
Table of Contents

Foreword	11
Preface	13
Audience	13
How to Read this Book	13
Conventions Used in This Book	14
Typographic Conventions	14
Icons	14
Organization of This Book	15
This Book is Free	16
Acknowledgments	16
From Ben Collins-Sussman	17
From Brian W. Fitzpatrick	17
From C. Michael Pilato	17
New in Subversion 1.1	17
1. Introduction	1
What is Subversion?	1
Subversion's History	1
Subversion's Features	2
Subversion's Architecture	3
Installing Subversion	4
Subversion's Components	5
A Quick Start	5
2. Basic Concepts	8
The Repository	8
Versioning Models	8
The Problem of File-Sharing	9
The Lock-Modify-Unlock Solution	9
The Copy-Modify-Merge Solution	11
Subversion in Action	13
Working Copies	13
Revisions	16
How Working Copies Track the Repository	18
The Limitations of Mixed Revisions	18
Summary	19
3. Guided Tour	20
Help!	20
Import	20
Revisions: Numbers, Keywords, and Dates, Oh My!	20
Revision Numbers	20
Revision Keywords	21
Revision Dates	22
Initial Checkout	23
Basic Work Cycle	24
Update Your Working Copy	25
Make Changes to Your Working Copy	26
Examine Your Changes	27
Resolve Conflicts (Merging Others' Changes)	32
Commit Your Changes	35
Examining History	36
svn log	37
svn diff	38
svn cat	40
svn list	40

A Final Word on History	41
Other Useful Commands	41
svn cleanup	41
svn import	41
Summary	42
4. Branching and Merging	43
What's a Branch?	43
Using Branches	43
Creating a Branch	45
Working with Your Branch	47
The Key Concepts Behind Branches	49
Copying Changes Between Branches	49
Copying Specific Changes	50
Best Practices for Merging	52
Common Use-Cases for Merging	54
Merging a Whole Branch to Another	54
Undoing Changes	56
Resurrecting Deleted Items	57
Switching a Working Copy	58
Tags	60
Creating a Simple Tag	60
Creating a Complex Tag	60
Branch Maintenance	61
Repository Layout	61
Data Lifetimes	62
Summary	63
5. Repository Administration	64
Repository Basics	64
Understanding Transactions and Revisions	64
Unversioned Properties	65
Repository Data-Stores	65
Repository Creation and Configuration	67
Hook Scripts	69
Berkeley DB Configuration	71
Repository Maintenance	71
An Administrator's Toolkit	71
Repository Cleanup	80
Managing Disk Space	83
Repository Recovery	84
Migrating a Repository	85
Repository Backup	88
Adding Projects	90
Choosing a Repository Layout	90
Creating the Layout, and Importing Initial Data	91
Summary	92
6. Server Configuration	93
Overview	93
Network Model	94
Requests and Responses	94
Client Credentials Caching	94
svnserve, a custom server	96
Invoking the Server	96
Built-in authentication and authorization	97
External path-based authorization	99
SSH authentication and authorization	99
httpd, the Apache HTTP server	101
Prerequisites	102
Basic Apache Configuration	102

Authentication Options	104
Authorization Options	107
Extra Goodies	111
Supporting Multiple Repository Access Methods	113
7. Advanced Topics	115
Runtime Configuration Area	115
Configuration Area Layout	115
Configuration and the Windows Registry	116
Configuration Options	117
Properties	121
Why Properties?	121
Manipulating Properties	122
Special Properties	125
Automatic Property Setting	131
Externals Definitions	132
Vendor branches	133
General Vendor Branch Management Procedure	134
svn_load_dirs.pl.....	136
8. Developer Information	138
Layered Library Design	138
Repository Layer	139
Repository Access Layer	143
Client Layer	146
Using the APIs	146
The Apache Portable Runtime Library	147
URL and Path Requirements	147
Using Languages Other than C and C++	147
Inside the Working Copy Administration Area	149
The Entries File	150
Pristine Copies and Property Files	151
WebDAV	151
Programming with Memory Pools	152
Contributing to Subversion	154
Join the Community	154
Get the Source Code	155
Become Familiar with Community Policies	155
Make and Test Your Changes	155
Donate Your Changes	156
9. Subversion Complete Reference	157
The Subversion Command Line Client: svn	157
svn Switches	157
svn Subcommands	160
svnadmin	218
svnadmin Switches	218
svnadmin Subcommands	219
svnlook	232
svnlook Switches	232
svnlook	233
svnserve	248
svnserve Switches	248
A. Subversion for CVS Users	250
Revision Numbers Are Different Now	250
Directory Versions	250
More Disconnected Operations	251
Distinction Between Status and Update	251
Branches and Tags	252
Metadata Properties	253
Conflict Resolution	253

Binary Files and Translation	253
Versioned Modules	254
Authentication	254
Converting a Repository from CVS to Subversion	254
B. Troubleshooting	255
Common Problems	255
Problems Using Subversion	255
C. WebDAV and Autoversioning	261
Basic WebDAV Concepts	261
Just Plain WebDAV	261
DeltaV Extensions	262
Subversion and DeltaV	263
Mapping Subversion to DeltaV	263
Autoversioning Support	263
The mod_dav_lock Alternative	264
Autoversioning Interoperability	265
Win32 WebFolders	265
Mac OS X	265
Unix: Nautilus 2	266
Linux davfs2	266
D. Third Party Tools	267
Clients and Plugins	267
Language Bindings	267
Repository Converters	268
Higher Level Tools	268
Repository Browsing Tools	268
E. Copyright	270