Preface to the Second (1995) Edition

Plan 9 was born in the same lab where Unix began. Old Unix hands will recognize the cultural heritage in this manual, where venerable Unix commands live on, described in the classic Unix style. Underneath, though, lies a new kind of system, organized around communication and naming rather than files and processes.

In Plan 9, distributed computing is a central premise, not an evolutionary add-on. The system relies on a uniform protocol to refer to and communicate with objects, whether they be data or processes, and whether or not they live on the same machine or even similar machines. A single paradigm (writing to named places) unifies all kinds of control and interprocess signaling.

Name spaces can be built arbitrarily. In particular all programs available to a given user are customarily united in a single logical directory. Temporary files and untrusted activities can be confined in isolated spaces. When a portable machine connects to the central, archival file system, the machine's local name space is joined smoothly to that of the archival file system. The architecture affords other unusual abilities, including:

> Objects in name spaces imported from other machines (even from foreign systems such as MS-DOS) are transparently accessible.
> Windows appear in name spaces on a par with files and processes.
> A historical file system allows one to navigate the archival file system in time as well as in space; backup files are always at hand.
> A debugger can handle simultaneously active processes on disparate kinds of hardware.

The character set of Plan 9 is Unicode, which covers most of the world's major scripts. The system has its own programming languages: a dialect of C with simple inheritance, a simplified shell, and a CSP-like concurrent language, Alef. An ANSI-POSIX emulator (APE) admits unreconstructed Unix code.

Plan 9 is the work of many people. The protocol was begun by Ken Thompson; naming was integrated by Rob Pike and networking by Dave Presotto. Phil Winterbottom simplified the management of name spaces and re-engineered the system. They were joined by Tom Killian, Jim McKie, and Howard Trickey in bringing the system up on various machines and making device drivers. Thompson made the C compiler; Pike, window systems; Tom Duff, the shell and raster graphics; Winterbottom, Alef; Trickey, Duff, and Andrew Hume, APE. Bob Flandrena ported a myriad of programs to Plan 9. Other contributors include Alan Berenbaum, Lorinda Cherry, Bill Cheswick, Sean Dorward, David Gay, Paul Glick, Eric Grosse, John Hobby, Gerard Holzmann, Brian Kernighan, Bart Locanthi, Doug McIlroy, Judy Paone, Sean Quinlan, Bob Restrick, Dennis Ritchie, Bjarne Stroustrup, and Cliff Young.

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