

## PORTABLE DUAs

### Status of this Memo

This memo provides information for the Internet community. It does not specify an Internet standard. Distribution of this memo is unlimited.

### INTRODUCTION

This document comes in two parts. The first part is for regular people who wish to set up their own DUAs (Directory User Interfaces) to access the Directory. It includes some brief notes on the operation of the DUAs and instructions for their creation and installation. The instructions are given in an easy-to-follow, step-by-step format. It is fully expected that the user will be able to perform the necessary operations as he reads through the instructions for the first time and have a working DUA when he finishes. The second part is for ISODE-maintainers wishing to provide portable DUAs to users. This part gives instructions in a similar but longer, step-by-step format. It is fully expected that the maintainer will be able to perform the necessary operations as he reads through the instructions for the first time and have a working DUA package/supporting service when he finishes.

The document currently has four sub-parts for each larger part. The sub-parts detail the following DUAs: WHOIS, "de," dixie's "ud" and ISODE's "doog." It is intended that additional sub-parts will be added to the document as new, portable DUA packages are designed.

Where pertinent, the document assumes ISODE 8.0 is being used.

#### 1. Instructions for DUA-Users

##### WHOIS

A WHOIS interface to X.500 may be available on any ISODE-resident machine which also runs a DSA (Directory System Agent.) Check with your local, ISODE-maintainer. If the service is available, users can access the Directory with the following command:

```
whois -h <hostname> <name in UFN format>
```

<hostname> indicates the name of the host machine offering the WHOIS interface, surrounded by quotes. <name in UFN format> refers to a special, user-friendly syntax developed by Steve Hardcastle-Kille. UFN format is a comma-separated list of DN component values. (Attribute types are omitted.) The criteria for identifying DN components in UFN is often less stringent than normal. For example:

```
@c=US@st=California@o=Information Sciences
Institute@ou=HPCC@cn=Tom Tignor
```

could be uniquely specified in UFN syntax as

```
tignor,isi,ca,us
```

So to find this entry through WHOIS, one would type:

```
whois -h "gum.isi.edu" tignor,isi,ca,us
```

See Steve Hardcastle-Kille's Work in Progress, "User Friendly Naming" for details.

De

Use of the "de" DUA is fully explained by the program's help section. New users should type "?" at the first prompt after installing and running the de executable.

The de executable can be created and installed by the following simple steps:

If you do not have a file called ".unknown\_tailor" in your home directory, create it now. This file should contain the following single line:

```
etcpath: <fullpathname>/isode/etc/
```

where <fullpathname> is the full path name of your \$HOME directory.

If you do not have a directory \$HOME/isode/bin, where "\$HOME" is your home directory, create it now.

ftp the compressed tar file "de-portable.tar.Z" from your local, ISODE-resident machine and put it in your isode directory. If you cannot find this file locally, it is available by anonymous

```
ftp from "gum.isi.edu" in the "x500" directory.
```

```
cd $HOME/isode
```

```
uncompress < de-portable.tar.Z | tar xf -
```

If your name is listed in the Directory, edit the de/detailor file and add a line reading:

```
username: <yourDN>
```

where <yourDN> indicates your Distinguished Name in the Directory.

```
cp de/detailor de/etc/detailor
```

Edit the CONFIG.make variables BINDIR, ETCDIR and SBINDIR to refer to your isode/bin, isode/etc and isode/etc directories, respectively. (The isode/etc directory was created by the previous command.)

```
ranlib libdsap.a
```

```
ranlib libisode.a
```

```
cd de
```

```
./make all
```

```
./make inst-all
```

There is one error you may encounter during this procedure, following the "./make all" command:

```
"Redeclaration of sprintf." in general.h
```

If this error occurs, the following sub-procedure will fix the problem:

```
Invoke your editor for the file ../h/general.h
```

```
Search for the string "sprintf".
```

```
Cut the line with the "#endif" string which follows the line reading:
```

```
char *sprintf ();
```

```
Paste the line under the line which reads "#endif". This second #endif line is exactly three lines below the current line.
```

Save the file and quit the editor.

Type `./make all` again. It should now compile smoothly. Finish up by typing `./make inst-all`.

Dixie/Ud

The "ud" DUA is designed for users doing most of their X.500 queries in one branch of the DIT (Directory Information Tree.) The DUA operates from a predefined "base," a position in the DIT one or more branches above the entries to be queried. The base is usually an organization name, such as:

```
@c=US@st=California@o=Information Sciences Institute
```

Ud starts with a preset base. (See below.) But this base can be changed with the "cb" command. "cb" takes the full DN of the new base as an argument. For example:

```
cb @c=GB@o=University College London
```

With a preset base, searching is easy. The user finds entries below the base with the "find" command. "find" takes the last component of the DN of the entry as its sole argument. The criteria for the argument is very loose. The partial matching performed by ud should return the desired data or a clarification request if the name is at all close to the real thing.

For example, with a base "@c=US@st=California@o=Information Sciences Institute", the RDN

```
ou=HPCC@cn=Tom Tignor
```

could be found by entering

```
find tignor
```

at the ud prompt.

Other commands in ud are briefly described by the program's help section. Interested users should type "?" at the first prompt, after installing and running the executable.

"Ud" comes with the "dixie" package, a mini-environment designed specifically to support lightweight Directory access. Using ud requires that a dixie server is running along with a DSA on your local, ISODE-resident machine. Before retrieving the dixie package,

check with your local DSA manager to see that the dixie server is up and running.

Once you're sure that everything is set up at the DSA-manager's end, the ud executable can be created and installed by the following simple steps:

If you do not have a directory \$HOME/isode/bin, where "\$HOME" is your home directory, create it now.

ftp (anonymously) the compressed tar file "dixie-<version #>.tar.Z", where <version #> is the number of the latest release, from "terminator.cc.umich.edu" and put it in your isode directory. The file is available in the "x500" directory on terminator.

```
cd $HOME/isode
```

```
uncompress < dixie-<version #>.tar.Z | tar xf -
```

This creates the dixie environment. As a user interested in ud only, there are a number of things in the package that will be taking up space to no purpose. The following sequence of commands will get rid of them.

```
cd dixie-<version #>
```

```
rm -r dos
```

```
rm -r macintosh
```

```
rm -r server
```

```
rm -r vms
```

```
cd ..
```

That done, we continue to bring ud to life.

```
cd dixie-<version #>
```

Edit the file "ud/ud.h". There are two constants for which you will need to supply new values: DEFAULT\_BASE and DEFAULT\_SERVER. DEFAULT\_BASE identifies ud's "base" upon startup, as described above. It takes a quoted DN as a value, e.g., "@c=US@st=California@o=Information Sciences Institute". DEFAULT\_SERVER identifies the machine which hosts the dixie server, i.e. your local, ISODE-resident machine. This constant

takes a quoted string as a value, e.g., "gum.isi.edu".

Edit the file "Makefile". Set the value of the BINDIR variable to "<mypath>/isode/bin", where <mypath> is the full pathname of the user's home directory.

```
make depend-ud
```

```
make ud-only
```

```
make inst-ud
```

## Doog

The "doog" DUA retrieves information on entries supplied by the user in UFN format. UFN format refers to a special, user-friendly syntax developed by Steve Hardcastle-Kille. UFN format is a comma-separated list of DN component values. (Attribute types are omitted.) The criteria for identifying DN components in UFN is often less stringent than normal. For example:

```
@c=US@st=California@o=Information Sciences  
Institute@ou=HPCC@cn=Tom Tignor
```

could be specified in UFN syntax (and doog) as

```
tignor,isi,ca,us
```

See Steve Hardcastle-Kille's Work in Progress, "User Friendly Naming" for details.

Other commands in doog are briefly described by the program's help section. Interested users should type "?" at the first prompt, after installing and running the executable.

The doog executable can be created and installed by the following simple steps:

If you do not have a file called ".unknown\_tailor" in your home directory, create it now. This file should contain the following single line:

```
etcpath: <fullpathname>/isode/etc/
```

where <fullpathname> is the full path name of your \$HOME directory.

If you do not have a directory \$HOME/isode/bin, where "\$HOME" is

your home directory, create it now.

ftp the compressed tar file "doog-portable.tar.Z" from your local, ISODE-resident machine and put it in your isode directory. If you cannot find this file locally, it is available by anonymous ftp from "gum.isi.edu" in the "x500" directory.

```
cd $HOME/isode
```

```
uncompress < doog-isode-8.0.tar.Z | tar xf -
```

Edit the CONFIG.make variables BINDIR, ETCDIR and SBINDIR to refer to your isode/bin, isode/etc and isode/etc directories, respectively. (The isode/etc directory was created by the previous command.)

```
ranlib libdsap.a
```

```
ranlib libisode.a
```

```
cd doog
```

```
./make all
```

```
./make inst-all
```

## 2. Instructions for ISODE-Maintainers

### WHOIS

"WHOIS" is a simple program already available at most UNIX workstations and hosts. It is normally used to access the database of users at NIC.DDN.MIL. The instructions below explain how to use WHOIS to access data in the White Pages Pilot X.500 database. These instructions are taken nearly word for word from the "PSI White Pages Pilot Project Administrator's Guide," section 2.8.3.

Choose a machine in your local environment which is running the pilot project software. This machine will offer the white pages service via a network port offering an emulation of the WHOIS service.

On this machine, modify the /etc/services file so that it contains an entry like this:

```
whitepages 17005/tcp
```

Next, edit the file /etc/servers so that it has an entry like this:

```
whitepages tcp $(SBINDIR)in.whitepages
```

Because most user interfaces to WHOIS, e.g., whois(1c), do not allow the user to specify a special port, you should probably also add this line as well:

```
whois tcp$(SBINDIR)in.whitepages
```

If you already have a line for whois in the servers file, then you are already running a WHOIS service, and you should NOT add a second whois line. This machine is not a good choice for running the white pages via WHOIS emulation.

Note that on newer systems derived from Berkeley UNIX, /etc/servers is called /etc/inetd.conf.

#### The whitepages Command

On those systems which are to access the white pages via the network and not locally (i.e., those systems which are not running the pilot project software), you should determine how the user invokes the WHOIS service via the network. For UNIX systems, you should provide a shell script like this:

```
: run this script through /bin/sh

exec /usr/ucb/whois -h wp.psi.net "$*
```

where the name of a host running the pilot project software is substituted for whitepages, e.g., wp.psi.net. This host must have the files /etc/services and /etc/servers edited as described above.

#### De

The compressed tar file for "de" can be created by the following sequence of commands. (Note: In the instructions which follow, <toplevel> indicates the top level of the ISODE distribution.)

```
cd <toplevel>/others/quipu/uips
```

Edit the de/detailor file to set the following options:

```
dsa_address:           (the address of your DSA)
default_country:      (your country)
default_org:          (your organization)
```

```
cp de/make temp1
```

Edit the de/make file so that the last line reads as follows:

```
    exec $M TOPDIR=../ -f ../CONFIG.make -f Makefile ${1+"$@"}
tar -cf de-portable.tar de/*
mv templ de/make
mv de-portable.tar <aboveETCDIR>
    (Here, <aboveETCDIR> is the directory immediately above
    ETCDIR.)
cd <aboveETCDIR>
tar -rf de-portable.tar etc/dsaptailor etc/isomacros
etc/oidtable.at etc/oidtable.oc etc/oidtable.gen
mv de-portable.tar <toplevel>
cd <toplevel>
cp config/CONFIG.make .
tar -rf de-portable.tar h/* h/quipu/* util/* CONFIG.make
libdsap.a libisode.a
rm CONFIG.make
compress de-portable.tar
```

The compressed tar file for de will appear in the top level directory of the ISODE distribution as "de-portable.tar.Z".

#### Dixie/Ud

The latest version of the dixie distribution is available by anonymous ftp at "terminator.cc.umich.edu" in the "x500" directory. The file is named "dixie-<version #>.tar.Z", where <version #> is the number of the latest release.

In order for anyone to use dixie clients, there must be a running dixie server which they can connect to. To set up the dixie server, the DSA manager should take the dixie package and explode/uncompress it in the top level directory of the ISODE distribution. This is done with the following command:

```
uncompress < dixie-<version #>.tar.Z | tar xf -
```

where <version #> is the version number of your dixie package. This will create a "dixie-<version #>" directory. The dixie server, dixie library and any DUAs included with the package will be in this directory branch. Software to support dixie on machines other than UNIX is included as well. This software is stored in the directories "dos", "macintosh" and "vms". UNIX users should feel free to delete these directories and all their contents. Commands of the form:

```
rm -r <dirname>
```

where <dirname> is the directory name, should accomplish this task.

In the top level of the dixie distribution is a file called "Makefile". The file holds several variables which should be configured to match those of your ISODE environment.

```
BINDIR                ISODEINCLUDEDIR
ETCDIR                LIBDIR
INCLUDEDIR            ISODELIBS
INSTLIBDIR
```

In the "server" directory below the top level of the dixie distribution is another "Makefile" file. Configure the ISODELIBS variable in this file, as well.

After setting these variables, cd to the top level of the dixie distribution and type the following commands:

```
make depend-server
make server-only
make inst-server
```

This will create and install the dixie server in your ETCDIR. cd to the ETCDIR and type "dixie" to start the server.

Doog

The compressed tar file for "doog" can be created by the following sequence of commands. (Note: In the instructions which follow, <toplevel> indicates the top level of the ISODE distribution.)

```
cd <toplevel>/others/quipu/uips
cp doog/make temp1
```

Edit the doog/make file so that the last line reads as follows:

```
exec $M TOPDIR=../ -f ../CONFIG.make -f Makefile ${1+"$@"}
```

```
cp doog/query/make temp2
```

Edit the doog/query/make file so that the last line reads as follows:

```
exec $M TOPDIR=../../ -f ../../CONFIG.make -f Makefile  
${1+"$@"}
```

```
tar -cf doog-portable.tar doog/*
```

```
mv temp1 doog/make
```

```
mv temp2 doog/query/make
```

```
mv doog-portable.tar ../../..
```

```
cd ../../..
```

```
cp config/CONFIG.make .
```

```
tar -rf doog-portable.tar h/* h/quipu/* util/* CONFIG.make  
libdsap.a libisode.a
```

```
rm CONFIG.make
```

```
mv doog-portable.tar <aboveETCDIR>
```

(Here, <aboveETCDIR> is the directory immediately above  
ETCDIR.)

```
cd <aboveETCDIR>
```

```
tar -rf doog-portable.tar etc/dsaptailor etc/isomacros  
etc/oidtable.at etc/oidtable.gen etc/oidtable.oc
```

```
compress doog-portable.tar
```

The compressed tar file for doog will appear in the directory  
immediately above ETCDIR as "doog-portable.tar.Z".

### Security Considerations

Security issues are not discussed in this memo.

Author's Address

Tom Tignor  
University of Southern California  
Information Sciences Institute  
4676 Admiralty Way  
Marina del Rey, CA 90292

Phone: (310) 822-1511  
EMail: tpt2@isi.edu