5}a7d39043afa25be5cc235d943b64917a,,,1,,,,,,0,0,0,,0
user04,{MD5}9e3526e252e6d5914ec1bdaabc680436,,,1,,,,,,0,0,0,,0
#
```

### Execution example [MySQL edition]

```
# cd /opt/icewall-sso/tools
# ./mkuser TEMPLATE.sql DATA.txt
insert into icewalltest ( userid,passwd,passchange,failcount,lock
out,logonstop,logstatus) values ('user01','{MD5}b75705d7e35e7014
521a46b532236ec3','1','0','0','0','0' );
insert into icewalltest ( userid,passwd,passchange,failcount,lock
out,logonstop,logstatus ) values ( 'user02','{MD5}8bd108c8a01a892
d129c52484ef97a0d','1','0','0','0','0' );
insert into icewalltest ( userid,passwd,passchange,failcount,lock
out,logonstop,logstatus ) values ( 'user03','{MD5}a7d39043afa25be
5cc235d943b64917a','1','0','0','0','0' );
insert into icewalltest ( userid,passwd,passchange,failcount,lock
out,logonstop,logstatus ) values ( 'user04','{MD5}9e3526e252e6d59
14ec1bdaabc680436','1','0','0','0','0' );
#
```

To use the output from the mkuser command in another command (e.g., sqlplus or ldapmodify), you need to output the result to a file. Redirect the output from mkuser to a file as shown below.

### Example of user information file creation by redirection (ORACLE edition and MySQL edition)

```
# ./mkuser TEMPLATE.sql DATA.txt > sample.sql
```

**Example of user information file creation by redirection (LDAP edition, OpenLDAP edition, and NED edition)**

```
# ./mkuser TEMPLATE.ldif DATA.txt > sample.ldif
```

**Example of user information file creation by redirection (CSV edition)**

```
# ./mkuser TEMPLATE.csv DATA.txt > sample.csv
```

## 7.1   Notes on using output result

Please note the following items when using the output from the Registration tool.
- For the NED edition, be sure to add "Version:  1" as the first line of the output file.
- For the CSV edition, the column names are required on the first line of the created CSV file.  Add the column line to the created file.
- If the value in the seed file is invalid, or the specified file does not exist, data is not encrypted but substituted as raw data. [10.0]

## 8    Registration to Authentication DB

Executing the Registration tool just creates the user information necessary for registering users to the Authentication DB, but does not register the users.  To actually register the users, use the output from the Registration tool in an appropriate command (e.g., sqlplus or ldapmodify).  Execution examples are shown below.

Note that no execution example is shown for the CSV edition because you have to use the created CSV file as the Authentication DB after inserting a column line.

### 8.1    Example of registration to Authentication DB (ORACLE edition)

The following shows an example to register users using the sqlplus command.

```
$ sqlplus scott/tiger @sample.sql
```

This example assumes the following conditions:
- The environment is one in which the sqlplus command can be used.
- The environment is one in which the user ID (scott) and password (tiger) can be used for login.
- The sample.sql file exists in the current directory and the user executing the command has read permission to the file.

Note: For details on SQL*Plus, see the product manual provided by Oracle.

### 8.2    Example of registration to Authentication DB (LDAP edition)

The following shows an example to register users using the ldapmodify command.

```
$ ldapmodify -h localhost -p 389 -D uid=admin,ou=Administrators,
ou=TopologyManagement,o=NetscapeRoot -w admpass -f sample.ldif
```

This example assumes the following conditions:
- The environment is one in which the ldapmodify command can be used.
- The environment is one in which the user ID
  (uid=admin,ou=Administrators,ou=TopologyManagement,
  o=NetscapeRoot) and password (admpass) can be used for login.
- The LDAP instance is running on the local port 389.
- The sample.ldif file exists in the current directory and the user executing the command has read permission to the file.

Note: For details of the ldapmodify command, see the product manual provided by the LDAP product vendor.

### 8.3 Example of registration to Authentication DB (OpenLDAP edition)

The following shows an example to register users using the ldapadd command.

```
$ ldapadd -h localhost -p 389 -D cn=Manager,dc=jpn,dc=hp,dc=com -
w admpass -f sample.ldif
```

This example assumes the following conditions:
- The environment is one in which the ldapadd command can be used.
- The environment is one in which the user ID (cn=Manager, dc=jpn, dc=hp, dc=com) and password (password) can be used for login.
- The OpenLDAP instance is running on the local port 389.
- The sample.ldif file exists in the current directory and the user executing the command has read permission to the file.

Note: For details of the ldapadd command, see the product manual of OpenLDAP.

### 8.4 Example of registration to Authentication DB (NED edition)

The following shows an example to register users using the ice command.

```
$ ice -S LDIF -f ./sample.ldif -D LDAP -s localhost -p 389 -d  cn=
admin,o=Alias.com -w admpass
```

This example assumes the following conditions:
- The environment is one in which the user ID (cn=admin, o=Alias.com) and password (admpass) can be used for login.
- The NED instance is running on the local port 389.
- The sample.ldif file exists in the current directory and the user executing the command has read permission to the file.
- The LDIF file contains "Version:  1" on the first line.

Note: For details of the ice command, see the product manual provided by Novell.

### 8.5 Example of registration to Authentication DB (MySQL edition)

The following shows an example to register users using the mysql command.

```
$ mysql -u root -p new_password icewalldb < sample.sql
```

This example assumes the following conditions:
- The environment is one in which the mysql command can be used.
- The environment is one in which the user ID (root) and password (new_password) can be used for login.
- The database name is "icewalldb."
- The sample.sql file exists in the current directory and the user executing the command has read permission to the file.

Note: For details of the mysql command, see the product manual of MySQL.