The OS/2 port of bind 4.9.3

Peter Meerwald

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1 What is it?

This is release 4.9.3 of bind[1] ported to OS/2. It relies on EMX[2] 0.9b fix 5 (or newer).

2 Installation

To install just take a look a the standard bind documentation[3]. The directory structure for the OS/2 port is laid down in *named/pathnames.h*. See section 'Directory layout' for further information and means to fit your personal setup without recompiling. The EMX runtime and IBM TCP/IP have to be installed. HPFS is required.

You will find the executables in the source directories (*named/*, *tools/*, *tools/nslookup*), make install does (of course) not work (yet).

It is a good idea to have *syslogd* running the first time you start *named*. Try parameter *-d* for extensive debug info and/or *-q* for query logging. Default log level is 1; a log level of *-d 20* produces over 60 kb of output during the first 2 seconds – beware...

3 OS/2 specific stuff

3.1 What happened to the code?

Actual code is pretty unchanged, I adapted the makefiles, figured out a suitable *compat/lib/lib44bsd.a*, read *conf/protability.h* very carefully :) and while doing so my OS/2 box turned into a unix-lookalike[4].

Look for __EMX__ defines in the code (you won't find many) to see what changed.

Upon request (I was really forced to do so:) I made the path-setup somewhat more dynamic for OS/2 – now the code evaluates the environment variables ETC, TMP and TEMP and adapts accordingly. Two (hopefully) new environment were introduced:

- NAMED_XFER – points to the named-xfer program (otherwise the default */tcpip/bin/named-xfer* is used)
- NAMED_BOOT – points to the named boot file (otherwise *named* looks for *TMP/namedb/named.boot*)
- NSLOOKUP_HELP – points to the nslookup helpfile (*nslookup* assumes to find its helpfile as */tcpip/help/nslookup.help*)

[1] Berkley Internet Name Domain

[2] Eberhard Mattes eXtentions – a distribution of GCC for OS/2

[3] look at *http://www.vix.com/isc/bind.html* for a reference manual (BOG – Bind Operations Guide), FAQ, protocol definitions, ...

[4] you may wish to get GNU shell—file—text utilities from hobbes

Beware! The *nice()* and *renice()* code has been replaced with dummy code, so the OS/2 port may consume more CPU time than neccessary.

3.2 Re-compiling

Especially *named/Makefile* contains one bad hardcoded hack (I was unable get sed to work), I used tcsh 6.0.6.1 **and** bash 1.12, to me, it seems that these shells lack some features :) - well I'm very lost when it comes to shell setup/shell features - I am awaiting your hints...

News flash: Try ksh 5.27 to re-compile – works much better that tcsh and bash! Compiles the entier project in **one** pass, wow...

In order to re-compile the bind port you'll need a syslog library (on hobbes[5] for IBM's CSet, a port of the port to EMX is available from the author) and flex 2.4.5.

/emx/include/sys/time.h was extended to include stuff we need for setitimer(). Maybe we will see this in one of the next EMX distributions... [bad hack :)]

I removed the *contrib/*, *shres/*, *doc/rfc/* directory from the original distribution, some postscript files about DNS security were also removed.

3.3 Sending signals

Unix background daemons receive commands via signals that are sent to their pid[6]. bind 4.9.3 understands a number of signals: SIGINT, SIGQUIT, SIGIOT, SIGUSR1, SIGUSR2, SIGHUP, SIGALARM, SIGTERM.

A way to send signals under OS/2 is provided in the Apache httpd port[7] in directory *Apache/os2/*.

4 History of the OS/2 port

- June 14, 1996 — released *bind493a.zip*, initial release
- July 1, 1996 — *bind493b.zip* contains this wonderful LaTeX -README and, more important, a fix for the "core dump" bug when set up as a secondary name server (well, now everything is linked static); some cleanups were done to the Makefiles; this is just an **update** release, it contains **only** executables and this README!
- July 3, 1996 — released *bind493c.zip* to fix a bug which occurred when transferring a zone; it contains only named.exe and an updated README.

  > /* kernels that map pages for IO end up failing if the pipe is full at exit and we take away the final buffer. this is really a kernel bug but it's harmless on systems that are not broken, so... */

- August 2, 1996 — rename() does **not** overwrite the target under OS/2, implemented an awkward work-around (see compat/lib/rename_unixstyle.c).
- August 3, 1996 — started to make the bind stuff more dynamic – looking for environment variables ETC and TMP or TEMP first...
- August 8, 1996 — *nsloopup.help* is now searched in the path specified by the HELP environment variable; the following optional environment variables are supported now: NAMED_XFER may point to the *named-xfer* program,

[5] point your browser to *ftp://ftp-os2.nmsu.edu/os2* or *ftp://ftp-os2.cdrom.com*
[6] a unique number identifying a process
[7] again on hobbes or *http://www.apache.org/*

NAMED_BOOT locates the *named.boot* file and NSLOOKUP_HELP may point to the *nslookup.help* file

5 Directory layout of the OS/2 port

You will have less troubles if you use the directory layout given below! However, you can fit the OS/2 bind directory layout to your needs by setting the environment variables gives in brackets.

/tcpip/bin/
named.exe (or somewhere in your PATH)
named-xfer.exe (NAMED_XFER)
nslookup.exe (or somewhere in your PATH)
dig.exe (or somewhere in your PATH)
dnsquery.exe (or somewhere in your PATH)
host.exe (or somewhere in your PATH)
/tcpip/help/
nslookup.help (NAMED_HELP)
/tcpip/etc/ (ETC)
named.pid
/tcpip/etc/namedb/ (ETC)
named.boot (NAMED_BOOT)
(and your configuration files) (use 'directory' keyword in your *named.boot*)
/tmp/ (TMP or (TEMP)
named.run
named_dump.db
named.stats
xfer.trace
xfer.ddt.XXXXXX

Example:

- You are using MPTS (not LAPS, TCP/IP 2.0), so your ETC environment variable will likely point to x:/mptn/etc – your *named.boot* file should be located in x:/mptn/etc/namedb.
- Using MPTS want to have your bind executables in x:/mptn/bin – set NAMED_XFER to x:/mptn/bin, set NSLOOKUP_HELP to x:/mptn/help (and copy *nslookup.help* to x:/mptn/help of course).
- You absolutely want the named configuration files on c:/named – so set NAMED_BOOT to c:/named.

Warning: The OS/2 bind port has not been excessively tested in a multiple-drive configuration (say ETC = g:/mptn/etc, TMP = d:/tmp, NAMED_BOOT = c:/namedb, ...).

6 To do

- either replace makefiles with REXX scripts or craft'em right
- include a working sample configuration
- find and fix bugs in the port :)

- make named display some debug info in its window
- provide some means to send signals to *named*
- figure out a way to have dynamic linking **and** a working fork()
- a solid distribution archive
- get the OS/2 port into the standard bind distribution? is it worth the struggle?

7 Acknowledgements

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Christof 'Mirus' Meerwald for his punny Linux box operating as the secondary in-house domain

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Christoph Lechleitner lech@lech.priv.at for his help in general

...and some other people those contributions were dumped by my brain-dead NeXT-mailer at university.

8 How to contact the author

I'm very interested in your comments and flames... Still, if everything is running fine please tell me the domain you are serving with this bind port, just for my ego :)

Peter Meerwald	pmeerw@cosy.sbg.ac.at
Schiestandstr. 3	Peter.Meerwald@2-315-11-0.st.co.at
A-5061 Elsbethen/AUSTRIA	2:315/11@fidonet.org

BTW: Are you interested in an sendmail port for OS/2? Is there already a port? Please let me know...

9 Disclaimer

Beware: I am no DNS specialist. There may be serious bugs or security holes in the OS/2 port of bind 4.9.3 – use at your own risk! Insert your favourite disclaimer text below...

[8] online at *http://www.lh.umu.se/~bjorn/linux/howto/DNS-HOWTO.html* for example