

# Getting Started with Atlas

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# Getting Started with Atlas

by O'Reilly Media

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# 1/Join the Publishing Revolution

Thank you for your interest in Atlas! Atlas is a wiki-like, git-managed authoring platform for creating books easily. Some of the features of Atlas are as follows:

## *Simple markup*

Atlas supports [AsciiDoc](#) and, for simpler projects, [Markdown](#).

## *Git backend*

If you have a book, you have a [git](#) repository and all of the power and convenience that comes with using git version control.

## *Easy book and ebook builds*

Atlas lets you build your project in three formats at any time: Mobi (for the Kindle), EPUB (for most other ebook platforms), and PDF. Atlas also gives you tools to debug your ebook formats so that you can identify and fix problems quickly.

## *An invitation system*

Add collaborators to your project at any time by simply sending an invite.

## *Flexible writing options*

You can write directly within Atlas, but if writing in a web browser is not for you, no problem. Just use git to clone your book to a local machine and write in the text editor of your choice.

## How It Works

1. Receive an invite from an O'Reilly editor or another author and create an account.
2. Write in AsciiDoc, an open source text format developed by [Stuart Rackham](#). Each time you save a file, it will be logged into a git repository, so it's always under version control.
3. When you're ready, build your book. Atlas interfaces with O'Reilly's publishing toolchain, generating PDF, EPUB, and Mobi files for you on the fly. The ebook files look just like those for sale on O'Reilly.com.

Why bother with this, you ask? We're trying to create an appealing authoring process that will get you writing as quickly as possible.

# Start Writing Today

Atlas is still in its early development stages, and you can play a role in determining future development by using the platform to write your book. If you're willing to use Atlas, we ask that you:

- Write in AsciiDoc or DocBook 4.5, which are the preferred formats for Atlas. The system also supports Markdown, but Markdown itself is sometimes not up to the task of representing complex technical content. For simpler projects, however, Markdown works well. Talk to us about what you prefer, and we'll try to make it work.
- Provide feedback. Atlas is currently in alpha testing, and we need to hear from you to take the platform to the next level. To submit feedback, simply click on the Feedback tab within Atlas and create an Issue. You will need a GitHub account to create an Issue. If you're not able or willing to provide feedback, Atlas might not be right for you at this time.
- Post the finished book to a public or private GitHub repo. At O'Reilly, we're excited by the prospect of your book being a living, breathing thing that continues to thrive after we publish it. By posting your book on GitHub, you expose it a wider audience and you create opportunities that were, before now, unthinkable in publishing. Talk to us more about how we can make this work for you.

If the above sounds good to you, then you're the perfect candidate to work in Atlas. We're eager to help you get started. Let's revolutionize publishing together!

# 2/Write How You Want

When you are using Atlas to write your book, you have the option of writing in the wiki interface or locally on your own computer. This chapter covers each of those scenarios. As you write your book, you can jump back and forth between the two writing environments. As long as you are saving in the web interface or using git to push and pull from your local machine, you'll always be in sync.



## Get Your Gravatar

You may notice that some users have personal icons in the Changes and Collaborators sections of Atlas. Those image icons are pulled in from [Gravatar](#), based on the user's email address. Set up your Gravatar to get a more personalized icon.

---

## Working in the Atlas Wiki

If you've used a wiki before, you will find the Atlas interface to be very familiar. In the following sections, you'll learn how to create and edit new files in the wiki interface.

### Invite Some Collaborators

Once you are working on a project in Atlas, you can invite additional collaborators at any time. First, create your project. Then, click on the Collaborators tab. Enter the mail address of anyone you'd like to collaborate with on your project. If you choose a permission type of Collaborator, the invited author will have full read and write access to your project, via the wiki interface and the git repository.

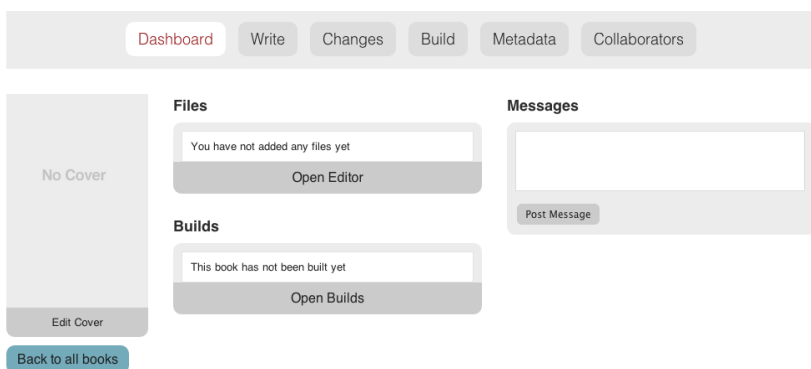
You can also remove collaborators using the same Collaborators tab.

## Creating New Files

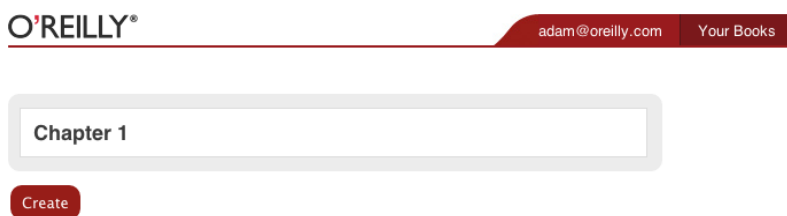
When you create your book in Atlas, it will have no files, as shown in [Figure 2-1](#).

You can create your first file by clicking on Open Editor. Atlas will recognize that your book has no files, and you will be prompted to create one. Click "Create your first file" and name the file, as shown in [Figure 2-2](#).

Once you've created the file, you're ready to start writing!



**Figure 2-1.** When you create a new book in Atlas, you start off with a blank slate



**Figure 2-2.** Create your first file

## Working with AsciiDoc Text in Atlas

When you're working in the Atlas wiki interface, you will need to write in AsciiDoc.<sup>1</sup> See [Chapter 4](#) for an introduction to AsciiDoc markup.

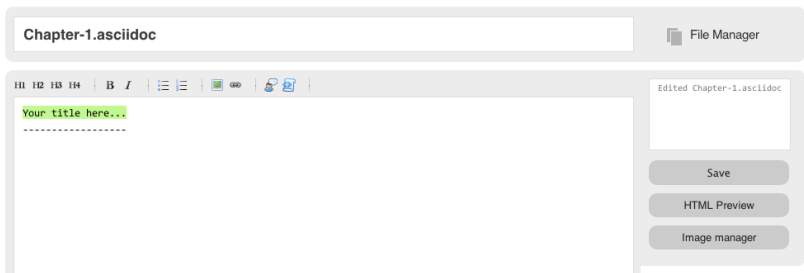
The Atlas wiki editor works just as you'd expect. Use the buttons to insert simple AsciiDoc markup. For example, [Figure 2-3](#) shows what happens when you click the H1 button.

Once you've entered some text, click Save and your changes will be committed to a git repository that is created automatically each time you start a new book. Optionally, you can enter a log message before you click Save, and it will be included with the commit to the git repository, as show in [Figure 2-4](#). Read more about making the most of your git repository in [“Working Locally”](#) (page 7) and [Chapter 6](#).

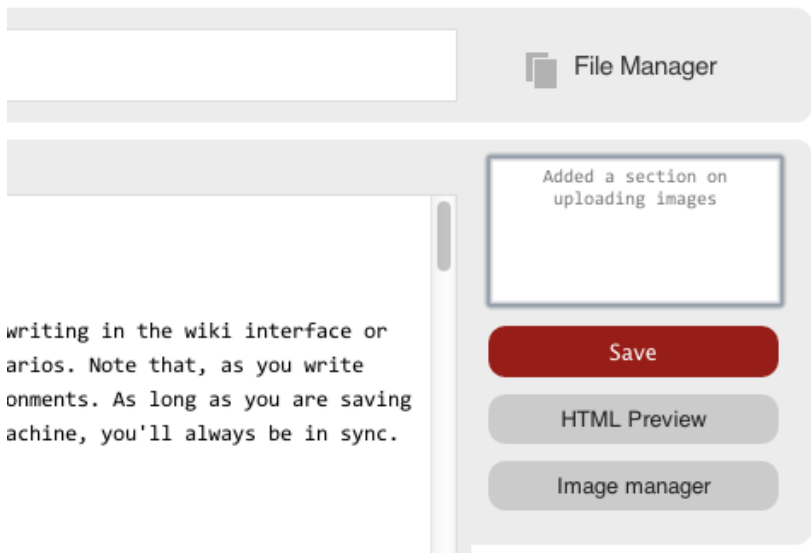
Note also that you can use the File Manager drop-down to jump to other files or to create new ones.

1. Atlas supports Markdown for less technically complex text. Ask your editor if Markdown is a good fit for your project.





**Figure 2-3.** Use the Atlas wiki interface to write in your web browser



**Figure 2-4.** It's good practice to add a meaningful log message

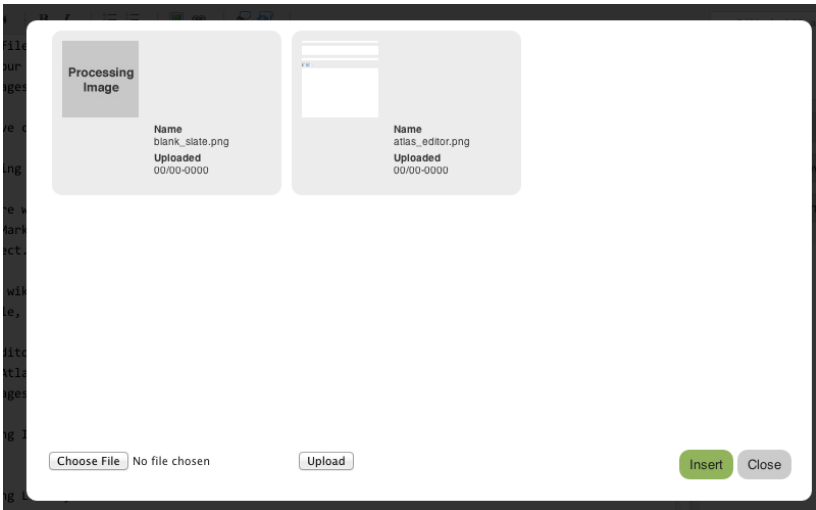
## Adding Images via the Atlas Interface

You can upload images to your book directly in the Atlas wiki interface. Click on Image manager and then select Choose File and finally Upload, as shown in [Figure 2-5](#).

Once you've uploaded your image, Atlas will generate a thumbnail preview of that image, which you can see at any time by bringing up the Image manager.



At this time, if you upload an image via git, the image will not have a thumbnail preview within the Image manager.



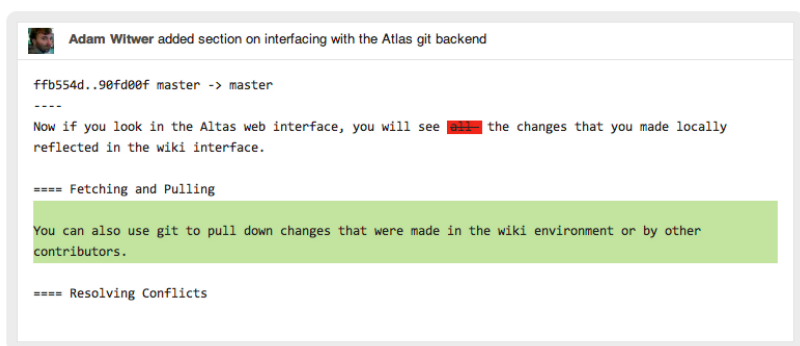
**Figure 2-5.** Upload your images within Atlas



**Figure 2-6.** You've uploaded the image; now reference it within your document

You can also use the Image manager to insert the AsciiDoc reference to that image:

1. Place the cursor where you'd like to insert the image within the text.
2. Click on Image manager.
3. Select the thumbnail preview of the image you've uploaded and click Insert (Figure 2-6).



**Figure 2-7.** An Atlas change box shows additions and deletions made to the text

Once you click insert, Atlas will add AsciiDoc markup that looks something like the following to your document:

```
image::images/insert_image_asciidoc.png[]
```

Read more about figure and image markup in “[Figures and Other Images](#)” (page 16) in [Chapter 4](#).

## Tracking Changes in Atlas

Each time you save a change in the wiki interface or use git to push a change to your repository (as described in “[Committing and Pushing](#)” (page 8)), Atlas displays that change on the Changes tab.

[Figure 2-7](#) shows a change that was saved to the repository via a `git push`. In this change notification box, Atlas displays the author who made the change along with the log message used during `git commit`. If the author were to use the Save button on the wiki interface (instead of git), as explained in “[Working with AsciiDoc Text in Atlas](#)” (page 4), the change would be captured and displayed in the same way.

## Working Locally

Atlas sits on top of a git repository, giving you the flexibility to write how and when you want. For example, suppose you have a long flight and want to write edit on the plane. No problem—just pull down your book files, make your changes locally, and then push them back up when your connected to the internet again. Or perhaps you'd rather skip the wiki interface entirely and work on your local machine exclusively. That's fine too.

## Cloning Your Book

In order to work locally, you will need to have [git](#) installed on your machine.

Dashboard

Write

Changes

Build

Metadata

**Edit Metadata**

Git URL

`https://adam%40oreilly.com@atlas-admin.oreilly.com/git/1230000000065.git`**Select a p**

You can cho  
whose publi  
approved yo  
options becc

**Figure 2-8.** Grab your git repository URL from the Metadata tab

Once you have git installed, click on the Metadata tab in the Atlas interface to retrieve your git repository URL, as shown in [Figure 2-8](#).

Now that you have the URL, you can use git to clone it to your computer. When you clone the repo, you can optionally add the name of the directory, like so:

```
$ git clone https://adam%40oreilly.com@atlas-admin.oreilly.com/git/  
1230000000065.git  
getting_started_with_atlas/  
  
Cloning into getting_started_with_atlas...  
remote: Counting objects: 338, done.  
remote: Compressing objects: 100% (337/337), done.  
remote: Total 338 (delta 136), reused 0 (delta 0)  
Receiving objects: 100% (338/338), 4.10 MiB | 534 KiB/s, done.  
Resolving deltas: 100% (136/136), done.
```

The `clone` command will download all of the files into a directory named `getting_started_with_atlas`, and that directory is now under version control with git.



All of the examples in this guide use the command line git client. If the command line is not for you, there are several GUI git clients available for Windows, OS X, and Linux.

## Committing and Pushing

Now that you've got a local checkout of your project, you can open and edit the `._asciidoc_` file. As explained in [Chapter 4](#), AsciiDoc is a text-based markup language. You can use any text editor to edit the files. [Figure 2-9](#) shows edits being made to this chapter in TextMate, a text editor for the Mac.

Now it's time to commit the changes to the git repo. You can include a log message with `-m`. The `-a` means to include all changes.

```

150
151 [NOTE]
152
153 All of the examples in this chapter use the command line git client. If the
154 command line is not for you, there are several GUI git clients available for
155 Windows, OS X, and Linux.
156
157
158 Now that you've got a local checkout of your project, you can open the
159 asciidoc file and make some edits. As explained in <asciidoc_101>,
160 AsciiDoc is a text-based markup language. You can use any text editor to edit
161 the files. <editing_in_textmate> shows edits being made to this chapter in
162 TextMate, a text editor for the Mac.
163
164 [[editing_in_textmate]]
165 .Editing an AsciiDoc file in TextMate
166 image::images/editing_in_textmate[]
167

```

**Figure 2-9.** Editing an AsciiDoc file in TextMate

```

$ git commit -a -m'added section on interfacing with the Atlas git backend'
[master 0e487ee] added section on interfacing with the Atlas git backend
3 files changed, 46 insertions(+), 6 deletions(-)
create mode 100644 images/editing_in_textmate.png

```

Finally, push your committed changes:

```

$ git push origin
Counting objects: 11, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (7/7), done.
Writing objects: 100% (7/7), 54.03 KiB, done.
Total 7 (delta 4), reused 0 (delta 0)
To https://adam%40oreilly.com@atlas-admin.oreilly.com/git/1230000000065.git
fffb554d..90fd00f  master -> master

```

Now if you look in the Atlas web interface, you will see the changes that you made locally reflected in the wiki interface.

## Fetching and Pulling

You can also use git to pull down changes that were made in the wiki environment or by other contributors. There are two ways of downloading changes. One way is to use `fetch` followed by `merge`, as in this example:

```

$ git fetch
remote: Counting objects: 5, done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 3 (delta 2), reused 0 (delta 0)
Unpacking objects: 100% (3/3), done.
From https://atlas-admin.oreilly.com/git/1230000000065
cd86112..cba41ff  master    -> origin/master

```

`fetch` downloads the changes. Now use `merge` to bring your local files up to date:

```
$ git merge origin
Updating cd86112..cba41ff
Fast-forward
 ch02.asciidoc |   3 ++-
 1 files changed, 2 insertions(+), 1 deletions(-)
```

Alternatively, you can use `pull`, which downloads the changes and merges them in with a single command:

```
$ git pull
remote: Counting objects: 8, done.
remote: Compressing objects: 100% (6/6), done.
remote: Total 6 (delta 4), reused 0 (delta 0)
Unpacking objects: 100% (6/6), done.
From https://atlas-admin.oreilly.com/git/1230000000065
 cba41ff..a972d49  master    -> origin/master
Updating cba41ff..a972d49
Fast-forward
 ch02.asciidoc |  25 ++++++
 1 files changed, 25 insertions(+), 0 deletions(-)
```

Using `push` and `pull` to interface with your Atlas repo is the just the beginning of what you can do with git. Check out [Git Reference](#) and [Chapter 6](#) to learn what else is possible.

## Resolving Conflicts

When you use `git merge` or `git pull`, git will attempt to combine all changes into one document. Sometimes, however, git will fail to combine the text and your AsciiDoc file will have a conflict. This situation may arise if, for example, two authors try to `push` changes to the same line of text. Conflict resolution is beyond the scope of this document, but the Git User's Manual has an [excellent overview](#) of git conflicts and how to resolve them.

# 3/Building and Debugging

You can use Atlas to build your book in three formats—PDF, EPUB, and Mobi—whenever you like.

## Three Major Ebook Formats

You may be wondering about the three book formats that Atlas produces. An overview of each follows:

- The fixed-layout PDF format is undoubtedly familiar to you and remains the [most popular format](#) among customers who buy direct from O'Reilly. If your book ends up being printed, we will use a slightly modified version of the online-friendly PDF that Atlas outputs.
- [EPUB](#) uses a fluid layout, which means that the text reflows to fit the container in which it is presented. EPUB is sold by most major ebook retailers, with the exception of Amazon. You can read an EPUB with [iBooks](#) on an iOS device, [Aldiko](#) on an Android device, and [Adobe Digital Editions](#) on your desktop.
- The [Mobipocket](#) format is also a fluid format and is used by Amazon's Kindle platform. You can copy the Mobi that Atlas outputs to your Kindle, or you can preview it with the [Kindle Previewer](#).

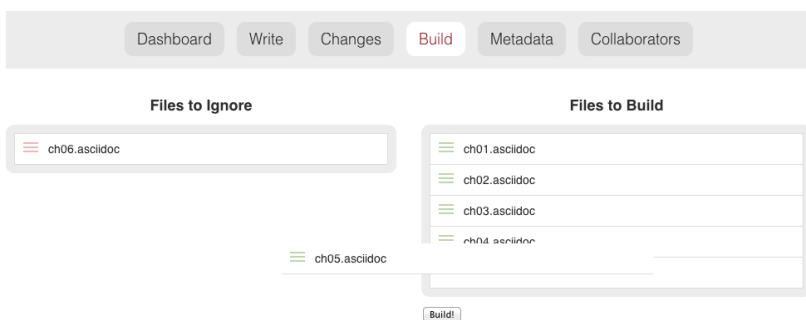
## Building Books

To kick off a build, click on the Build tab. Then, select New Build, and you will be presented with a list of the files that you've created so far. Drag or click the files that you'd like to include in the build, as shown in [Figure 3-1](#).

The builds will change to a status of pending. Wait a few minutes, and then refresh the page. Assuming the builds were successful, you can download your files right from Atlas. If you run into an error, see [“Debugging Errors” \(page 12\)](#).



Build times vary based on the length of your book, but most builds finish within a few minutes. EPUB files build the fastest, PDF files the slowest, and Mobi files somewhere in between.



**Figure 3-1.** You can drag or click on the files to move them to and from the *Files to Build* box

## Debugging Errors

Book builds will sometimes fail. The most likely cause of a failure is that your AsciiDoc isn't structured in a syntactically valid way. When you trigger a build, Atlas transforms your AsciiDoc into DocBook XML 4.5 and, using the DocBook as a source, builds the book files. If one of your builds fails, Atlas will report the error, which should help you to fix it.

For example, here is an Atlas error log for a PDF build that failed:

```
book.xml:291: element xref: validity error : IDREF attribute linkend references an unknown ID "cloning_to_github"
```

In this case, the problem is that there is a cross-reference referring to an ID that does not exist. You can fix it by adding an ID to the appropriate block, as explained in [Chapter 4](#).

We realize that build failures can be tricky to troubleshoot, so we're working on improving the error messaging. Also, we've configured Atlas to be permissive enough so that it doesn't fail on minor errors. Please let us know about your experiences with troubleshooting build failures, and how Atlas can be improved to make the experience better.



# 4/AsciiDoc 101

AsciiDoc is a text document format for writing (among other things) books, ebooks, and documentation. The main advantages of AsciiDoc are that it is easy to use and plays well with O'Reilly's publishing tools, including Atlas. It's similar to wiki markup—if you can write a Wikipedia article, then you'll have no problem with AsciiDoc. This [AsciiDoc cheat sheet](#) covers a lot of the nitty-gritty, but the following sections will give you an overview of the markup you'll use most frequently.

You can create and edit AsciiDoc in any text editor, and then add it to Atlas by either pasting it into the wiki interface or using git. If you're on Windows, you can use [Notepad++](#) or any other text editor. If you're on a Mac, you can use TextEdit, [TextMate](#) (which you can pair with an [AsciiDoc bundle](#)), [TextWrangler](#), or any of a number of choices. Or maybe you prefer old school vi or Emacs. That's okay, too. The important thing is that you use the AsciiDoc markup.

This chapter illustrates some of the most common elements used in writing technical documentation.



## Use the Source, Luke

If you're viewing this document as a PDF, EPUB, or Mobi, you're seeing the *output* from the AsciiDoc source, rather than the AsciiDoc markup itself. Since this chapter is intended as an introduction to the markup, you should view the source, available at [cdn.oreilly.com/atlas\\_docs.zip](http://cdn.oreilly.com/atlas_docs.zip).

---

## Top-Level Section

This one designates AsciiDoc level 2 (DocBook <sect1>).

## Second-Level Section (Delimited Style)

This one designates AsciiDoc level 3 (DocBook <sect2>). Also note that you can have the delimiter on both sides as in this one.

## Third-Level Section (Delimited Style)

This one designates AsciiDoc level 4 (DocBook <sect3>).

## Inline Elements

Here's some *italic*, `monospaced` (aka "constant-width" or "CW"), **bold**, **CW bold**, <sup>super</sup>, and <sub>sub</sub> text.

Plus signs can also be used for literal (CW) text, for example: `ls -al`

Standard O'Reilly font conventions are as follows:

### *Italic*

*Ital* indicates new terms, URLs, email addresses, filenames, and file extensions.

### Constant width

CW is used for program listings, as well as within paragraphs to refer to program elements such as variable or function names, databases, data types, environment variables, statements, and keywords.

### Constant width bold

**CWB** shows commands or other text that should be typed literally by the user.

### *Constant width italic*

*CWI* shows text that should be replaced with user-supplied values or by values determined by context.



Please do not use AsciiDoc's mechanisms for forcing line breaks, page breaks, or "ruler" lines, as these don't mesh with Atlas's book building tools.

---

## Cross-References

To generate a cross-reference, use this syntax:

```
<<ID>>
```

where `ID` is the anchor or BlockID of the target, which you place in double square-brackets above that block.

The Atlas build system will transform this into a standard cross-reference (or `<xref>`) for you: the rendered text will adjust automatically if you later move the target or reword its title, and it will work as a hyperlink in online versions. Any time you refer to another component of your book, please be sure to use `xref` markup, not hardcoded text.

[Table 4-1](#) shows the standard text generated from `xrefs` in PDF builds.

**Table 4-1.** *Standard Cross-Reference Formats*

Target	Generated Cross-Reference Text
chapter	Chapter 17
table	Table 4-1
figure	Figure 2-3
example	Example 3-5
sidebar	"Fooing the Bar" on page 23
section	"Inline Macros" on page 14

Here are some live examples (hover over the text in the PDF to locate the hyperlink):

- See [“Block Elements” \(page 15\)](#) for details.
- The results is shown in [Figure 4-1](#).
- Flip ahead to [Chapter 5](#) for a preview.

generated from this source:

- \* See <<BLOCKS>> for details.
- \* The results is shown in <<FIG1>>.
- \* Flip ahead to <<advanced\_asciidoc>> for a preview.



Please do not use AsciiDoc’s optional `xreflabel` and `caption` features on anchors and xrefs, as these interfere with standard generated xref formats.

# Block Elements

## Sidebars

Here’s a `<sidebar>`:

### What’s Going On, Anyway?

A general understanding of what is going on under the hood of Atlas will help you make the most of it. One of the primary appeals of AsciiDoc is that it was created to export to [DocBook XML](#). In other words, for each AsciiDoc markup syntax, there is an equivalent DocBook element. When you build your book (as described in [Chapter 3](#)), Atlas converts the AsciiDoc to DocBook and then generates

the book formats from that DocBook. This series of magical transformations is part of what makes writing in Atlas fun, but it also requires you to use the correct AsciiDoc markup for things to work right.

If you get a build error, the most likely cause is an AsciiDoc markup error. Atlas provides error message logs to help you troubleshoot and fix syntax errors. Read more about building and debugging in [Chapter 3](#).

## Admonitions (Notes and Warnings)

Here are some admonitions:



O'Reilly books traditionally make no visual distinction between the DocBook `<note>`, `<tip>`, and `<important>` elements.



### **Titled Tip**

We do support optional titles in admonitions (in most series).



### **Titled Warning**

O'Reilly Animal books traditionally make no visual distinction between the DocBook `<warning>` and `<caution>` elements.



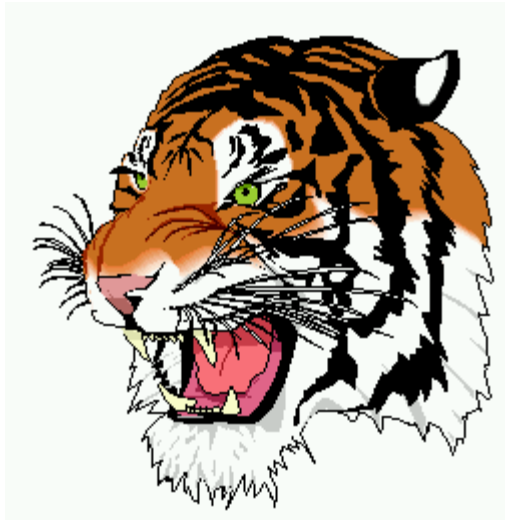
This one is a `<caution>`.

## Figures and Other Images

Somewhere nearby is [Figure 4-1](#) (a figure, titled and cross-referenced). Unlike other block elements, figures “float” by default. While AsciiDoc permits you to specify [various image-related attributes](#) for scaling/alignment/etc., generally these sorts of adjustments are not necessary. You can, however, prevent a float by adding `float="none"` like so:

```
[[FIG1]]  
.A Figure  
image::images/tiger.png[float]
```

Or you may prefer an image with no caption, like so:



**Figure 4-1.** *A Figure*

A screenshot of a web browser displaying the AsciiDoc Home Page. The browser's address bar shows the URL `http://www.methods.co.nz/asciidoc/`. The page has a blue header with the text "AsciiDoc" and "Text based document generation". On the left, there is a navigation menu with links: Home, User Guide, Installation, FAQ, asciidoc(1), a2x(1), API, Cheatsheet, Tests, ChangeLog, Support, and Page Source. The main content area is titled "AsciiDoc Home Page" and contains a "Table of Contents" with links to Introduction, Overview and Examples, eBook Publication, Blogpost, weblog client, Music Filter, Source Code Highlight Filter, Graphviz Filter, Mathematical Formulae, Editor Support, matplotlib Filter, Try AsciiDoc on the Web, External Resources and Applications, Documents written using AsciiDoc, and LaTeX Backend. At the bottom, a yellow box contains the text: "14 November 2010: AsciiDoc 8.6.3 Released. This release was intended primarily to fix regressions introduced by 8.6.2, but the incubation period was longer than expected and it now also includes a number of enhancements and a few other bug fixes."

## Lists

### Labeled (aka Variable or Term-Definition) Lists

*Term 1*

Definition/description

*Term 2*

Something else

**Bulleted (aka Itemized) Lists**

- lions
- tigers
  - sabre-toothed
  - teapotted
- bears

**Ordered (aka Numbered) Lists**

1. Preparation
2. Assembly
  - a. Measure
  - b. Combine
  - c. Bake
3. Applause

**Tables**

Atlas table styles vary slightly between series are supplied by the template stylesheets. If your material warrants something other than the default style as shown in [Table 4-2](#), please consult with your editor.

**Table 4-2.** *A Table*

P	Q	P^Q
T	T	T
T	F	F
F	T	F
F	F	F

**Code**

The [AsciiDoc documentation](#) refers to code blocks as “listing” blocks. Here’s one:

```
Hello world!

0          10          20          30          40
1234567890123456789012345678901234567890
```

Contrast the code block above with [Example 4-1](#), which is a *formal code example* (titled and cross-referenced).

## Example 4-1. An Example

Hello world!

```
0          10          20          30          40
1234567890123456789012345678901234567890
```

## Inline Formatting Within Code

In AsciiDoc, there is no built-in mechanism for inline formatting within code. If you want to use inline formatting—in particular, for standard O'Reilly font conventions such as `<userinput>` (**CW+bold**) and `<replaceable>` (*CW+italic*) or if you want to include line annotations—you can do so by using a passthrough block (see “Passthroughs” (page 23) for an explanation of passthroughs), like so:

```
hostname $ date
Sun Apr  1 12:34:56 GMT 1984
```

or this:

```
from __future__ import with_statement # This isn't required in Python 2.6
                                         Above is a comment in the code, while this is an "annotation"
with open("hello.txt") as f:
    for line in f: (note regular italic here vs. constant-width in "hello.txt" on line above)
        print line
```

## Syntax Highlighting

The Atlas book-building toolchain supports syntax highlighting via [Pygments](#). You need only add `[source]` above each code block that you want to be syntax-highlighted, and specify the language of the code. For example, the following code:

```
[source,java]
----
int radius = 40;
float x = 110;
float speed = 0.5;
int direction = 1;
----
```

will render in the EPUB, PDF, and Mobi (Kindle Fire only) as follows:

```
int radius = 40;
float x = 110;
float speed = 0.5;
int direction = 1;
```

Pygments supports a wide variety of languages that can be used in `[source]`; see the full list available on the [the Pygments website](#). Ebook readers that do not have color screens will still display the highlighting, but in more subtle shades of gray.

Please note the following caveats:

- Highlighting will not be applied to any code that has inline markup (as described in “[Inline Formatting Within Code](#)” (page 19)), even if [source] is added above the code block.
- The color scheme cannot be changed at this time.
- The PDF used for print will contain no highlighting.

## External Code Files

To include an external code file that is text-only (no markup), use the `include::` macro inside of a delimited code block, as shown here:

```
package com.marakana;

import android.app.Activity;
import android.os.Bundle;

public class HelloWorld extends Activity {
    /** Called when the activity is first created. */
    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.main);
    }
}
```

To include an external file that contains inline markup (e.g., for callouts, line annotations, or inline font formatting), skip the code block delimiters around the `include::` macro and instead place passthrough delimiters within the included file, like so:

```
int GetCustLastOrder(DatabaseHandle db, string customer_id, Order* order) {
    string customer_name;
    LOOKUP_OR_RETURN("names", customer_id, &customer_name); ❶
    order->set_customer_name(customer_name);

    string last_order_id; ❷
    LOOKUP_OR_RETURN("recent_orders", customer_id, &last_order_id); lineannotation...

    string order_data; ❸
    LOOKUP_OR_RETURN("orders", last_order_id, &order_data);
    order->set_order_data(order_data);

    return SUCCESS;
}

#define LOOKUP_OR_RETURN(table_id, row_id, data_ptr) { \
    Table table; \
    int err = OpenTable(db, table_id, &table); \
    if (err != SUCCESS) return err; \
    err = RetrieveRow(db, table, row_id, data_ptr); \
    if (err != SUCCESS) return err; \
}
```



- ❶ When using this approach to include code from an external file, you'll have to escape special XML characters such as `&` (`&amp;`), `>` (`&gt;`), and `<` (`&lt;`).
- ❷ Inline markup here: `<replaceable>`
- ❸ Inline markup here: `<userinput>`

## Code Callouts

**Code callouts** are used to mark specific lines of code with icons keyed to explanatory text outside the code block. These icon pairs function as bidirectional links in electronic PDF and downstream formats (i.e., you can click on the icon in the code to jump to the explanation, and vice versa).

The built-in AsciiDoc mechanism (shown in [Example 4-2](#)) is somewhat more limited; for one thing, icons are hyperlinked from text to code, but not vice versa. However, you can always use a passthrough block (see [“Passthroughs” \(page 23\)](#)) for full functionality, as shown in [Example 4-3](#).

If you have a need to refer to the same bit of explanatory text from more than one line of code, see [“Yet More on Code Callouts” \(page 25\)](#) (in [Chapter 5](#)).

### Example 4-2. Built-in Callout Mechanism (Unidirectional Callouts)

10/17/97	9:04	<DIR>	bin	
10/16/97	14:11	<DIR>	DOS	❶
10/16/97	14:40	<DIR>	Program Files	
10/16/97	14:46	<DIR>	TEMP	
10/17/97	9:04	<DIR>	tmp	
10/16/97	14:37	<DIR>	WINNT	
10/16/97	14:25		119 AUTOEXEC.BAT	❷
2/13/94	6:21		54,619 COMMAND.COM	
10/16/97	14:25		115 CONFIG.SYS	
11/16/97	17:17		61,865,984 pagefile.sys	
2/13/94	6:21		9,349 WINA20.386	❸

- ❶ This directory holds MS-DOS.
- ❷ System startup code for DOS.
- ❸ Some sort of Windows 3.1 hack.

### Example 4-3. Bidirectional Callouts, via Passthrough Markup

```
class C: ❶
    def method(self):
        pass
```

- ❶ The benefits of bidirectional callouts are more evident on longer listings...



If using passthroughs for callouts, please use the paired markup as shown above (not `<areaspec>`).

---

## Other Block Elements

Here's a `<quote>` attributed to Benjamin Disraeli (by Wilfred Meynell, according to Frank Muir):

Many thanks; I shall lose no time in reading it.

— Wilfred Meynell

# 5/Advanced AsciiDoc

This is another chapter, with some more esoteric/experimental things...

## Passthroughs

[Chapter 4](#) makes several references to “passthroughs.” You can use a DocBook passthrough when you’ve got an especially complex piece of markup or you’re trying to do something that AsciiDoc doesn’t support. AsciiDoc supports two types of passthroughs:

### *Inline passthroughs*

For inlines, you can indicate a passthrough at any time by like this: passthrough goes here. See [“Challenging Inlines” \(page 24\)](#) for examples of inline passthroughs.

### *Block passthroughs*

You can also pass though a block of DocBook XML. Here’s the image markup that we used in [Chapter 4](#), passed through as DocBook:

```
-----
<figure id="FIG1" float="none">
<title>A Figure</title>
<mediaobject>
  <imageobject>
    <imagedata fileref="images/tiger.png"/>
  </imageobject>
</mediaobject>
</figure>
-----
```



Using the block passthrough method described above, you could potentially pass through an entire chapter of DocBook.

---

## Underlined vs. Delimited

Section titles can be in either of two formats: “underlined” or delimited.

Note that the levels described in the [AsciiDoc User Guide](#) can be confusing: in AsciiDoc, the document (book) is considered level 0; generally a chapter will be at AsciiDoc level 1 (unless you’re dividing the book into parts), and sections within chapters start at AsciiDoc level 3 (which is equivalent to DocBook <sect1>).

# Top-Level Section Title (Underlined Style)

Narrative text here.

## Second-Level Section Title (Underlined Style)

More text here.

### Third-Level Section Title (Underlined Style)

And some more here.

## Challenging Inlines

Using inlines in AsciiDoc can be tricky:

- Delimiters may not be interpreted as intended if they don't about white-space on both sides; the fix for this is to double them up, as explained under “[Constrained and Unconstrained Quotes](#)” in the AsciiDoc User Guide. For example, compare how these render in the PDF: `+foo+ bar` vs. `foo bar`
- Attempting to nest inlines within each other may result in invalid DocBook (because the content model of one may not include the other). For example, **foo** requires the asterisk (\*) pair outside and the plus-symbol (+) pair inside. If you try the other way around, the build will likely fail with this error message:

Element emphasis is not declared in literal list of possible children

- For more precise semantics, you can always use “passthroughs” to embed DocBook markup as is, e.g. `foo`, **foo**, and **foo** are fairly common in O'Reilly books, rendered as CWI, CWB, and CWBI, respectively (constant-width with italic, bold, and bold+italic).

For generic emphasis, you can also surround a string with single, straight quotation marks (apostrophes): i.e., *this* is equivalent to *that*. As an enhancement for finer-tuned semantic distinctions downstream, the Atlas configuration file supports the following variants, via `@role` attributes:

- to indicate a filename or path, use `/path/to/file.ext` or `/path/to/file.ext`
- for a book title, use `This Book Needs No Title` or `This Book Needs No Title`

To get curly quotes you can use AsciiDoc's mechanism for 'singles' and "doubles" (or you can always use Unicode like so: "quote me").

Subscripts and superscripts work like so:  $\text{H}_2\text{O}$  and  $2^5 = 32$  (but if you're doing math, you'd probably want to italicize the variables, like so:  $x^2 + y^2 = z^2$ ).

If using footnotes, please place the macro <sup>1</sup> directly after the text, with no space between (otherwise you'll introduce extra space <sup>2</sup> before the in-text mark); footnotes at the end of a sentence belong after the period.<sup>3</sup>

# Yet More on Code Callouts

If you want to refer to the same explanation from more than one line of code, please *do not* use the built-in mechanism (Example 5-1), which does not conform to house style. Instead, use either Example 5-2 or Example 5-3.

## Example 5-1. Built-in Mechanism (Vertical Layout Bad)

10/17/97	9:04	<DIR>	bin	
10/16/97	14:11	<DIR>	DOS	❶
10/16/97	14:40	<DIR>	Program Files	
10/16/97	14:46	<DIR>	TEMP	
10/17/97	9:04	<DIR>	tmp	
10/16/97	14:37	<DIR>	WINNT	
10/16/97	14:25		119 AUTOEXEC.BAT	❷
2/13/94	6:21		54,619 COMMAND.COM	❸
10/16/97	14:25		115 CONFIG.SYS	❹
11/16/97	17:17		61,865,984 pagefile.sys	
2/13/94	6:21		9,349 WINA20.386	❺

- ❶ This directory holds MS-DOS.
- ❷ System startup code for DOS. **[Too much whitespace; confusing to readers]**
- ❸
- ❹
- ❺ Some sort of Windows 3.1 hack.

Example 5-2 uses the <coref> element to refer to the same <callout> from multiple code lines.

## Example 5-2. Alternate Approach 1: Repeat Icon in Code

10/17/97	9:04	<DIR>	bin	
10/16/97	14:11	<DIR>	DOS	❶
10/16/97	14:40	<DIR>	Program Files	
10/16/97	14:46	<DIR>	TEMP	
10/17/97	9:04	<DIR>	tmp	
10/16/97	14:37	<DIR>	WINNT	
10/16/97	14:25		119 AUTOEXEC.BAT	❷

- 1. This is a standard footnote.
- 2. This one has extraneous space before the in-text mark (although the footnote itself is fine).
- 3. If your footnote text includes [square brackets], you can escape them with a pass-through macro.

2/13/94	6:21	54,619	COMMAND.COM	❷
10/16/97	14:25	115	CONFIG.SYS	❷
11/16/97	17:17	61,865,984	pagefile.sys	
2/13/94	6:21	9,349	WINA20.386	❸

- ❶ This directory holds MS-DOS.
- ❷ System startup code for DOS.
- ❸ Some sort of Windows 3.1 hack.

**Example 5-3** uses a different mechanism for several code lines to point to the same <callout>. In this case, each one gets a uniquely numbered icon. This is done by placing multiple values in a single <callout arearefs=...> while duplicating the @linkends value in the corresponding <co> elements in code. Note also the use of <?dbfo...> markup below the <calloutlist> opener; this adjusts the alignment for side-by-side icons.

### Example 5-3. Alternate Approach 2: Unique Icons; Align Side-by-Side in Explanation

10/17/97	9:04	<DIR>	bin	
10/16/97	14:11	<DIR>	DOS	❶
10/16/97	14:40	<DIR>	Program Files	
10/16/97	14:46	<DIR>	TEMP	
10/17/97	9:04	<DIR>	tmp	
10/16/97	14:37	<DIR>	WINNT	
10/16/97	14:25	119	AUTOEXEC.BAT	❷
2/13/94	6:21	54,619	COMMAND.COM	❸
10/16/97	14:25	115	CONFIG.SYS	
11/16/97	17:17	61,865,984	pagefile.sys	
2/13/94	6:21	9,349	WINA20.386	❹

- ❶ This directory holds MS-DOS.
- ❷ System startup code for DOS.
- ❸
- ❹ Some sort of Windows 3.1 hack.

## Page Breaking

If you want to insert a hard page break into your PDF builds, you can do so with this passthrough:

```
++++
<?hard-pagebreak?>
++++
```

Please note that adding this page break processing instruction will have no effect on the EPUB and Mobi files.

## Controlling Line Breaks

Use an inline passthrough to prevent a line break:

```
pass:[<phrase role='keep-together'>Don'tBreakMe</phrase>]
```

## Everything Else

Finally, keep in mind that there may be situations where it's hard to get AsciiDoc to format something the way you want. Sometimes there's a trick to get around it; sometimes it's better to use a passthrough block to embed a bit of DocBook; and sometimes there may be a different formatting approach that will mesh better with our production systems. If you need to do something not illustrated in this guide, please check with your editor.





# 6/Using Git and GitHub with Atlas

While Atlas hides a lot of the complexity of using git, there are still times when you may want to use it, such as:

- You hate editing in a web browser and would prefer a text editor, such as TextMate, emacs, or BBEdit.
- You want to write when you're offline—during a flight, for example.
- You've got a bunch of images to upload in bulk.

If this sounds like you, then using git directly may be an attractive option. This is a quick introduction to using git with Atlas. If you want to know more about git and all the things you can do with it, check out these resources:

- [Git Cheat Sheet \(GitHub\)](#). A great reference to the key commands.
- [Git for Designers](#). A nice introduction to git for non-programmers.
- [Pro Git](#). The online version of Scott Chacon's excellent book, *Pro Git*.
- [O'Reilly Webcast: Git in One Hour](#). A nice video from Scott Chacon that introduces all the key parts of using git.

## Git Terminology and Command Reference

Here are some of the key terms you'll need to understand to use git:

### *Local repository*

A git repository that is on your local drive. You can make any changes you want to this copy without affecting other files.

### *Branch*

A named version set of files within a git repository. The default name is "master." We won't be doing much with branches, but they're a very handy tool that you can learn more in the [Basic Branching and Merging](#) chapter of the [git community book](#).

### *Remote repository*

A named link to a git repository on another machine. You can have as many remote repositories as you want. "Origin" is the default name, but you can choose any name you like when you add new "remotes" (links to other repositories on different servers).

## Push and pull

git lingo for sending the changes made in a local repository to a remote repository, or vice versa.

## Cloning

Downloading a remote git repository onto your own machine so that you can edit it locally.

## Forking

GitHub lingo for cloning a repo from someone else's GitHub account into your own so that you can modify and change without touching the original copy. Forking a repo is often the first step when you want to start working on a project.

## Commit

A commit saves all your changes under version control.



One major difference between editing in the Atlas wiki and editing locally is that in the wiki, all changes are committed for you automatically. This is *not* the case when you're editing locally: you can make and save changes, but until you commit, you cannot push changes to Atlas. Why? The reason is a reflection of git's history as a software development tools.

Git was designed to allow developers to experiment with their code by changing lots of files. Assuming everything works, the programmer can then commit the changes into the master branch of the code. If the changes don't work, he or she can simply roll back the changes to the last version that worked and start over. So a commit is an affirmative statement that the changes are acceptable.

---

Table 6-1 summarizes some commonly used commands.

**Table 6-1.** *Command quick reference*

git init	Creates a new blank repo
git commit -a -m"Your helpful commit message"	Commits changes to the repo
git status	Returns the commit status of the current repo
git add *	Adds all files to the repo
git remote add <i>remote_name</i> <i>remote_URL</i>	Adds a remote repository to which you can push or pull changes
git remote -v	Lists the remotes in your repo

<code>git push remote_name branch_name</code>	Pushes changes from the specified local branch specified to a remote repo. We'll mostly use "git push origin master"
---	--

## Frequently Asked Questions About Using Git with Atlas

### Where Do I Get Git?

You can download git from [the git-scm site](#). Just follow the instructions for your platform.

### How Do I Clone My Project from Atlas?

To pull down your project from Atlas:

1. Go to the Metadata tab and copy the Git URL (it's the first field)
2. Drop into a command line and use `git clone <your_git_url>` to pull down the repo. By default, using this command as is will pull the repo into a directory name based on the ISBN. You can override this by putting a new directory name at the end of the command.
3. You'll be prompted for a password—enter the password you use to log into Atlas

Here's a log:

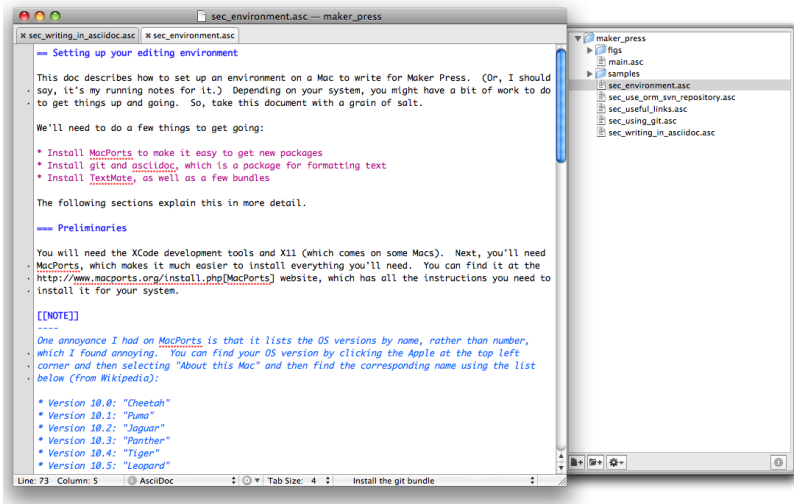
```
$ cd ~/Desktop
$ git clone https://odewahn%40oreilly.com@atlas-admin.oreilly.com/git/1230000000189.git
Cloning into 1230000000189...
Password:
remote: Counting objects: 68, done.
remote: Compressing objects: 100% (63/63), done.
remote: Total 68 (delta 16), reused 0 (delta 0)
Unpacking objects: 100% (68/68), done.
$ cd 1230000000189
```

### How Do I Write Locally Using TextMate?

You can use any text editor you want to edit Atlas projects. If you're on a Mac, here's how you'd use the popular TextMate editor,

1. Install the editor. You can download it from the [TextMate](#) site.
2. Install and configure the AsciiDoc bundle.
3. Enable command line usage.
4. Edit your files.

More details on the bundle and configuring AsciiDoc for the command line follows.



**Figure 6-1.** Using TextMate and the AsciiDoc Bundle

Once you've installed TextMate, go grab the [AsciiDoc bundle](#) to make it much easier to work with AsciiDoc. It will give you features like automatic previews, source highlighting, and so forth. Here's what you do for this:

```
mkdir -p /Library/Application\ Support/TextMate/Bundles
cd ~/Library/Application\ Support/TextMate/Bundles/"
git clone git://github.com/zuckerschwerdt/asciidoc.tmbundle.git "Ascii-
Doc.tmbundle"
osascript -e 'tell app "TextMate" to reload bundles'
```

Now the bundle is installed, your AsciiDoc markup will have all the color-coded goodness you've come to expect in a text editors.



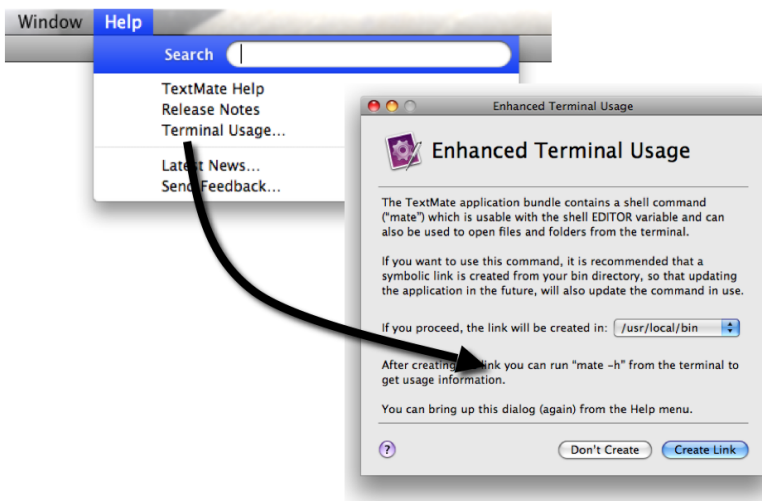
You have to give the files an extension of `.asc` or `.asciidoc` for the color coding to happen.

Change into the directory where you installed the sample repository and type the following command:

```
mate .
```

This will open the editor and display the *project drawer*, which is a navigation tree that you can use to move between files. Use the project drawer to open the file called `sec_environments.asc`, as shown in [Figure 6-1](#).

If you've worked in a wiki before, this markup should look pretty familiar. Also, note how the various AsciiDoc elements are all nicely color coded because of the AsciiDoc bundle that you installed earlier.



**Figure 6-2.** *Setting Up TextMate for the Command Line*

To run TextMate from the command line, you must configure your system so that it “knows” where TextMate is installed. The simplest way to do this is to use the “Terminal Usage” feature right in TextMate’s control bar. Just click “Help → Terminal Usage...” and then click “Create Link.” [Figure 6-2](#) shows how this works.

## I’ve Edited My Files. Now What?

Once you’ve made your edits, you use two commands to add any new files and commit your changes:

- Add any new files so that git can start tracking them. Use `git add <filename>` to add an individual file. Use `git add .` to add all files in the current directory and all subdirectories.
- Commit the changes using `git commit -a -m 'commit message'`. Try to use the commit message to leave yourself a note about what you were doing. For example, if you were just adding a big section on the `foo` method, you’d use a message like “Added section covering `foo`.”
- Push the changes back up to Atlas using `git push origin master`.

Here’s an example:

```
$ git add .
$ git commit -a -m "Made some changes while on the plane"
$ git push origin master
```

# I Am Trying to Push Some Changes to Atlas, but It Keeps Reporting That Everything Is Up to Date. What's up?

You probably forgot to either add any new files, or you forgot to commit your changes. (Or both!) You can check if you have any changes using `git status`, like this:

```
$ git status
# On branch master
# Changes not staged for commit:
#   (use "git add <file>..." to update what will be committed)
#   (use "git checkout -- <file>..." to discard changes in working directory)
#
#       modified:   git_quick_start.asciidoc
#
no changes added to commit (use "git add" and/or "git commit -a")
```

When you commit the changes, you'll get something like this:

```
$ git commit -a -m"Minor edits"
[master 955189b] Minor edits
1 files changed, 47 insertions(+), 6 deletions(-)
new-host:1230000000197 odewahn$ git status
# On branch master
# Your branch is ahead of 'origin/master' by 1 commit.
#
nothing to commit (working directory clean)
new-host:1230000000197 odewahn$
```

## Hey, My Push to Atlas Keeps Getting Rejected. What's Up with That?

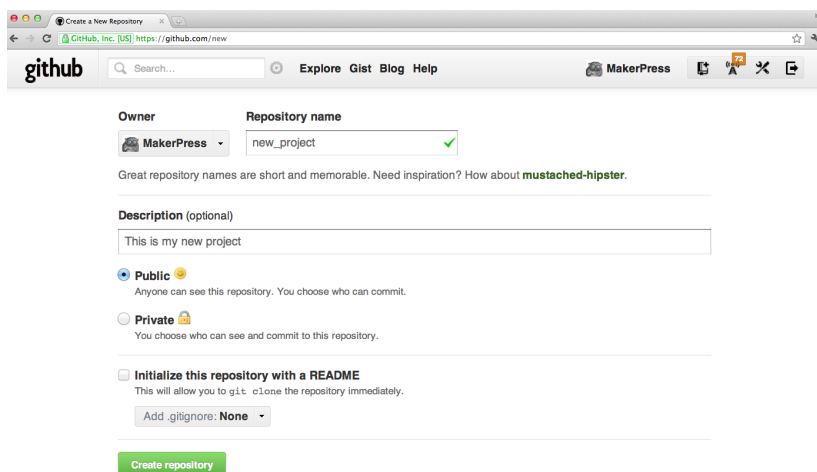
If you're getting a message that your changes are rejected, it's most likely because someone has changed the files on Atlas since you started working locally. To fix this, you'll need to commit your current changes and then use `git pull origin master` to pull in the changes from Atlas. Once you've synced the changes, you'll be able to push your work back up.

Here's the rejection notice:

```
$ git push origin master
Password:
To https://odewahn%40oreilly.com@atlas-admin.oreilly.com/git/
1230000000197.git
! [rejected]        master -> master (non-fast-forward)
error: failed to push some refs to 'https://odewahn%40oreilly.com@atlas-admin.oreilly.com/git/1230000000197.git'
To prevent you from losing history, non-fast-forward updates were rejected
Merge the remote changes (e.g. 'git pull') before pushing again. See the
'Note about fast-forwards' section of 'git push --help' for details.
```

To fix this, you need to pull in the new changes, like so:

```
$ git pull origin master
Password:
remote: Counting objects: 5, done.
```



**Figure 6-3.** Create a new repository on GitHub

```
remote: Compressing objects: 100% (3/3), done.
remote: Total 3 (delta 2), reused 0 (delta 0)
Unpacking objects: 100% (3/3), done.
From https://atlas-admin.oreilly.com/git/1230000000197
 * branch                master      -> FETCH_HEAD
Updating e26e9b6..fd7c13d
Fast-forward
 book.asciidoc |    2 --
 1 files changed, 0 insertions(+), 2 deletions(-)
```

## Putting Your Project on GitHub?

If you're totally new to GitHub, the best place to start is the [GitHub help pages](#). They'll walk you through what you need to know to set up an account, create a repo, set up your security credentials, and so on. Once you've got an account and have successfully completed the steps on [setting up git](#), it's pretty simple to move stuff back and forth between Atlas and GitHub.

To put your code on GitHub, first, create a new repository. You'll be prompted to enter a name, a description, and whether you want to make the repo public or private (available only if you have a paid account). It will look very similar to [Figure 6-3](#).

Once you create a project, you'll see a screen that lists some helpful commands for what you'll do next. Locate the "Existing Git Repo?" section and then find the line that looks like this:

```
git remote add origin git@github.com:MakerPress/new_project.git
```

It will look something like [Figure 6-4](#).

**Global setup:****Set up git**

```
git config --global user.name "Your Name"
git config --global user.email makerpressadmin@oreilly.com
```

**Next steps:**

```
mkdir new_project
cd new_project
git init
touch README
git add README
git commit -m 'first commit'
git remote add origin git@github.com:MakerPress/new_project.git
git push -u origin master
```

The new repo's  
URL appears here

**Existing Git Repo?**

```
cd existing_git_repo
git remote add origin git@github.com:MakerPress/new_project.git
git push -u origin master
```

**Importing a Subversion Repo?**

[Check out the guide](#) for step by step instructions.

**Figure 6-4.** The new repo's URL appears in the "Existing Git Repo?" section.

Once you've got the line, copy the repo's url (in our example, it's `git@github.com:MakerPress/new_project.git`) and enter the following command in the directory where your local Atlas repo is stored. (Note that the word "origin" is the only thing we're changing from the original command.):

```
$ git remote add github git@github.com:MakerPress/new_project.git
```

Once you've set up the new remote, you can push to it with this command:

```
$ git push github master
```

You can then take full advantage of all the amazing features and community available on GitHub.

Conversely, if you already have a repo on GitHub that you'd like to pull into Atlas, all you have to do is clone it down and add a new remote to an Atlas repo, like this:

```
$ git clone git@github.com:MakerPress/new_project.git
Cloning into new_project...
warning: You appear to have cloned an empty repository.
admins-MacBook-Air-2:Desktop odewahn$ cd new_project/
admins-MacBook-Air-2:new_project odewahn$ git remote add atlas https://
odewahn%40oreilly.com@atlas-admin.oreilly.com/git/1230000000197.git
admins-MacBook-Air-2:new_project odewahn$ git push atlas master
...
```

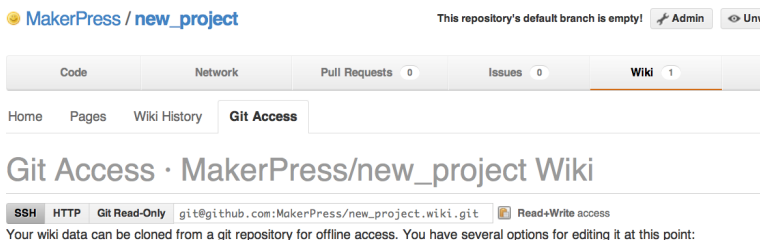


As we continue to improve Atlas, we'll add features to allow you to easily move projects back and forth from within the UI.

## Using GitHub Wikis

GitHub wikis are really cool, since they store all your data as a git repo that you can clone, just like any other. If you wanted, you could write your entire book on a GitHub wiki using either AsciiDoc or Markdown (if you don't need really complex markup) and then pull it straight into Atlas to build the project.

To clone a GitHub wiki, first find the URL for the wiki's git repo, which appears on the "Git Access" tab:



Once you have the wiki's URL, you can clone it to your local system and add a remote back to Atlas so that you can move data back and forth with ease:

```
$ git clone git@github.com:MakerPress/new_project.wiki.git
Cloning into new_project.wiki...
remote: Counting objects: 3, done.
remote: Total 3 (delta 0), reused 0 (delta 0)
Receiving objects: 100% (3/3), done.

$ cd new_project.wiki/

$ git remote add atlas https://odewahn%40oreilly.com@atlas-
admin.oreilly.com/git/1230000000197.git
$ git push atlas master
```

Note that you'd need to pull in any changes from the GitHub wiki into Atlas.