

# nis-util

## Reference Manual

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This document describes nis-util version 1.0  
and was prepared 30 November 2012.

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**NAME**

nis-util – NIS administration utilities

**DESCRIPTION**

The *nis-util* package is a collection of powerful tools for manipulating NIS map files.

I wrote nis-util because NIS maps are highly interrelated. In order to provide a stable working environment for users, it is essential the the system administrator have tools which report inconsistencies between NIS maps in a timely manner.

The nis-utils package contains a number of tools which can be used to generate input to *makedbm(8)*, in place of the *awk(1)* scripts traditionally used. These tools are far more exacting, and perform a number of input validations, in addition to the necessary reformatting.

In addition, each of these tools had a *checking* mode, which allows them to be validated against other files, *e.g.* validating *passwd(5)* files against *group(5)* files to make sure that the default groups actually exist.

**ARCHIVE SITE**

The latest version of *nis-util* is available on the Web from:

URL:	<a href="http://miller.emu.id.au/pmiller/software/nis-util/">http://miller.emu.id.au/pmiller/software/nis-util/</a>	
File:	<a href="#">index.html</a>	# the nis-util page
File:	<a href="#">nis-util-1.0.README</a>	# Description, from the tar file
File:	<a href="#">nis-util-1.0.lsm</a>	# Description, LSM format
File:	<a href="#">nis-util-1.0.spec</a>	# RedHat package specification
File:	<a href="#">nis-util-1.0.tar.gz</a>	# the complete source
File:	<a href="#">nis-util-1.0.pdf</a>	# Reference Manual

**BUILDING NIS-UTIL**

Full instructions for building *nis-util* may be found in the *BUILDING* file included in this distribution.

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## **RELEASE NOTES**

This section details the various features and bug fixes of the various releases. For excruciating and complete detail, and also credits for those of you who have generously sent me suggestions and bug reports, see the *etc/CHANGES.\** files.

### **Version 1.0**

No public release.

**NAME**

build nis-util – how to build the NIS administration utilities

**SPACE REQUIREMENTS**

You will need about 1MB to unpack and build the *nis-util* package. Your mileage may vary.

**BEFORE YOU START**

There are a few pieces of software you may want to fetch and install before you proceed with your installation of *nis-util*.

**GNU Groff**

The documentation for the *nis-util* package was prepared using the GNU Groff package (version 1.14 or later). This distribution includes full documentation, which may be processed into PostScript or DVI files at install time – if GNU Groff has been installed.

**GCC**

You may also want to consider fetching and installing the GNU C Compiler if you have not done so already. This is not essential. *nis-util* was developed using the GNU C++ compiler, and the GNU C++ libraries.

The GNU FTP archives may be found at `ftp.gnu.org`, and are mirrored around the world.

**SITE CONFIGURATION**

The **nis-util** package is configured using the *configure* program included in this distribution.

The *configure* shell script attempts to guess correct values for various system-dependent variables used during compilation, and creates the *Makefile* and *include/config.h* files. It also creates a shell script *config.status* that you can run in the future to recreate the current configuration.

Normally, you just *cd* to the directory containing *nis-util*'s source code and then type

```
% ./configure
...lots of output...
%
```

If you're using *csh* on an old version of System V, you might need to type

```
% sh configure
...lots of output...
%
```

instead to prevent *csh* from trying to execute *configure* itself.

Running *configure* takes a minute or two. While it is running, it prints some messages that tell what it is doing. If you don't want to see the messages, run *configure* using the quiet option; for example,

```
% ./configure --quiet
%
```

To compile the **nis-util** package in a different directory from the one containing the source code, you must use a version of *make* that supports the *VPATH* variable, such as *GNU make*. *cd* to the directory where you want the object files and executables to go and run the *configure* script. *configure* automatically checks for the source code in the directory that *configure* is in and in *..* (the parent directory). If for some reason *configure* is not in the source code directory that you are configuring, then it will report that it can't find the source code. In that case, run *configure* with the option `--srcdir=directory`, where *DIR* is the directory that contains the source code.

By default, *configure* will arrange for the *make install* command to install the **nis-util** package's files in */usr/local/bin*, and */usr/local/man*. There are options which allow you to control the placement of these files.

`--prefix=path`

This specifies the path prefix to be used in the installation. Defaults to */usr/local* unless otherwise specified.

`--exec-prefix=path`

You can specify separate installation prefixes for architecture-specific files files. Defaults to *\$(prefix)* unless otherwise specified.

`--bindir=path`

This directory contains executable programs. On a network, this directory may be shared between machines with identical hardware and operating systems; it may be mounted read-only. Defaults to `$(exec_prefix)/bin` unless otherwise specified.

`--mandir=path`

This directory contains the on-line manual entries. On a network, this directory may be shared between all machines; it may be mounted read-only. Defaults to `$(prefix)/man` unless otherwise specified.

`configure` ignores most other arguments that you give it; use the `--help` option for a complete list.

On systems that require unusual options for compilation or linking that the `nis-util` package's `configure` script does not know about, you can give `configure` initial values for variables by setting them in the environment. In Bourne-compatible shells, you can do that on the command line like this:

```
$ CXX='g++ -traditional' LIBS=-lposix ./configure
...lots of output...
$
```

Here are the `make` variables that you might want to override with environment variables when running `configure`.

Variable: CXX

C++ compiler program. The default is `c++`.

Variable: CPPFLAGS

Preprocessor flags, commonly defines and include search paths. Defaults to empty. It is common to use `CPPFLAGS=-I/usr/local/include` to access other installed packages.

Variable: INSTALL

Program to use to install files. The default is `install` if you have it, `cp` otherwise.

Variable: LIBS

Libraries to link with, in the form `-lname ...`. The `configure` script will append to this, rather than replace it. It is common to use `LIBS=-L/usr/local/lib` to access other installed packages.

If you need to do unusual things to compile the package, the author encourages you to figure out how `configure` could check whether to do them, and mail diffs or instructions to the author so that they can be included in the next release.

## BUILDING NIS-UTIL

All you should need to do is use the

```
% make
...lots of output...
%
```

command and wait. When this finishes you should see a directory called `bin` containing three files: `nis-util`, `nis-util` and `nis-util`.

**nis-util** `nis-util` program is used to manipulate and convert EPROM load files. For more information, see `nis-util(1)`.

**nis-util** The `nis-util` program is used to compare EPROM load files. For more information, see `nis-util(1)`.

**nis-util** The `nis-util` program is used to print information about EPROM load files. For more information, see `nis-util(1)`.

If you have GNU Groff installed, the build will also create a *etc/reference.ps* file. This contains the README file, this BUILDING file, and all of the man pages.

You can remove the program binaries and object files from the source directory by using the

```
% make clean
...lots of output...
%
```

command. To remove all of the above files, and also remove the *Makefile* and *include/config.h* and *config.status* files, use the

```
% make distclean
...lots of output...
%
```

command.

The file *etc/configure.ac* is used to create *configure* by a GNU program called *autoconf*. You only need to know this if you want to regenerate *configure* using a newer version of *autoconf*.

## TESTING NIS-UTIL

The *nis-util* package comes with a test suite. To run this test suite, use the command

```
% make sure
...lots of output...
Passed All Tests
%
```

The tests take a few seconds each, but it varies greatly depending on your CPU.

If all went well, the message

```
Passed All Tests
```

should appear at the end of the make.

## INSTALLING NIS-UTIL

As explained in the *SITE CONFIGURATION* section, above, the *nis-util* package is installed under the */usr/local* tree by default. Use the *--prefix=path* option to *configure* if you want some other path. More specific installation locations are assignable, use the *--help* option to *configure* for details.

All that is required to install the *nis-util* package is to use the

```
% make install
...lots of output...
%
```

command. Control of the directories used may be found in the first few lines of the *Makefile* file and the other files written by the *configure* script; it is best to reconfigure using the *configure* script, rather than attempting to do this by hand.

## GETTING HELP

If you need assistance with the *nis-util* package, please do not hesitate to contact the author at

```
Peter Miller <pmiller@opensource.org.au>
```

Any and all feedback is welcome.

When reporting problems, please include the version number given by the

```
% nis-util -version
nis-util version 1.0.D110
...warranty disclaimer...
%
```

command. Please do not send this example; run the program for the exact version number.

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*nis-util* version 1.0

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**NAME**

nis-util-afpvol-gen – generate AFP volume maps from automount maps

**SYNOPSIS**

**nis-util-afpvol-gen** [ *option...* ]

**nis-util-afpvol-gen -Help**

**nis-util-afpvol-gen -VERSion**

**DESCRIPTION**

The *fP(n)* program is used to generate AFP volume maps from automount maps. You must use exactly one of the **-Direct** or **-Indirect** options.

**OPTIONS**

The following options are understood:

**-Direct** *filename*

This options is used to read the named file, as a direct map.

**-Help** Provide some help with using the *fP(1)* program.

**-HOsts** *filename*

This option may be used to specify a hosts map to validate the host names against. Must be given early on the command line.

**-Indirect** *filename*

This options is used to read the named file, as an indirect map.

**-Output** *filename*

By default, the map is written to the standard output. This options is used to select the output file to be written.

**-VERSion**

Print the version of the *fP(1)* program being executed.

All other options will produce a diagnostic error.

All options may be abbreviated; the abbreviation is documented as the upper case letters, all lower case letters and underscores (\_) are optional. You must use consecutive sequences of optional letters.

All options are case insensitive, you may type them in upper case or lower case or a combination of both, case is not important.

For example: the arguments **-help**, **-HEL** and **-h** are all interpreted to mean the **-Help** option. The argument **-hlp** will not be understood, because consecutive optional characters were not supplied.

Options and other command line arguments may be mixed arbitrarily on the command line.

The GNU long option names are understood. Since all option names for *nis-util-afpvol-gen* are long, this means ignoring the extra leading '-'. The **--option=value** convention is also understood.

**EXIT STATUS**

The *nis-util-afpvol-gen* command will exit with a status of 1 on any error. The *nis-util-afpvol-gen* command will only exit with a status of 0 if there are no errors.

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**NAME**

`nis-util-auto-master-check` – check the contents of *auto.master*(5) files

**SYNOPSIS**

`nis-util-auto-master-check` [ *option...* ] *filename*

`nis-util-auto-master-check` **-Help**

`nis-util-auto-master-check` **-VERSion**

**DESCRIPTION**

The *nis-util-auto-master-check*(1) command is used to read an `/etc/auto.master` file, and the files it references, and cross checks the contents for consistency and common errors.

**OPTIONS**

The following options are understood:

**-DEpends**

Usually the files are checked. This option causes the names of the associated map files to be printed, for use generating *make*(1) dependency files.

**-Idirectory**

This option may be used to add a directory to the list of directories check within when attempting to locate an associated map file. This option may be used more than once. If no directories are specified, the list defaults to “.” (the current directory).

**-Help** Provide some help with using the *nis-util-auto-master-check* program.

**-suffix=string**

This option may be used to add a filename suffix to search for, when attempting to locate the associated map files. This option may be used more than once.

**-VERSion**

Print the version of the *nis-util-auto-master-check* program being executed.

All other options will produce a diagnostic error.

All options may be abbreviated; the abbreviation is documented as the upper case letters, all lower case letters and underscores ( `_` ) are optional. You must use consecutive sequences of optional letters.

All options are case insensitive, you may type them in upper case or lower case or a combination of both, case is not important.

For example: the arguments “`-help`”, “`-HEL`” and “`-h`” are all interpreted to mean the **-Help** option. The argument “`-hlp`” will not be understood, because consecutive optional characters were not supplied.

Options and other command line arguments may be mixed arbitrarily on the command line.

The GNU long option names are understood. Since all option names for *nis-util-auto-master-check* are long, this means ignoring the extra leading ‘`-`’. The “`--option=value`” convention is also understood.

**EXIT STATUS**

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**NAME**

nis-util-ethers – check and manipulate *ethers(5)* files

**SYNOPSIS**

**nis-util-ethers** **-Ethers** *filename* **-Hosts** *filename*  
**nis-util-ethers** **-ByName** *filename* [ **-Output** *filename* ]  
**nis-util-ethers** **-ByAddress** *filename* [ **-Output** *filename* ]  
**nis-util-ethers** **-Help**  
**nis-util-ethers** **-VERSion**

**DESCRIPTION**

The *nis-util-ethers* program is used to check and manipulate *ethers(5)* files.

**Checking The File**

The first synopsis line shows how to validate the contents of an *ethers(5)* file. Each field is checked to make sure it contains valid contents.

**MAC Address**

The MAC Address column is required to be valid, and in the canonical form. The exact form is necessary because NIS clients query by string, not by the more logical 6-byte binary representation. No duplicates are permitted. The file is required to be sorted by MAC address, this catches many of the typographical errors when entering the numbers.

**Host Name**

The host name column is required to be a valid host name, according to RFC xxxx. The host name is required to appear in the hosts file. The use of an IP address instead is discouraged, because many NIS clients expect a host name and can't cope with getting an IP address instead.

The overall line length (not including including the newline) must be less than 512 characters. This is a NIS protocol limitation, but it isn't usually a problem with this file.

**NIS Databases**

The NIS databases served by the NIS server, *ypserv(8)*, have their tables constructed by the *makedbm(8)* program. It needs to have its input as the index key, then a tab, and then the data to be indexed. The **-ByName** and **-ByAddress** options are used to read an *ethers(5)* file and output this format; some input checking is performed.

**OPTIONS**

The following options are understood:

**-Ethers** *filename*

This option is used to specify the *ethers(5)* file to be checked.

**-Hosts** *filename*

This option is used to specify the hosts file, used to verify the correctness of the host name column of the *ethers(5)* file.

**-ByName** *filename*

This option is used to project the given *ethers(5)* file into a suitable *makedbm(8)* input, indexed by host name. (Where an IP address appears instead of a host name, the lines will not be emitted.)

**-ByAddress** *filename*

This option is used to project the given *ethers(5)* file into a suitable *makedbm(8)* input, indexed by MAC address.

**-Output** *filename*

This option may be used with **-ByName** and **-ByAddress** to specify where to send the output. The default is to send it to the standard output.

**-Help**

Provide some help with using the *nis-util-ethers* program.

**-VERsion**

Print the version of the *nis-util-ethers* program being executed.

All other options will produce a diagnostic error.

All options may be abbreviated; the abbreviation is documented as the upper case letters, all lower case letters and underscores (\_) are optional. You must use consecutive sequences of optional letters.

All options are case insensitive, you may type them in upper case or lower case or a combination of both, case is not important.

For example: the arguments "-help", "-HEL" and "-h" are all interpreted to mean the **-Help** option. The argument "-hlp" will not be understood, because consecutive optional characters were not supplied.

Options and other command line arguments may be mixed arbitrarily on the command line.

The GNU long option names are understood. Since all option names for *nis-util-ethers* are long, this means ignoring the extra leading '-'. The "--option=value" convention is also understood.

**EXIT STATUS**

The *nis-util-ethers* command will exit with a status of 1 on any error. The *nis-util-ethers* command will only exit with a status of 0 if there are no errors.

**SEE ALSO**

*ethers(5)*, *ypserv(8)*, *makedbm(1)*

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**NAME**

nis-util-group – check and manipulate *group(5)* files

**SYNOPSIS**

**nis-util-group** **-Passwd** *filename* **-Group** *filename*  
**nis-util-group** **-ByName** *filename* [ **-Output** *filename* ]  
**nis-util-group** **-ByGid** *filename* [ **-Output** *filename* ]  
**nis-util-group** **-Help**  
**nis-util-group** **-VERSion**

**DESCRIPTION**

The *nis-util-group* program is used to check and manipulate *group(5)* files.

**Checking The File**

The first synopsis line show how to validate the contents of the *group(5)* file. Each field is checked to make sure it contains valid contents. Group names and GIDs are checked for duplicates.

- name** The group name is required to start with a lower-case letter followed by lower-case letters, digits, underscores (\_) or hyphens (-). Group names are limited to at most 8 characters.
- gid** The group ID is required to be a non-negative decimal number, in its simplest form. Group IDs are required to be in ascending order, because this catches many typographical errors in the numbers.
- members** List members are required to be existing users from the passwd file. List members are required to be unique, and in alphabetical order (the ordering makes duplicates easier to detect). List members may not name users who have the group as their default group; this helps avoid the line length limit.

The overall line length (not including including the newline) must be less than 512 characters. This is a NIS protocol limitation. Large and complex sites can run into this limit for groups with many members.

There is a maximum number of groups that a single user may belong to. (See *sysconf(3)*, the `_SC_NGROUPS_MAX` item.) However, it isn't the maximum number of groups on the server that matters, but the maximum number of groups on the most limited *client*. For this reason, users are limited to 16 groups.

**NIS Databases**

The NIS databases served by the NIS server, *ypserv(8)*, have their tables constructed by the *makedbm(8)* program. It needs to have its input as the index key, then a tab, and then the data to be indexed. The **-ByName** and **-ByGid** option are used to read a *group(5)* file and output this format; some input checking is performed.

**OPTIONS**

The following options are understood:

- ByName** *filename*  
This option is used to project the given *group(5)* file into a suitable *makedbm(8)* input, indexed by group name.
- ByGid** *filename*  
This option is used to project the given *group(5)* file into a suitable *makedbm(8)* input, indexed by gid.
- Group** *filename*  
This option may be used to specify the path of the file containing *group(5)* entries.
- Group\_Name\_Maximum** *number*  
The special value "sysconf" uses *sysconf(3)* to determine the system maximum. This option may be used to adjust the maximum length of group names.

**-Help**

Provide some help with using the *nis-util-group* program.

**-Output** *filename*

This option may be used with **-ByName** and **-ByGid** to specify where to send the output. The default is to send it to the standard output.

**-Passwd** *filename*

This option may be used to specify the path of the file containing *passwd(5)* entries.

**-Passwd\_Name\_Maximum** *number*

This option may be used to adjust the maximum length of login names. The special value "sysconf" uses *sysconf(3)* to determine the system maximum.

**-VERsion**

Print the version of the *nis-util-group* program being executed.

All other options will produce a diagnostic error.

All options may be abbreviated; the abbreviation is documented as the upper case letters, all lower case letters and underscores (\_) are optional. You must use consecutive sequences of optional letters.

All options are case insensitive, you may type them in upper case or lower case or a combination of both, case is not important.

For example: the arguments "-help", "-HEL" and "-h" are all interpreted to mean the **-Help** option. The argument "-hlp" will not be understood, because consecutive optional characters were not supplied.

Options and other command line arguments may be mixed arbitrarily on the command line.

The GNU long option names are understood. Since all option names for *nis-util-group* are long, this means ignoring the extra leading '-'. The "--option=value" convention is also understood.

**EXIT STATUS**

The *nis-util-group* command will exit with a status of 1 on any error. The *nis-util-group* command will only exit with a status of 0 if there are no errors.

**SEE ALSO**

*group(5)*, *makedbm(1)* *passwd(5)*, *ypserv(8)*,

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**NAME**

`nis-util-group-members` – list the members of Unix groups

**SYNOPSIS**

`nis-util-group-members` [ *option...* ] *group-name...*

`nis-util-group-members -Help`

`nis-util-group-members -VERsion`

**DESCRIPTION**

The `nis-util-group-members` program is used to list the members of the groups named on the command line.

**OPTIONS**

The following options are understood:

`-Group filename`

This option may be used to specify the path of the file containing `group(5)` entries.

`-Group_Name_Maximum number`

The special value “`sysconf`” uses `sysconf(3)` to determine the system maximum. This option may be used to adjust the maximum length of group names.

`-Help`

Provide some help with using the `nis-util-group-members` program.

`-Passwd filename`

This option may be used to specify the path of the file containing `passwd(5)` entries.

`-Passwd_Name_Maximum number`

This option may be used to adjust the maximum length of login names. The special value “`sysconf`” uses `sysconf(3)` to determine the system maximum.

`-VERsion`

Print the version of the `nis-util-group-members` program being executed.

All other options will produce a diagnostic error.

All options may be abbreviated; the abbreviation is documented as the upper case letters, all lower case letters and underscores (`_`) are optional. You must use consecutive sequences of optional letters.

All options are case insensitive, you may type them in upper case or lower case or a combination of both, case is not important.

For example: the arguments “`-help`”, “`-HEL`” and “`-h`” are all interpreted to mean the `-Help` option. The argument “`-hlp`” will not be understood, because consecutive optional characters were not supplied.

Options and other command line arguments may be mixed arbitrarily on the command line.

The GNU long option names are understood. Since all option names for `nis-util-group-members` are long, this means ignoring the extra leading ‘`-`’. The “`--option=value`” convention is also understood.

**EXIT STATUS**

The `nis-util-group-members` command will exit with a status of 1 on any error. The `nis-util-group-members` command will only exit with a status of 0 if there are no errors.

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**NAME**

nis-util-hosts – check and manipulate *hosts(5)* files

**SYNOPSIS**

**nis-util-hosts** **-Check** *filename*  
**nis-util-hosts** **-ByName** *filename* [ **-Output** *filename* ]  
**nis-util-hosts** **-ByAddress** *filename* [ **-Output** *filename* ]  
**nis-util-hosts** **-Help**  
**nis-util-hosts** **-VERSion**

**DESCRIPTION**

The *nis-util-hosts* program is used to check and manipulate *hosts(5)* files.

**Checking The File**

The first synopsis line shows how to validate the contents of a *hosts(5)* file. Each field is checked to make sure it contains valid contents.

**IP Address**

The IP Address column is required to be valid, and in the canonical form. The exact form is necessary because NIS clients query by string, not by the more logical 4-byte binary representation. No duplicates are permitted. The file is required to be sorted by IP address, this catches many of the typographical errors when entering the numbers.

**Host Names**

The host names are required to be valid host names, according to RFC xxxx.

The overall line length (not including including the newline) must be less than 512 characters. This is a NIS protocol limitation.

**NIS Databases**

The NIS databases served by the NIS server, *ypserv(8)*, have their tables constructed by the *makedbm(8)* program. It needs to have its input as the index key, then a tab, and then the data to be indexed. The **-ByName** and **-ByAddress** options are used to read a *hosts(5)* file and output this format; some input checking is performed.

**OPTIONS**

The following options are understood:

**-HosTs** *filename*

This option is used to specify the *hosts(5)* file to be checked.

**-ByName** *filename*

This option is used to project the given *hosts(5)* file into a suitable *makedbm(8)* input, indexed by host name.

**-ByAddress** *filename*

This option is used to project the given *hosts(5)* file into a suitable *makedbm(8)* input, indexed by IP address.

**-Output** *filename*

This option may be used with **-ByName** and **-ByAddress** to specify where to send the output. The default is to send it to the standard output.

**-Help**

Provide some help with using the *nis-util-hosts* program.

**-VERSion**

Print the version of the *nis-util-hosts* program being executed.

All other options will produce a diagnostic error.

All options may be abbreviated; the abbreviation is documented as the upper case letters, all lower case letters and underscores (\_) are optional. You must use consecutive sequences of optional letters.

All options are case insensitive, you may type them in upper case or lower case or a combination of both,

case is not important.

For example: the arguments "--help", "--HEL" and "-h" are all interpreted to mean the **-Help** option. The argument "--hlp" will not be understood, because consecutive optional characters were not supplied.

Options and other command line arguments may be mixed arbitrarily on the command line.

The GNU long option names are understood. Since all option names for *nis-util-hosts* are long, this means ignoring the extra leading '-'. The "--option=value" convention is also understood.

## EXIT STATUS

The *nis-util-hosts* command will exit with a status of 1 on any error. The *nis-util-hosts* command will only exit with a status of 0 if there are no errors.

## SEE ALSO

*hosts(5)*, *makedbm(1)* *ypserv(8)*,

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*one line to give the program's name and a brief idea of what it does.*

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If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

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*signature of Ty Coon, 1 April 1989*

Ty Coon, President of Vice

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**NAME**

nis-util-netgroup – check and manipulate netgroup files

**SYNOPSIS**

```

nis-util-netgroup -Check filename -Hosts filename -Passwd filename
nis-util-netgroup -Map filename [ -Output filename ]
nis-util-netgroup -ByHost filename [ -Output filename ]
nis-util-netgroup -ByUser filename [ -Output filename ]
nis-util-netgroup -Help
nis-util-netgroup -VERSion

```

**DESCRIPTION**

The *nis-util-netgroup* program is used to check and manipulate *netgroup(5)* files.

**Checking The File**

The first synopsis line shows how to validate the contents of the network groups file, which is expected to be in *netgroup(5)* format. Each field is checked to make sure it contains valid contents. Netgroup names and member lists are checked for duplicates.

- name    The netgroup name is required to start with a lower-case letter followed by lower-case letters, digits, underscores (\_) or hyphens (-). User names are limited to at most 8 characters.
- host    If a host is specified, it is required to be named in the hosts file specified by the **-Host** option. This file is expected to be in *hosts(5)* format.
- user    If a user is specified, it is required to be named in the password file specified by the **-Passwd** option. This file is expected to be in *passwd(5)* format.
- domain  You are required to leave the domain field empty. (The domain field refers to the domain in which the triple is valid, not the domain containing the the trusted host, thus setting it to anything other than the wildcard is of no practical value.)

If one netgroup reference another, the referenced netgroup is required to exist. Infinite loops of mutually referencing netgroups are not permitted.

The overall line length (not including including the newline) must be less than 512 characters. This is a NIS protocol limitation.

**NIS Databases**

The NIS databases served by the NIS server, *ypserv(8)*, have their tables constructed by the *makedbm(8)* program. It needs to have its input as the index key, then a tab, and then the data to be indexed. The **-Map**, **-ByHost** and **-ByUser** options are used to read a *netgroup(5)* file and output this format; some input checking is performed.

**OPTIONS**

The following options are understood:

**-By-Host** *filename*

This option is used to specify the name of a *netgroup(5)* file to be inverted by host name. This generates output suitable for use as *makedbm(1)* input. Some input checking is performed.

**-Map** *filename*

This option is used to specify the name of a *netgroup(5)* file to be prepared for use as *makedbm(1)* input. All comments and line continuations are removed. Some input checking is performed.

**-By-User** *filename*

This option is used to specify the name of a *netgroup(5)* file to be inverted by user name. This generates output suitable for use as *makedbm(1)* input. Some input checking is performed.

**-Check** *filename*

This option is used to specify the name of a *netgroup(5)* file to be checked for correctness.

**-Help**

Provide some help with using the *nis-util-netgroup* program.

**-Hosts**

This option may be used to tell the `-Check` option the location of a *hosts(5)* file to validate against.

**-Output**

This option may be used to specify the output file for the `-Map`, `-ByHost` and `-ByUser` options. The default is to use the standard output.

**-Passwd** *filename*

This option may be used to specify the path of the file containing *passwd(5)* entries.

**-Passwd\_Name\_Maximum** *number*

This option may be used to adjust the maximum length of login names. The special value "sysconf" uses *sysconf(3)* to determine the system maximum.

**-VERsion**

Print the version of the *nis-util-netgroup* program being executed.

All other options will produce a diagnostic error.

All options may be abbreviated; the abbreviation is documented as the upper case letters, all lower case letters and underscores (`_`) are optional. You must use consecutive sequences of optional letters.

All options are case insensitive, you may type them in upper case or lower case or a combination of both, case is not important.

For example: the arguments "`-help`", "`-HEL`" and "`-h`" are all interpreted to mean the **-Help** option. The argument "`-hlp`" will not be understood, because consecutive optional characters were not supplied.

Options and other command line arguments may be mixed arbitrarily on the command line.

The GNU long option names are understood. Since all option names for *nis-util-netgroup* are long, this means ignoring the extra leading `'-'`. The "`--option=value`" convention is also understood.

**EXIT STATUS**

The *nis-util-netgroup* command will exit with a status of 1 on any error. The *nis-util-netgroup* command will only exit with a status of 0 if there are no errors.

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 ^^\*            WWW:        http://miller.emu.id.au/pmiller/

**NAME**

nis-util-netid – check *inetd.conf*(5) files

**SYNOPSIS**

**nis-util-netid** [ *option...* ] *filename...*

**nis-util-netid -Help**

**nis-util-netid -VERSion**

**DESCRIPTION**

The *nis-util-netid* program is used to

**OPTIONS**

The following options are understood:

**-Help**

Provide some help with using the *nis-util-netid* program.

**-VERSion**

Print the version of the *nis-util-netid* program being executed.

All other options will produce a diagnostic error.

All options may be abbreviated; the abbreviation is documented as the upper case letters, all lower case letters and underscores (`_`) are optional. You must use consecutive sequences of optional letters.

All options are case insensitive, you may type them in upper case or lower case or a combination of both, case is not important.

For example: the arguments "`-help`", "`-HEL`" and "`-h`" are all interpreted to mean the **-Help** option. The argument "`-hlp`" will not be understood, because consecutive optional characters were not supplied.

Options and other command line arguments may be mixed arbitrarily on the command line.

The GNU long option names are understood. Since all option names for *nis-util-netid* are long, this means ignoring the extra leading `'-'`. The "`--option=value`" convention is also understood.

**EXIT STATUS**

The *nis-util-netid* command will exit with a status of 1 on any error. The *nis-util-netid* command will only exit with a status of 0 if there are no errors.

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**NAME**

nis-util-netmasks – check and manipulate *netmasks(5)* files

**SYNOPSIS**

```

nis-util-netmasks -Check filename -Netmasks filename
nis-util-netmasks -By_Service_Name filename [ -Output filename ]
nis-util-netmasks -By_Name filename [ -Output filename ]
nis-util-netmasks -Help
nis-util-netmasks -VERSion

```

**DESCRIPTION**

The *nis-util-netmasks* program is used to check and manipulate *netmasks(5)* files.

**Checking the File**

The first synopsis line shows how to validate the contents of a *services(5)* file. Each field is checked to make sure it contains valid contents.

network number

The network number column is required to be a correctly formed dotted quad. Duplicate network numbers are not permitted.

network mask

The network mask column is required to be a correctly formed dotted quad. The network mask is required to be consistent with the network number.

**NIS Databases**

The NIS databases served by the NIS server, *ypserv(8)*, have their tables constructed by the *makedbm(8)* program. It needs to have its input as the index key, then a tab, and then the data to be indexed. The **-ByName** and **-ByServiceName** options are used to read a *netmasks(5)* file and output this format; some input checking is performed.

**OPTIONS**

The following options are understood:

**-By-Service\_Name** *filename*

This option is used to project the given *netmasks(5)* file into a suitable *makedbm(8)* input, indexed by network number.

**-By-Name** *filename*

This option is used to project the given *netmasks(5)* file into a suitable *makedbm(8)* input, indexed by network mask.

**-Check** *filename*

This option is used to specify the *netmasks(5)* file to be checked.

**-Help**

Provide some help with using the *nis-util-netmasks* program.

**-Networks** *filename*

This option is used to specify the *networks(5)* file to check the netmasks against.

**-Output** *filename*

This option may be used with **-ByAddress** and **-ByName** to specify where to send the output. The default is to send it to the standard output.

**-VERSion**

Print the version of the *nis-util-netmasks* program being executed.

All other options will produce a diagnostic error.

All options may be abbreviated; the abbreviation is documented as the upper case letters, all lower case letters and underscores (\_) are optional. You must use consecutive sequences of optional letters.

All options are case insensitive, you may type them in upper case or lower case or a combination of both, case is not important.

For example: the arguments "--help", "--HEL" and "--h" are all interpreted to mean the **--Help** option. The argument "--hlp" will not be understood, because consecutive optional characters were not supplied.

Options and other command line arguments may be mixed arbitrarily on the command line.

The GNU long option names are understood. Since all option names for *nis-util-netmasks* are long, this means ignoring the extra leading '-'. The "--option=value" convention is also understood.

## EXIT STATUS

The *nis-util-netmasks* command will exit with a status of 1 on any error. The *nis-util-netmasks* command will only exit with a status of 0 if there are no errors.

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## AUTHOR

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**NAME**

nis-util-networks – check and manipulate *networks(5)* files

**SYNOPSIS**

**nis-util-networks** **-Check** *filename* **-Netmasks** *filename*  
**nis-util-networks** **-By\_Address** *filename* [ **-Output** *filename* ]  
**nis-util-networks** **-By\_Name** *filename* [ **-Output** *filename* ]  
**nis-util-networks** **-Help**  
**nis-util-networks** **-VERSion**

**DESCRIPTION**

The *nis-util-networks* program is used to check and manipulate *networks(5)* files.

**Checking the File**

The first synopsis line shows how to validate the contents of a *networks(5)* file. Each field is checked to make sure it contains valid contents.

- name** A network name may be up to 40 characters taken from the set of lowercase letters, digits, and the punctuation character hyphen. It must start with a letter, and end with a letter or digit. Duplicate names are not permitted.
- number** The network number column is required to be a correctly formed dotted quad. The rows should be in ascending order, as this catches common typographical errors.
- aliases** A network alias may be up to 40 characters taken from the set of letters, digits, and the punctuation character hyphen. It must start with a letter, and end with a letter or digit. Duplicate names are not permitted.

The overall line length (not including including the newline) must be less than 512 characters. This is a NIS service limitation, but it isn't usually a problem with this file.

**NIS Databases**

The NIS databases served by the NIS server, *ypserv(8)*, have their tables constructed by the *makedbm(8)* program. It needs to have its input as the index key, then a tab, and then the data to be indexed. The **-ByAddress** and **-ByName** options are used to read a *networks(5)* file and output this format; some input checking is performed.

**OPTIONS**

The following options are understood:

- By-Address** *filename*  
This option is used to project the given *networks(5)* file into a suitable *makedbm(8)* input, indexed by network number.
- By-Name** *filename*  
This option is used to project the given *networks(5)* file into a suitable *makedbm(8)* input, indexed by network name.
- Check** *filename*  
This option is used to specify the *networks(5)* file to be checked.
- Help**  
Provide some help with using the *nis-util-networks* program.
- Output** *filename*  
This option may be used with **-ByAddress** and **-ByName** to specify where to send the output. The default is to send it to the standard output.
- VERSion**  
Print the version of the *nis-util-networks* program being executed.

All other options will produce a diagnostic error.

All options may be abbreviated; the abbreviation is documented as the upper case letters, all lower case letters and underscores (\_) are optional. You must use consecutive sequences of optional letters.

All options are case insensitive, you may type them in upper case or lower case or a combination of both, case is not important.

For example: the arguments "--help", "--HEL" and "--h" are all interpreted to mean the **--Help** option. The argument "--hlp" will not be understood, because consecutive optional characters were not supplied.

Options and other command line arguments may be mixed arbitrarily on the command line.

The GNU long option names are understood. Since all option names for *nis-util-networks* are long, this means ignoring the extra leading '-'. The "--option=value" convention is also understood.

## EXIT STATUS

The *nis-util-networks* command will exit with a status of 1 on any error. The *nis-util-networks* command will only exit with a status of 0 if there are no errors.

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**NAME**

nis-util-passwd – check and manipulate *passwd(5)* files

**SYNOPSIS**

```

nis-util-passwd -Passwd filename -Group filename
nis-util-passwd -ByName filename [ -Output filename ]
nis-util-passwd -ByUid filename [ -Output filename ]
nis-util-passwd -Help
nis-util-passwd -VERSIon

```

**DESCRIPTION**

The *nis-util-passwd* program is used to check and manipulate *passwd(5)* files.

**Checking The File**

The first synopsis line shows how to validate the contents of the password file, which is expected to be in *passwd(5)* format. Each field is checked to make sure it contains valid contents. Login names and UIDs are checked for duplicates.

- name** The user name is required to start with a lower-case letter followed by lower-case letters, digits, underscores (`_`) or hyphens (`-`). User names are limited to at most 8 characters.
- uid** The user ID is required to be a non-negative decimal number, in its simplest form. User IDs are required to be in ascending order, because this catches many typographical errors in the numbers.
- gid** The group ID is required to be a non-negative decimal number, in its simplest form. The group ID must refer to an existing group in the *group* file.
- home** The home directory is required to be an absolute path. Warnings are issued if it does not have matching user and group IDs.
- shell** The shell is required to be an absolute path.

The overall line length (not including including the newline) must be less than 512 characters. This is a NIS protocol limitation.

**NIS Databases**

The NIS databases served by the NIS server, *ypserv(8)*, have their tables constructed by the *makedbm(8)* program. It needs to have its input as the index key, then a tab, and then the data to be indexed. The **-ByName** and **-ByUid** options are used to read a *passwd* file and output this format; some input checking is performed.

**OPTIONS**

The following options are understood:

- ByName** *filename*  
This option is used to project the given *passwd* file into a suitable *makedbm(8)* input, indexed by login name.
- ByUid** *filename*  
This option is used to project the given *passwd* file into a suitable *makedbm(8)* input, indexed by uid.
- Group** *filename*  
This option may be used to specify the path of the file containing *group(5)* entries.
- Group\_Name\_Maximum** *number*  
The special value “*sysconf*” uses *sysconf(3)* to determine the system maximum. This option may be used to adjust the maximum length of group names.
- Help**  
Provide some help with using the *nis-util-passwd* program.
- Output** *filename*  
This option may be used with **-ByName** and **-ByUid** to specify where to send the output. The default is to send it to the standard output.

**-Passwd** *filename*

This option may be used to specify the path of the file containing *passwd(5)* entries.

**-Passwd\_Name\_Maximum** *number*

This option may be used to adjust the maximum length of login names. The special value "sysconf" uses *sysconf(3)* to determine the system maximum.

**-VERsion**

Print the version of the *nis-util-passwd* program being executed.

All other options will produce a diagnostic error.

All options may be abbreviated; the abbreviation is documented as the upper case letters, all lower case letters and underscores (\_) are optional. You must use consecutive sequences of optional letters.

All options are case insensitive, you may type them in upper case or lower case or a combination of both, case is not important.

For example: the arguments "-help", "-HEL" and "-h" are all interpreted to mean the **-Help** option. The argument "-hlp" will not be understood, because consecutive optional characters were not supplied.

Options and other command line arguments may be mixed arbitrarily on the command line.

The GNU long option names are understood. Since all option names for *nis-util-passwd* are long, this means ignoring the extra leading '-'. The "--option=value" convention is also understood.

**EXIT STATUS**

The *nis-util-passwd* command will exit with a status of 1 on any error. The *nis-util-passwd* command will only exit with a status of 0 if there are no errors.

**SEE ALSO**

*passwd(5)*, *group(5)*, *ypserv(8)*, *makedbm(1)*

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**AUTHOR**

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**NAME**

nis-util-protocols – check and manipulate *protocols(5)* files

**SYNOPSIS**

**nis-util-protocols** –*Check filename*  
**nis-util-protocols** –*By-NAme filename* [ –**Output filename** ]  
**nis-util-protocols** –*By-NUmber filename* [ –**Output filename** ]  
**nis-util-protocols -Help**  
**nis-util-protocols -VERSion**

**DESCRIPTION**

The *nis-util-protocols* program is used to check and manipulate *protocols(5)* files.

**Checking the File**

The first synopsis line shows how to validate the contents of a *protocols(5)* file. Each field is checked to make sure it contains valid contents.

- name** A protocol name may be up to 40 characters taken from the set of lowercase letters, digits, and the punctuation character hyphen. It must start with a letter, and end with a letter or digit. Duplicate names are not permitted.
- number** The protocol number column is required to be positive, and less than 65536. The rows should be in ascending order, as this catches common typographical errors.
- aliases** A protocol alias may be up to 40 characters taken from the set of letters, digits, and the punctuation character hyphen. It must start with a letter, and end with a letter or digit. Duplicate names are not permitted.

The overall line length (not including including the newline) must be less than 512 characters. This is a NIS protocol limitation, but it isn't usually a problem with this file.

**NIS Databases**

The NIS databases served by the NIS server, *ypserv(8)*, have their tables constructed by the *makedbm(8)* program. It needs to have its input as the index key, then a tab, and then the data to be indexed. The –**ByName** and –**ByNumber** options are used to read a *protocols(5)* file and output this format; some input checking is performed.

**OPTIONS**

The following options are understood:

–*By-NAme filename*

This option is used to project the given *protocols(5)* file into a suitable *makedbm(8)* input, indexed by protocol name.

–*By-NUmber filename*

This option is used to project the given *protocols(5)* file into a suitable *makedbm(8)* input, indexed by protocol number.

–*Check filename*

This option is used to specify the *ethers(5)* file to be checked.

**-Help**

Provide some help with using the *nis-util-protocols* program.

–*Output filename*

This option may be used with –**ByName** and –**ByNumber** to specify where to send the output. The default is to send it to the standard output.

**-VERSion**

Print the version of the *nis-util-protocols* program being executed.

All other options will produce a diagnostic error.

All options may be abbreviated; the abbreviation is documented as the upper case letters, all lower case letters and underscores (\_) are optional. You must use consecutive sequences of optional letters.

All options are case insensitive, you may type them in upper case or lower case or a combination of both, case is not important.

For example: the arguments "--help", "--HEL" and "-h" are all interpreted to mean the **-Help** option. The argument "--hlp" will not be understood, because consecutive optional characters were not supplied.

Options and other command line arguments may be mixed arbitrarily on the command line.

The GNU long option names are understood. Since all option names for *nis-util-protocols* are long, this means ignoring the extra leading '-'. The "--option=value" convention is also understood.

## EXIT STATUS

The *nis-util-protocols* command will exit with a status of 1 on any error. The *nis-util-protocols* command will only exit with a status of 0 if there are no errors.

## SEE ALSO

*protocols*(5)

description of the file format

*ypserv*(8)

NIS server

*makedbm*(1)

create or dump a *ypserv*(8) database file

<http://www.iana.org/assignments/service-names>

Towards the top there is a paragraph outlining the rules for protocol names and service names.

<http://www.iana.org/assignments/protocol-numbers>

This contains the official list of protocol names and numbers. (Note that the names do not follow the rules.)

## COPYRIGHT

*nis-util-protocols* version 1.0

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**NAME**

nis-util-services – check and manipulate *services(5)* files

**SYNOPSIS**

**nis-util-services** –*Check filename* –*Protocols filename*  
**nis-util-services** –*By-Name filename* [ –**Output filename** ]  
**nis-util-services** –*By-Service-Name filename* [ –**Output filename** ]  
**nis-util-services -Help**  
**nis-util-services -VERSion**

**DESCRIPTION**

The *nis-util-services* program is used to check and manipulate *services(5)* files.

**Checking the File**

The first synopsis line shows how to validate the contents of a *services(5)* file. Each field is checked to make sure it contains valid contents.

- name** A service name may be up to 40 characters taken from the set of lowercase letters, digits, and the punctuation character hyphen. It must start with a letter, and end with a letter or digit. Duplicate names are not permitted.
- number** The protocol number column is required to be positive, and less than 65536. The rows should be in ascending order, as this catches common typographical errors.
- aliases** A service alias may be up to 40 characters taken from the set of letters, digits, and the punctuation character hyphen. It must start with a letter, and end with a letter or digit. Duplicate names are not permitted.

The overall line length (not including including the newline) must be less than 512 characters. This is a NIS service limitation, but it isn't usually a problem with this file.

**NIS Databases**

The NIS databases served by the NIS server, *ypserv(8)*, have their tables constructed by the *makedbm(8)* program. It needs to have its input as the index key, then a tab, and then the data to be indexed. The –**ByName** and –**ByServiceName** options are used to read a *services(5)* file and output this format; some input checking is performed.

**Note:** despite the names, –*byname* actually means to generate a map indexed by port number, and –*byservicename* means to generate a map indexed by service name and service aliases. The original YP authors came up with this brilliant piece of cognitive dissonance, and we are stuck with it.

**OPTIONS**

The following options are understood:

–*By-Name filename*

This option is used to project the given *services(5)* file into a suitable *makedbm(8)* input, indexed by service name.

–*By-Service-Name filename*

This option is used to project the given *services(5)* file into a suitable *makedbm(8)* input, indexed by service number.

–*Check filename*

This option is used to specify the *ethers(5)* file to be checked.

–**Help**

Provide some help with using the *nis-util-services* program.

–*Output filename*

This option may be used with –**ByName** and –**ByServiceName** to specify where to send the output. The default is to send it to the standard output.

**-Protocols filename**

This option is used to specify the *protocols(5)* file to check the protocol names against.

**-VERSion**

Print the version of the *nis-util-services* program being executed.

All other options will produce a diagnostic error.

All options may be abbreviated; the abbreviation is documented as the upper case letters, all lower case letters and underscores (\_) are optional. You must use consecutive sequences of optional letters.

All options are case insensitive, you may type them in upper case or lower case or a combination of both, case is not important.

For example: the arguments "-help", "-HEL" and "-h" are all interpreted to mean the **-Help** option. The argument "-hlp" will not be understood, because consecutive optional characters were not supplied.

Options and other command line arguments may be mixed arbitrarily on the command line.

The GNU long option names are understood. Since all option names for *nis-util-services* are long, this means ignoring the extra leading '-'. The "--option=value" convention is also understood.

**EXIT STATUS**

The *nis-util-services* command will exit with a status of 1 on any error. The *nis-util-services* command will only exit with a status of 0 if there are no errors.

**SEE ALSO**

*services(5)*

description of the file format

*ypserv(8)*

NIS server

*makedbm(1)*

create or dump a *ypserv(8)* database file

<http://www.iana.org/assignments/service-names>

Towards the top there is a paragraph outlining the rules for protocol names and service names.

<http://www.iana.org/assignments/port-numbers>

This contains the official list of port names and numbers.

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**NAME**

/etc/nis-util.conf – nios-util configuration file

**DESCRIPTION**

The nis-util collection of programs may be configured using a variety of files and environment variables.

**Sources**

in the following precedence order from lowest to highest:

*built-in* A configuration item's hard coded default. Usually conservative.

/etc/nis-util.conf

The system wide default values, if present. Not usually required, you should be conservative with setting you place here.

\$HOME/.nis-util.rc

The per-user default values, if present. Not usually required.

NIS\_UTIL

The NIS\_UTIL environment variable, if present. This is formatted identically to the file format, including newlines.

NIS\_UTIL\_name

The utility specific environment variable, if present. This is formatted identically to the file format, including newlines. the name of the environment variable depends on the program being executed, for example the *nis-util-passwd(1)* command would look for the NIS\_UTIL\_PASSWD environment variable.

**-configuration=filename**

A configuration file specified on the command line.

A specific command line option, as it relates to a specific item,

usually in the [global] section. For example, the **-no-warning** option set the “[global] warning” configuration item.

If there is an environment variable “NIS\_UTIL\_TEST\_MODE=true” setting, all configuration sources except for built-in and command line variants are ignored.

**FILE FORMAT**

The file is formatted similarly to a classic .ini file. It has multiple sections. Each section starts a line with a section name in [ square brackets ], and is followed with lines for the form “name = value”.

Blank lines are ignored. Comments start with a hash (“#”) character, preceded by white space or the start of the line, and extend to the end of the line. Note that text such as “a@b#c” does not contain a comment.

**Section Names**

The global section name is [global], and contains configuration items of interest to many of the nis-util programs and NIS maps.

Each NIS map has its own section, controlling what is and isn't checked. For example: the “passwd” map, corresponding to the “/etc/passwd” file, is in section “[passwd]”.

**BUILTIN DEFAULTS**

The default values of the various configuration items are as follows:

```
[global]
warning = true
pedantic = true
```

```
[passwd]
name-length-maximum = 8
```

```
[group]
name-length-maximum = 8
```

```
[hosts]
name-length-maximum = 63
```

The default defaults are: false, for boolean values; zero, for integer values; and the empty string, for string values.

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