

Plan 9 From Bell Labs Fifth Edition Release Notes March, 2014

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The fifth release of the Plan 9 operating system from Bell Labs contains many small improvements and additions to the system.

fossil(4) and *venti(8)* are now the production file server and block store, respectively, and better documented. *Venti* has been greatly improved internally and there is a new *libventi*, though *fossil* still uses the old one. *kfs(4)* and *Infs(4)* are deprecated and the old standalone file server and the IL protocol are gone. *cwfs(4)* provides the function of the old file server as a user-mode program, plus the ability to communicate via TCP or other non-IL/IPv4 protocols.

Network booting of PCs via PXE is now routine. Other machines normally boot via BOOTP/DHCP and TFTP without PXE.

The PC bootstrap programs are now variants of the PC kernel, and use kernel device drivers unmodified.

New ARM machines such as the Sheevaplug, Gumstix and Trimslice are now supported, including multi-core machines. At least one current MIPS machine, the Mikrotik Routerboard 450G, is now supported.

Compilers now exist for AMD64 and 64-bit PowerPC processors. The ARM compiler can now profile programs and generate ELF executables. The MIPS loader can now emit ELF64 executables. The compiler for Sparc has been little-used of late as we have no current kernels and no suitable hardware to test it. The DEC Alpha and Motorola 68000 and 68020 architectures have been retired.

A few 10Gb/s Ethernet adapters are now supported, mainly Intel ones.

IPv6 support is better (in part due to access to the Internet via native IPv6), and includes tunnelling through IPv4 to reach the wider IPv6 internet; see *6in4(8)*. Bugs in ICMPv6 have been fixed and *dial(2)* now dials all addresses (v4 and v6) concurrently until it connects.

USB support has improved and now includes USB 2 (EHCI). There are drivers for USB Ethernet dongles and the like; see *usb(3)* and *usb(4)*.

There is now native support for SATA devices via AHCI.

Cdfs now supports access to data (not audio nor video) on DVDs and Blu-ray discs.

VESA video on PCs now works fairly reliably, even on multiprocessors.

ATA-over-Ethernet is supported; see *aoe(3)*. iSCSI is also supported.

Unicode Runes are now 21 bits wide and UTF sequences may be 4 bytes long.

Restarting the system without a hardware reset now works well (except on the Trimslice, where the hardware doesn't cooperate).

ndb/dns has been extended and improved in various ways but its UDP server still has hard-to-find memory leaks and eventually corruption. We can only recommend dedicating machines to act as UDP nameservers and rebooting them frequently.

The Plan 9 Wiki (<http://plan9.bell-labs.com/wiki/plan9>) and Usenet

group (`comp.os.plan9`) are the places to visit to learn more and stay current. In particular, the installation notes are now maintained in the Wiki; the traditional papers on installation and start-up are gone.

If you have problems, mail `9trouble@plan9.bell-labs.com` or, better, check the wiki <http://plan9.bell-labs.com/wiki/plan9> or ask the Usenet newsgroup `comp.os.plan9`.

Good Luck!