

Extracted from:

# Pragmatic Version Control

---

Using Git

This PDF file contains pages extracted from Pragmatic Version Control, published by the Pragmatic Bookshelf. For more information or to purchase a paperback or PDF copy, please visit <http://www.pragprog.com>.

**Note:** This extract contains some colored text (particularly in code listing). This is available only in online versions of the books. The printed versions are black and white. Pagination might vary between the online and printer versions; the content is otherwise identical.

Copyright © 2008 The Pragmatic Programmers, LLC.

All rights reserved.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form, or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior consent of the publisher.

# Contents

---

<b>I</b>	<b>Welcome to the Distributed World</b>	<b>10</b>
<b>1</b>	<b>Introduction</b>	<b>11</b>
<b>2</b>	<b>Version Control the Git Way</b>	<b>12</b>
2.1	The Repository . . . . .	13
2.2	What Should We Store? . . . . .	18
2.3	Working Trees . . . . .	18
2.4	Manipulating Files and Staying in Sync . . . . .	19
2.5	Tracking Projects, Directories, and Files . . . . .	20
2.6	Tracking Milestones with Tags . . . . .	21
2.7	Alternate Histories with Branches . . . . .	22
2.8	Merging . . . . .	23
2.9	Locking Options . . . . .	24
2.10	Next Steps . . . . .	26
<b>3</b>	<b>Getting started with Git</b>	<b>27</b>
3.1	Installing Git . . . . .	27
3.2	Configuring Git . . . . .	32
3.3	Creating a Repository . . . . .	33
3.4	Making Changes . . . . .	34
3.5	Starting to Work with a Project . . . . .	36
3.6	Going Beyond the Basics . . . . .	38
<b>II</b>	<b>Using Git Everyday</b>	<b>40</b>
<b>4</b>	<b>Learning Git</b>	<b>41</b>
4.1	Understanding Git's Workflow . . . . .	42
4.2	How to Read the Rest of this Book . . . . .	43

<b>5</b>	<b>Creating, Adding, and Committing: Git Basics</b>	<b>44</b>
5.1	Creating a Local Repository . . . . .	44
5.2	Adding Files . . . . .	45
5.3	Committing Changes . . . . .	49
5.4	Seeing What Has Changed . . . . .	52
5.5	Managing Files . . . . .	54
<b>6</b>	<b>Tags and Branches</b>	<b>59</b>
<b>7</b>	<b>Working with Git's History</b>	<b>60</b>
7.1	Inspecting Git's Log . . . . .	60
7.2	Specifying Revision Ranges . . . . .	62
7.3	Looking at Differences Between Versions . . . . .	64
7.4	Finding out Who's to Blame . . . . .	65
7.5	Following Content . . . . .	66
7.6	Undoing Changes . . . . .	69
7.7	Rewriting History . . . . .	73
<b>8</b>	<b>Working with Remote Repositories</b>	<b>77</b>
8.1	Network Protocols . . . . .	77
8.2	Cloning a Remote Repository . . . . .	80
8.3	Keeping Up-To-Date . . . . .	82
8.4	Handling Conflicts . . . . .	83
8.5	Pushing Changes . . . . .	85
8.6	Adding New Remote Repositories . . . . .	87
<b>9</b>	<b>Organizing Your Repository</b>	<b>90</b>
<b>10</b>	<b>Creating a Project</b>	<b>91</b>
<b>11</b>	<b>Migrating to Git</b>	<b>92</b>
11.1	Communicating with SVN . . . . .	92
11.2	Making Sure git-svn Is Available . . . . .	96
11.3	Importing a Subversion Repository . . . . .	97
11.4	Keeping Up-To-Date with a Subversion Repository . . . . .	99
11.5	Pushing Changes to SVN . . . . .	99
11.6	Importing from CVS . . . . .	101
11.7	Closing Thoughts . . . . .	102

<b>A</b>	<b>Installing, Securing, and Administering Git</b>	<b>104</b>
<b>B</b>	<b>Third-Party Tools</b>	<b>105</b>
<b>C</b>	<b>Command Summary and Recipes</b>	<b>106</b>
<b>D</b>	<b>Other Resources</b>	<b>107</b>
<b>E</b>	<b>Bibliography</b>	<b>108</b>
	<b>Index</b>	<b>109</b>

# The Pragmatic Bookshelf

---

The Pragmatic Bookshelf features books written by developers for developers. The titles continue the well-known Pragmatic Programmer style, and continue to garner awards and rave reviews. As development gets more and more difficult, the Pragmatic Programmers will be there with more titles and products to help you stay on top of your game.

## Visit Us Online

---

### Pragmatic Version Control Using Git's Home Page

<http://pragprog.com/titles/tsgit>

Source code from this book, errata, and other resources. Come give us feedback, too!

### Register for Updates

<http://pragprog.com/updates>

Be notified when updates and new books become available.

### Join the Community

<http://pragprog.com/community>

Read our weblogs, join our online discussions, participate in our mailing list, interact with our wiki, and benefit from the experience of other Pragmatic Programmers.

### New and Noteworthy

<http://pragprog.com/news>

Check out the latest pragmatic developments in the news.

## Buy the Book

---

If you liked this PDF, perhaps you'd like to have a paper copy of the book. It's available for purchase at our store: [pragprog.com/titles/tsgit](http://pragprog.com/titles/tsgit).

## Contact Us

---

Phone Orders:	1-800-699-PROG (+1 919 847 3884)
Online Orders:	<a href="http://www.pragprog.com/catalog">www.pragprog.com/catalog</a>
Customer Service:	<a href="mailto:orders@pragprog.com">orders@pragprog.com</a>
Non-English Versions:	<a href="mailto:translations@pragprog.com">translations@pragprog.com</a>
Pragmatic Teaching:	<a href="mailto:academic@pragprog.com">academic@pragprog.com</a>
Author Proposals:	<a href="mailto:proposals@pragprog.com">proposals@pragprog.com</a>