

Git Learning Lesson Three

Git Learning Lesson Three v0.1

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REVISION HISTORY

Revision No.	Description	Date
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1. 前言

因應 git 全面化推行，是故撰寫文件來簡介 git 的基本使用方式，希望能讓大家更輕鬆的從 perforce 環境切換到 git 上。本文件將簡單的介紹管理 project 使用的 manifest 文件裡的欄位。

2. 建立 MANIFEST

因為 manifest 是用來管理複數 project 的，所以在建立 manifest 前，要先確認 git server 上已經建立好需要管理的 projects。

同時，manifest 本身也是一個 git project，所以也要確認 manifest 這個 project 已經建立完成。

2.1. 建立 manifest xml 檔

2.1.1 Download manifest project

default.xml，用來定義 repo tool 需要取得 repository 的 path 及其 revision 等資訊。這個檔案非常重要，repo 唯有透過這個檔案才能知道它該做什麼事情。

以 android code base 為例，download 指令如下：

```
git clone ssh://feng.lin@hcgits:29418/platform/manifest
```

可以看到內容如下：

```
[feng.lin@swhcsvr85 manifests (default)]$ ls -al
total 76
drwxr-xr-x 3 feng.lin domain users 4096 Sep  3 10:26 .
drwxr-xr-x 7 feng.lin domain users 4096 Sep  3 11:16 ..
-rw-r--r-- 1 feng.lin domain users 50133 Sep  3 10:25 default.xml
drwxr-xr-x 2 feng.lin domain users 4096 Sep  3 14:10 .git
-rw-r--r-- 1 feng.lin domain users 9628 Sep  3 10:26 mstar.xml
```

default.xml 為 android 原生 code，mstar.xml 是 mstar 新增的部份。

這次文件的主要重點在於編寫新的 default.xml。

2.1.2 create default.xml

default.xml 檔案的格式如下：

```
<manifest>
  <remote fetch="[Server site of Repositories]"
    name="[You can define any name.]">
  <default remote="[The default server you want to use]"
    revision="[Path of the revision definition]"
    sync-j="[Number of the sync threads]">
  <project name="[Path of the repository]"
    path="[The folder name that is created to store the project source]">
</manifest>
```

以 mstar android code base 為例來觀察對應欄位：

```
<manifest>
  <remote name="aosp"
    fetch="ssh://hcgit:29418" />
  <default revision="lmr1-mstar-master"
    remote="aosp"
    sync-j="4" />
  ...
  <project path="art" name="platform/art" groups="pdk" />
  <project path="bionic" name="platform/bionic" groups="pdk" />
  ...
</manifest>
```

簡易說明：

Remote name: remote server 的 naming。

Remote fetch: remote server 的 URL。

Default revision: 預設要 download 的 branch。

Default remote: 預設要 download 的 server name。

Default sync-j: 預設 download 時的 thread 數量。

Project path: download 後的 local path。

Project name: download 的 project 在 git server 的 name。

詳細說明如下：

Remote tag 項目說明：

Attribute **`name`**：

A short name unique to this manifest file. The name specified here is used as the remote name in each project's .git/config, and is therefore automatically available to commands like ``git fetch``, ``git remote``, ``git pull`` and ``git push``.

Attribute **`fetch`**：

The Git URL prefix for all projects which use this remote. Each project's name is appended to this prefix to form the actual URL used to clone the project.

Attribute **`revision`**：

Name of a Git branch (e.g. ``master`` or ``refs/heads/master``). Remotes with their own revision will override the default revision.

Default tag 項目說明

Attribute **`remote`** :

Name of a previously defined remote element. Project elements lacking a remote attribute of their own will use this remote.

Attribute **`revision`** :

Name of a Git branch (e.g. ``master`` or ``refs/heads/master``). Project elements lacking their own revision attribute will use this revision.

Attribute **`sync-j`** :

Number of parallel jobs to use when syncing.

Project tag 項目說明 :

Attribute **`name`** :

A unique name for this project. The project's name is appended onto its remote's fetch URL to generate the actual URL to configure the Git remote with.

The URL gets formed as: `${remote_fetch}/${project_name}.git`

where `${remote_fetch}` is the remote's fetch attribute and `${project_name}` is the project's name attribute. The suffix ".git" is always appended as repo assumes the upstream is a forest of bare Git repositories. If the project has a parent element, its name will be prefixed by the parent's.

The project name must match the name Gerrit knows, if Gerrit is being used for code reviews.

Attribute **`path`** :

An optional path relative to the top directory of the repo client where the git working directory for this project should be placed. If not supplied the project name is used. If the project has a parent element, its path will be prefixed by the parent's.

2.2. 使用建立好的 manifest download source code

Repo 抓 code 時的指令為 `repo init -u $(manifest project URL) -b $(manifest project branch)`

以 mstar android 5.1 code base 為例 :

```
$> repo init -u ssh://hcgits:29418/platform/manifest -b lmr1-mstar-master
```

```
$> repo sync
```

3. 特殊使用方式

3.1. Project group

如果有某些特殊的 project 只想開放讓特定群組的人 download，可以透過 group 屬性來限制。

Ex: `<project name="platform/special_folder" path="folder_a" group="vip" />`
repo init 時，將需要額外加上 `-g vip` 來 download 才行。

3.2. Project revision

如果有 project，想要讓使用者 download 時，直接 download 到某個 branch or 某個 commit，而這個設定與 manifest 中的 default 設定不一樣的時候，可以透過 revision 指令來直接對 project 做設定。

Ex:

```
<manifest>
  <remote
    ...
  />
  <default
    revision="master"
    ...
  />
  <project name="platform/special_folder" path="folder_a" revision="test-dev" />
  ...
</manifest>
```

這樣的話 special_folder 這個 project 在 download 的時候，將會抓到 test-dev 這個 remote branch 的 code。
指定抓某個 commit 的方式亦同。

3.3.

4. REFERENCE

<https://gerrit.googlesource.com/git-repo/+master/docs/manifest-format.txt>

<https://source.android.com/source/using-repo.html>

<http://pickerwengs.blogspot.tw/2012/03/git-repo-repository.html>