



# **Installation Guide**

## **Mac OS X Server Developer**

---

 Apple Computer, Inc.

Copyright © 1998-1999 Apple Computer, Inc. All rights reserved.

Under the copyright laws, this manual may not be copied, in whole or in part, without the written consent of Apple.

The Apple logo is a trademark of Apple Computer, Inc., registered in the U.S. and other countries. Use of the “keyboard” Apple logo (Option-Shift-K) for commercial purposes without the prior written consent of Apple may constitute trademark infringement and unfair competition in violation of federal and state laws.

Every effort has been made to ensure that the information in this manual is accurate. Apple is not responsible for printing or clerical errors.

Apple Computer, Inc.  
1 Infinite Loop  
Cupertino, CA 95014-2084  
408-996-1010  
<http://www.apple.com/>

Apple, the Apple logo, AppleVision, ColorSync, Mac, and Power Macintosh are trademarks of Apple Computer, Inc., registered in the U.S. and other countries.

Additional third-party acknowledgments are in the Acknowledgments appendix.

Other company and product names mentioned herein may be trademarks of their respective companies. Mention of third-party products is for informational purposes only and constitutes neither an endorsement nor a recommendation. Apple assumes no responsibility with regard to the performance or use of these products.

Simultaneously published in the United States and Canada.

This manual describes Mac OS X Server Developer version 1.0.

Writing: M. Raymond Jason and Greg Wilson  
Editing: Laurel Rezeau  
Graphic Design: Karin Stroud  
Production: Gerri Gray  
Art and Production management: Gary Miller  
Technical Publications management: Matt Rollefson and Ronald Hayden

---

# Table of Contents

---

## **Welcome to Mac OS X Server Developer 4**

System Requirements 4

## **Installing Mac OS X Server Developer 6**

## **Acknowledgements 9**

---

# Welcome to Mac OS X Server Developer

---

Mac OS X Server Developer provides tools that let you access these frameworks through a consistent and well-designed set of application programming interfaces (APIs) based on an integration of Apple technologies and the Java™ programming language.

Writing code with Mac OS X Server Developer allows you to create robust applications for Mac OS X and for other computer platforms such as Microsoft Windows 98 and Windows NT.

This installation guide describes how to install Mac OS X Server Developer on Mac OS X Server. The Mac OS X Server Developer CD-ROM accompanying this guide contains the software you need for this installation.

## System Requirements

To use Mac OS X Server Developer you must have a Power Macintosh computer running Mac OS X Server. See your *Mac OS X Server Installation Manual* for more information on system requirements.

Your computer should have

- at least 64 MB of RAM
- at least 500 MB of available hard disk space



---

# Installing Mac OS X Server Developer

---

1. Start up your computer in Mac OS X Server. (Refer to your *Mac OS X Server Installation Manual* for more information.)
2. Log in to an account (typically, “root”) that has Administrator privileges. Installation doesn’t work from accounts with lesser privileges.

The software you install will be available to all users.

3. Insert the Mac OS X Server Developer CD into your computer’s CD-ROM drive. You may need to double-click the CD’s icon to open its main window.
4. Locate the MacOSXServer.mpkg icon on the CD, in the Mac\_OS\_X\_Server folder. Double-click the icon. The installer for Mac OS X Server Developer starts and opens the Package Selection dialog box.

(The other .mpkg icons in the Mac\_OS\_X\_Server folder install Apple’s WebObjects product. To install these, you must have an appropriate license from Apple Computer, Inc.)

5. Apple recommends that you perform a Complete installation, as described next. If you want to select the components to install, follow the Custom installation instructions instead.

**Complete installation** In the Package Selection dialog box, click Install. For each package, the installer checks for existing files on your disk and then installs the package files. You get everything you need to develop Mac OS X Server applications.

The installer may need to overwrite existing files or may need to run scripts. In these cases it presents one or more alerts. To proceed with installation, click OK.

**Custom Installation** If you want to exclude one or more components, uncheck them before clicking Install. The following restrictions apply:

- 
- To develop Mac OS X Server applications, you must install both the Developer Tools and the Developer Libraries packages.
  - To honor file dependencies, you must install the Developer Tools package before the Developer Libraries package.

The installer may need to overwrite existing files or may need to run scripts. In these cases it presents one or more alerts. To proceed with installation, click OK.

6. When all the files are installed, the legend in the installer dialog box changes to Installation Completed. Quit the installer by choosing the Package ► Quit menu item, and then restart your computer.





---

# Acknowledgements

---

Portions of the Apple software may utilize the following copyrighted material, the use of which is hereby acknowledged.

**Adobe Systems** Copyright © 1985-1992 Adobe Systems Incorporated. All Rights Reserved.

ITC Bookman, ITC Avant Garde Gothic, and ITC Zapf Chancery are registered trademarks of International Typeface Corporation.

Helvetica, Palatino, and Times are trademarks of Linotype AG and/or its subsidiaries.

**Alice Group** Copyright © 1993 Allen K. Briggs, Chris P. Caputo, Michael L. Finch, Bradley A. Grantham, and Lawrence A. Kesteloot. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met: 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution. 3. All advertising materials mentioning features or use of this software must display the following acknowledgement: This product includes software developed by the Alice Group. 4. The names of the Alice Group or any of its members may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE ALICE GROUP "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE ALICE GROUP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

**Apache Group** Copyright © 1995-1998 The Apache Group. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met: 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution. 3. All advertising materials mentioning features or use of this software must display the following acknowledgment: "This product includes software developed by the Apache Group for use in the Apache HTTP server project (<http://www.apache.org/>)." 4. The names "Apache Server" and "Apache Group" must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact [apache@apache.org](mailto:apache@apache.org). 5. Products derived from this software may not be called "Apache" nor may "Apache" appear in their names without prior written permission of the Apache Group. 6. Redistributions of any form whatsoever must retain the following acknowledgment: "This product includes software developed by the Apache Group for use in the Apache HTTP server project (<http://www.apache.org/>)."

THIS SOFTWARE IS PROVIDED BY THE APACHE GROUP "AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE APACHE GROUP OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

**AT&T** The author of this software is David M. Gay. Copyright © 1991 by AT&T.

Permission to use, copy, modify, and distribute this software for any purpose without fee is hereby granted, provided that this entire notice is included in all copies of any software which is or includes a copy or modification of this software and in all copies of the supporting documentation for such software.

THIS SOFTWARE IS BEING PROVIDED "AS IS", WITHOUT ANY EXPRESS OR IMPLIED WARRANTY. IN PARTICULAR, NEITHER THE AUTHOR NOR AT&T MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND CONCERNING THE MERCHANTABILITY OF THIS SOFTWARE OR ITS FITNESS FOR ANY PARTICULAR PURPOSE.

**Carnegie-Mellon University** Copyright © 1991 Carnegie Mellon University. All Rights Reserved.

Permission to use, copy, modify and distribute this software and its documentation is hereby granted, provided that both the copyright notice and this permission notice appear in all copies of the software, derivative works or modified versions, and any portions thereof, and that both notices appear in supporting documentation. CARNEGIE MELLON ALLOWS FREE USE OF THIS SOFTWARE IN ITS "AS IS" CONDITION. CARNEGIE MELLON DISCLAIMS ANY LIABILITY OF ANY KIND FOR ANY DAMAGES WHATSOEVER RESULTING FROM THE USE OF THIS SOFTWARE. Carnegie Mellon requests users of this software to return to Software.Distribution@CS.CMU.EDU; or Software Distribution Coordinator, School of Computer Science, Carnegie Mellon University, Pittsburgh PA 15213-3890; any improvements or extensions that they make and grant Carnegie Mellon the rights to redistribute these changes.

**Ian F. Darwin** Copyright © 1987 Ian F. Darwin. Written by Ian F. Darwin.

This software is not subject to any license of the American Telephone and Telegraph Company or of the Regents of the University of California. Permission is granted to anyone to use this software for any purpose on any computer system, and to alter it and redistribute it freely, subject to the following restrictions: 1. The author is not responsible for the consequences of use of this software, no matter how awful, even if they arise from flaws in it. 2. The origin of this software must not be misrepresented, either by explicit claim or by omission. Since few users ever read sources, credits must appear in the documentation. 3. Altered versions must be plainly marked as such, and must not be misrepresented as being the original software. Since few users ever read sources, credits must appear in the documentation. 4. This notice may not be removed or altered.

**Digital Equipment Corporation** Portions Copyright © 1993 by Digital Equipment Corporation.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies, and that the name of Digital Equipment Corporation not be used in advertising or publicity pertaining to distribution of the document or software without specific, written prior permission.

THE SOFTWARE IS PROVIDED "AS IS" AND DIGITAL EQUIPMENT CORPORATION DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL DIGITAL EQUIPMENT CORPORATION BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

**FreeBSD** This product contains software provided by FreeBSD, Inc. and its contributors.

**Free Software Foundation** Copyright © 1988-1998 Free Software Foundation, Inc.

Parts of this product include certain software owned by the Free Software Foundation ("FSF software") and provided under the terms of the GNU General Public License; you can redistribute FSF software and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation. The FSF software is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You may obtain a complete machine-readable copy of the source code for the FSF software under the terms of the FSF's General Public License, without charge except for the cost of media, shipping, and handling, upon written request to Apple. A copy of the FSF's General Public License is included with this product.

**IBM Corporation** Copyright © 1987 IBM Corporation. All rights reserved.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of IBM not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

IBM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL IBM BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

**Ing. C. Olivetti & C. S.p.A.** Copyright © 1988, 1989 Ing. C. Olivetti & C. S.p.A. All rights reserved. Copyright © 1988, 1989 by Olivetti Advanced Technology Center, Inc., Cupertino, California. All rights reserved.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appears in all copies and that both the copyright notice and this permission notice appear in supporting documentation, and that the name of Olivetti not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

OLIVETTI DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL OLIVETTI BE LIABLE FOR ANY SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN ACTION OF CONTRACT, NEGLIGENCE, OR OTHER TORTIOUS ACTION, ARISING OUR OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

**Massachusetts Institute of Technology** Copyright © 1996 by the Massachusetts Institute of Technology. All rights reserved.

Export of this software from the United States of America may require a specific license from the United States Government. It is the responsibility of any person or organization contemplating export to obtain such a license before exporting. WITHIN THAT CONSTRAINT, permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of M.I.T. not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. M.I.T. makes no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

THIS SOFTWARE IS PROVIDED ``AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Individual source code files are copyright MIT, Cygnus Support, OpenVision, Oracle, Sun Soft, and others. Project Athena, Athena, Athena MUSE, Discuss, Hesiod, Kerberos, Moira, and Zephyr are trademarks of the Massachusetts Institute of Technology (MIT). No commercial use of these trademarks may be made without prior written permission of MIT. "Commercial use" means use of a name in a product or other for-profit manner. It does NOT prevent a commercial firm from referring to the MIT trademarks in order to convey information (although in doing so, recognition of their trademark status should be given).

**David L. Mills** Copyright © David L. Mills 1992, 1993, 1994, 1995, 1996.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appears in all copies and that both the copyright notice and this permission notice appear in supporting documentation, and that the name University of Delaware not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. The University of Delaware makes no representations about the suitability this software for any purpose. It is provided "as is" without express or implied warranty.

**NetBSD** This product contains software provided by The NetBSD Foundation, Inc. and its contributors.

**Mark Nudelman** Copyright © 1984,1985,1989,1994,1995,1996 Mark Nudelman. All rights reserved.

**Tim Olson** Copyright © 1993, 1994, 1995 Tim Olson.

This software is distributed absolutely without warranty. You are free to use and modify the software as you wish. You are also free to distribute the software as long as you retain the above notice, and you make clear what your modifications were. Send comments and bug reports to [tim@apple.com](mailto:tim@apple.com)

**OpenBSD** This product contains software provided by OpenBSD and its contributors.

**Open Software Foundation** Copyright © 1995, 1994, 1993, 1992, 1991, 1990 Open Software Foundation, Inc.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appears in all copies and that both the copyright notice and this permission notice appear in supporting documentation, and that the name of ("OSF") or Open Software Foundation not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

OSF DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL OSF BE LIABLE FOR ANY SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN ACTION OF CONTRACT, NEGLIGENCE, OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE

**OpenVision Technologies** Copyright © OpenVision Technologies, Inc., 1996, All Rights Reserved.

WARNING: Retrieving the OpenVision Kerberos Administration system source code, as described below, indicates your acceptance of the following terms. If you do not agree to the following terms, do not retrieve the OpenVision Kerberos administration system.

You may freely use and distribute the Source Code and Object Code compiled from it, with or without modification, but this Source Code is provided to you "AS IS" EXCLUSIVE OF ANY WARRANTY, INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ANY OTHER WARRANTY, WHETHER EXPRESS OR IMPLIED. IN NO EVENT WILL OPENVISION HAVE ANY LIABILITY FOR ANY LOST PROFITS, LOSS OF DATA OR COSTS OF PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES, OR FOR ANY SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THIS AGREEMENT, INCLUDING, WITHOUT LIMITATION, THOSE RESULTING FROM THE USE OF THE SOURCE CODE, OR THE FAILURE OF THE SOURCE CODE TO PERFORM, OR FOR ANY OTHER REASON

OpenVision retains all copyrights in the donated Source Code. OpenVision also retains copyright to derivative works of the Source Code, whether created by OpenVision or by a third party. The OpenVision copyright notice must be preserved if derivative works are made based on the donated Source Code.

**Sun Microsystems** Copyright © 1987 by Sun Microsystems, Inc. Sun RPC is a product of Sun Microsystems, Inc. and is provided for unrestricted use provided that this legend is included on all tape media and as a part of the software program in whole or part. Users may copy or modify Sun RPC without charge, but are not authorized to license or distribute it to anyone else except as part of a product or program developed by the user or with the express written consent of Sun Microsystems, Inc. Sun RPC is provided with no support and without any obligation on the part of Sun Microsystems, Inc. to assist in its use, correction, modification or enhancement. SUN RPC IS PROVIDED AS IS WITH NO WARRANTIES OF ANY KIND INCLUDING THE WARRANTIES OF DESIGN, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, USAGE OR TRADE PRACTICE. SUN MICROSYSTEMS, INC. SHALL HAVE NO LIABILITY WITH RESPECT TO THE INFRINGEMENT OF COPYRIGHTS, TRADE SECRETS OR ANY PATENTS BY SUN RPC OR ANY PART THEREOF.

In no event will Sun Microsystems, Inc. be liable for any lost revenue or profits or other special, indirect and consequential damages, even if Sun has been advised of the possibility of such damages. Sun Microsystems, Inc. 2550 Garcia Avenue Mountain View, California 94043.

Copyright © 1993 by Sun Microsystems, Inc. All rights reserved.

Developed at SunPro, a Sun Microsystems, Inc. business. Permission to use, copy, modify, and distribute this software is freely granted, provided that this notice is preserved.

**Avadis Tevanian, Jr.** Copyright © 1986, Avadis Tevanian, Jr.

**University of California, et. al.** This product includes software developed by the University of California, Berkeley, and its contributors.

Copyright © 1980, 1982, 1983, 1985-1995 The Regents of the University of California; Copyright © 1998 Apple Computer, Inc.; Copyright © 1986 Robert V. Baron; Copyright © 1991, 1992, 1993, 1994, 1995, 1996 Keith Bostic; Copyright © 1992-1993 John Brezak; Copyright © 1988-1989 by Adam de Boor; Copyright © 1994 Christopher G. Demetriou; Copyright © 1992-1993 Theo de Raadt; Copyright © 1994 Simon J. Gerraty; Copyright © 1994-97 Mats O Jansson; Copyright © 1993 Thomas Koenig; Copyright © 1993 Adrian Mariano; Copyright © 1993 Andrew Moore, Talke Studio; Copyright © 1992 Keith Muller; Copyright © 1995 Bill Paul; Copyright © 1993 David Parsons; Copyright © 1990-1992 Jan-Simon Pendry; Copyright © 1994-1996 Wolfram Schneider; Copyright © 1991, 1994 Wolfgang Solfrank and TooLs GmbH; Copyright © 1989 Berkeley Softworks; Copyright © 1996 Ignatios Souvatzis; Copyright © 1992 Diomidis Spinellis; Copyright © 1985 Sun Microsystems, Inc.; Copyright © 1988, 1992 The University of Utah and the Center for Software Science (CSS).; Copyright © UNIX System Laboratories, Inc.; Copyright © 1993-1994 Winning Strategies, Inc. All rights reserved.

This code is derived from software contributed to Berkeley by Adam S. Moskowitz of Menlo Consulting; Adam de Boor; Asa Romberger; Atsushi Murai (amurai@spec.co.jp); Barry Brachman; Bob Toxen; Brian Hirt.; Case Larsen; Chris Newcomb; Chris Torek; Cimarron D. Taylor of the University of California, Berkeley; Darren F. Provine; Dave Taylor, of Intuitive Systems; Dave Yost; David Barto at Celerity Computer Corp.; David C. Elliott, of MIPS Computer Systems; David Goodenough; David Hitz of Auspex Systems, Inc.; Diomidis Spinellis of Imperial College, University of London; Donn Seeley at Berkeley Software Design, Inc.; Eamonn McManus of Trinity College Dublin; Ed James; Edward Sze-Tyan Wang; Edward Wang at The University of California, Berkeley; Guy Harris at Network Appliance Corp.; Henry Spencer of the University of Toronto; Herb Hasler and Rick Macklem at The University of Guelph; James A. Woods; James W. Williams of the University of Maryland and NASA Goddard Space Flight Center; Jan-Simon Pendry; Jef Poskanzer and Craig Leres of the Lawrence Berkeley Laboratory; Jerry Berkman; Jim Gillogly at The Rand Corporation; Jim R. Oldroyd at The Instruction Set and Keith Gabryelski at Commodore Business Machines; John B. Roll Jr.; Joseph Orost; Keith Muller of the University of California, San Diego and Lance Visser of Convex Computer Corporation; Ken Arnold; Ken Smith of The State University of New York at Buffalo; Kenneth Almquist; Kevin Fall; Kevin Ruddy; Kim Letkeman; Landon Curt Noll; Marciano Pitargue; Michael Fischbein; Michael Rendell of the Memorial University of Newfoundland; Michiro Hikida; Mike Hibler; Mike Muuss; Mike Olson; Muffy Barkocy; Ozan Yigit at York University; Pace Willisson (pace@blitz.com); Ralph Campbell; Rich Salz of BBN Inc.; Rick Adams; Rick Macklem at The University of Guelph; Robert Corbett; Robert Elz at The University of Melbourne; Robert Paul Corbett; Spencer Thomas; Stephen Deering of Stanford University; Steve Hayman of the Indiana University Computer Science Department; Sun Microsystems, Inc.; Symmetric Computer Systems; Timothy C. Stoehr; Tony Nardo of the Johns Hopkins University/Applied Physics Lab; and the Systems Programming Group of the University of Utah Computer Science Department.

The United States Government has rights in parts of this work pursuant to contract no. DE-AC03-76SF00098 between the United States Department of Energy and the University of California. Some code is derived from software contributed to Berkeley by the Center for Software Science of the University of Utah Computer Science Department. CSS requests users of this software to return to [css-dist@cs.utah.edu](mailto:css-dist@cs.utah.edu) any improvements that they make and grant CSS redistribution rights.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met: 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution. 3. All advertising materials mentioning features or use of this software must display the following acknowledgement: This product includes software developed by the University of California, Berkeley and its contributors. 4. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR

TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

**University of Washington** Copyright © 1991-1993 University of Washington

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee to the University of Washington is hereby granted, provided that the above copyright notice appears in all copies and that both the above copyright notice and this permission notice appear in supporting documentation, and that the name of the University of Washington not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. This software is made available "as is", and THE UNIVERSITY OF WASHINGTON DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, WITH REGARD TO THIS SOFTWARE, INCLUDING WITHOUT LIMITATION ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND IN NO EVENT SHALL THE UNIVERSITY OF WASHINGTON BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, TORT (INCLUDING NEGLIGENCE) OR STRICT LIABILITY, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Pine and Pico are trademarks of the University of Washington. No commercial use of these trademarks may be made without prior written permission of the University of Washington.

**Paul Vixie** Copyright © 1988,1990,1993,1994 by Paul Vixie. All rights reserved.

Distribute freely, except: don't remove my name from the source or documentation (don't take credit for my work), mark your changes (don't get me blamed for your possible bugs), don't alter or remove this notice. May be sold if buildable source is provided to buyer. No warrantee of any kind, express or implied, is included with this software; use at your own risk, responsibility for damages (if any) to anyone resulting from the use of this software rests entirely with the user.

**Larry Wall** Copyright © 1989-1997, Larry Wall. All rights reserved.

This program is free software; you can redistribute it and/or modify it under the terms of either: a) the GNU General Public License as published by the Free Software Foundation; either version 1, or (at your option) any later version, or b) the "Artistic License" which comes with this Perl Kit.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See either the GNU General Public License or the Artistic License for more details.

You should have received a copy of the Artistic License with this Kit, in the file named "Artistic". If not, I'll be glad to provide one. You should also have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

For those of you that choose to use the GNU General Public License, my interpretation of the GNU General Public License is that no Perl script falls under the terms of the GPL unless you explicitly put said script under the terms of the GPL yourself.

Furthermore, any object code linked with Perl does not automatically fall under the terms of the GPL, provided such object code only adds definitions of subroutines and variables, and does not otherwise impair the resulting interpreter from executing any standard Perl script. I consider linking in C subroutines in this manner to be the moral equivalent of defining subroutines in the Perl language itself. You may sell such an object file as proprietary provided that you provide or offer to provide the Perl source, as specified by the GNU General Public License. (This is merely an alternate way of specifying input to the program.) You may also sell a binary produced by the dumping of a running Perl script that belongs to you, provided that you provide or offer to provide the Perl source as specified by the GPL. (The fact that a Perl interpreter and your code are in the same binary file is, in this case, a form of mere aggregation.) This is my interpretation of the GPL. If you still have concerns or difficulties understanding my intent, feel free to contact me. Of course, the Artistic License spells all this out for your protection, so you may prefer to use that.