

```
#!/usr/bin/env python

## repo default configuration
##
REPO_URL = 'ssh://git@stash.devlan.net:7999/gitrepo/git-repo.git'
REPO_REV = 'master'

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# increment this whenever we make important changes to this script
VERSION = (1, 21)

# increment this if the MAINTAINER_KEYS block is modified
KEYRING_VERSION = (1, 2)
MAINTAINER_KEYS = """

Repo Maintainer <repo@android.kernel.org>
-----BEGIN PGP PUBLIC KEY BLOCK-----
Version: GnuPG v1.4.2.2 (GNU/Linux)

mQGiBEj3ugERBACrLJh/ZPyVSKeClMuznFIrsQ+hpNnmJGw1a9GXKYKK8qHPhAZf
WKtrBqAVMNRLhL85oS1ekRz98u41H5si5zuv+IXJDF5MJYcb8f22wAy15lUqPWi
VCkk1l8qqLiuW0fo+ZkPY5q0grvc0HW1SmdH649uNwqCbcKb6CxaTxzh0wCgj3AP
xI1WfzLqdJjsm1Nq98L0cLcD/iNsILCuw44PRds3J75YP0pze7YF/6WFMB6QSFGu
aUX1FstTztKNXGms8i5b211B8JaLRWq/j0nZzyl1zrUJhkc0JgyZw5oNLGyWghKD
Fxp5YpHuIuMImopWEMFIRQNrvlg+YVK8t3FpdI1RY0LYqha8pPzANhEYgSfoVz0b
fbfbA/4io0rxy8ifSoga7ITyZMA+XbW8bx33WXut09N7SPKS/AK2JpasSEVLZcON
ae5hvAEGVXKxVPDjJBmIc2c0e7kOKSi30xLzBqrjs2rnjiP4o0ekhZIe4+ocwV0g
e0PL1H5avCqjhGRhp0qDRsmpzSHzJIxtoeb+GgGEX8KkUsVAhbQpUmVwbyBNYwlu
dGFpbmVyIDxyZXBVbQGFuZHJvawQua2VybmvVsLm9yZz6IYAQTEQIAIAUCSPe6AQIb
AwYLCQgHAwIEFQIIAwQWAgMBAh4BAheAAoJEBZTDV6SD1x11GEAn0x/OKQpy7qI
6G73NJviU0IUMtftAKCFMUhGb/0bZvQ8Rm3QCUpWHyEIu7kEDQRI97ogEBAA2wI6
5fs9y/rMwD6dkD/vK9v4C9m0n1IL5JCPYMBVSci+9ED4ChzYvfq7w0cj9qIvaE0
GwCt2ar7Q56me5J+byhSb32Rqsw/r3Vo5cZMH80N4cjesGuSX0GyEWTe4HYoxnHv
gF4EKI2Lk7xfTuCxMt1yn52sUpkfkSsCpUhFvdmbAiJE+jCkQZr1Z8u2KphV790u+
P1N5IXY/XW01q48Qf4MWCY1JFrB07xujLkMPDNDnm58L5byDrP/eHysKexpbakL
xCmYyFT6DV1SWLb1pd2hie0sL3YeJdtuBMYMS2rI7Yxb8kGuqkz+911qhwJtei94
5MaretDy/d/JH/pRYkRF7L+ke7dpzrP+aJmcz9P1e6gq4NjsWejaALVASBii0qNf
QmtqSVzF1wkR5avZkFHuYvj6V/t1Rr0ZTxkSk18KFMJRBZrdHFCWbc5qrVxUB6e
N5pja0NFIUCigLBV1c6I2DwiuboMnh18VtJJh+nwWeez/RueN4ig59gRTtkcc0PR
35tX2DR8+xCCFVW/NcJ4PSePYzCuuLvp1vEDHnj41R52Fz51hgddT4rBsp0nL+5I
socSOIIezw8T9vVzMY4ArCKFAVu2IVyBcahTfBS8q5EM63mONU6UVJEozfG1jiMw
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ouWxX1faR+vU3b+Y2/DGjtXQMzG0qpetaTHC/AxxHpgt/dCkWI61jYDnxgPLwG0a
0asm94BjZc6vZwf1opFZUKsj0AAxRxNzyjUJKe4UZVuMTk6zo27Nt3LMnc0F047v
Fc0jRyquvgNOS818irvHuf12waDx8gszKxQTTtFxU5/ePB2jZmhP6oXSe4K/LG5T
+WBRPDrHiGPhCzJRzm9BP01TnGCAj3o9W90STZa65RK7IaYpC8TB35JTBEBrrNCp
```

w61zd74LnNEp5eM1KDnXzUAgAH0yzCQeM17t33QCdYx2hRs2wtTQSjGfAiNmj/WW  
V15Jn+2jCDnRLenKHwVRFsBX2e0BiRwt/i9Y8fjorLCXVj4z+7yW6DawdLkJorEo  
p3v5ILwfC7hvX4jHSn0gZ65L9s8EqdVr1ckN9243yta7rNgwfcqb60ILMFF1BRk/  
0V7wCL+68UwwiQDvyMOQuqkysKLSDClB7BFcyA7j6KG+5hpsREstFX2wK1yKeraz  
5xGrFy8tfAaeBMIQ17gvFSp/suc9DY00ICK2BISzq+F+ZiAKsjMY0BNdH/h0zobQ  
HTHs37+/QLMomGEGKZMWi0dShU2J5mNRQu3Hhx13hHDVbt5CeJBb26aQcQrFz69W  
zE3GNvmJosh6leayjtI9P2A6iEKEGBECAkFAkj3uiACGwwACgkQF1MNXpIPXGwp  
TACbBS+Up3RpFYVfd63c1cDdlru13pQAn3NQy/SN858MkxN+zym86UBg0ad2  
=CMiZ

-----END PGP PUBLIC KEY BLOCK-----

Conley Owens <cco3@android.com>

-----BEGIN PGP PUBLIC KEY BLOCK-----

Version: GnuPG v1.4.11 (GNU/Linux)

mQENBFHRvc8BCADFg45Xx/y6QDC+T7Y/gGc7vx0ww7qf0wIK1AZ9xG3qKunMxo+S  
hPCnzE13cq+6I1Ww/ndop/HB3N3toPXRCoN8Vs4/Hc7by+SnaLFnacrm+tV5/0gT  
V37Lzt8lhay1K1+YfpFwHYYpIEBLFV9knyfRXS/428W2qhdzYfvB15/AasRmwmor  
py4NIzSs8UD/SPr1ihqNCdZM76+MQuN5HMYXW/ALZXUFG0pwluHFA7hrfPG74i8C  
zMiP7qvMWi1/r/jtzHioH1dRKgbod+LZsrDJ8mBaqsZaDmNjMhss9g76XvfMyLra  
9DI9/iFuBpGzeqBv0hw0GQspLrrEoyTeR6n1ABEBAAG0H0NvbmxeSBPd2VucyA8  
Y2NvM0BhbmRyb21kLmNvbT6JATgEEwECACIFAlHRvc8CGwMGCwkIBwMCBhUIAgkK  
CwQwAgMBAh4BAheAAoJEGe35EhpKzgsP6AIAJKJmNtn417hkYHKHFS03egb6RjQ  
zEIP3MFTcu8HFX1kF1ZFbrp7xqurLaE53kEkKuAAvjJDAgI8mcZHP1JyplubqjQA  
xvv84gK+0GP3Xk+QK1ZjUQSbjOpjEiSzpRhWcHci3dg0UH4b1JfByHw25h1gHowd  
a/2PrNKZVcJ92YienaxxGjcXEUcd0uYEG2+rwl1QigFcnMDhr9B71Mfa1RHjFKE  
fmdoypqLrr161YBc59P88Rw2/WUpTQjgNubSqa3A2+CKdaRyaRw+2fdF4TdR0h8W  
zbg+lbaPtJHSv+3mJc7fq26MiJDRJa5ZztpMn8su20gbLgi2ShB0aHAYDDi5AQ0E  
UdG9zwEIAMoOBq+QLNozAhx0015GL3StTstGRgPRXINFmViTsirqGCWB\_BUFX1UE  
OytC0mYcrDUQev/8ToVoyqw+iGSwDkcSXkrEUCKFtHV/GECWtk1keyHgR10YKI1R  
mquSXoubWGqPeG1PAI74XWaRx8UrL8uCXUtM8Q5J7mDjKR5NpxaXrw1A0bKsf2E  
Gp9tu1kKauuToZhWHMRMqYSOGikQJwSFYKT1KdNc0XLQF6+bfoJ6sjVYdwmNQL  
IxN8QVhoTDedcqC1SWB17VDEFDFa7MmqXZz2qtM3X1R/MUMHqPtegQzBGNhRdnI2  
V45+1Nnx/uuCxDbel4RbHzujnxDiq70AEQEAAyKBHwQYAQIACQUCUdG9zwIbDAAK  
CRBnt+RIaSs4LNVeB/0Y2pZ8I7gAAcEM0Xw8drr4omg2fUok1J33oz1A/RxeA/1J  
I3KnyCDTpXuIeBKGKdL8uMATC9Z8DnBBajR1ftNDVZS3Hz4G09G9QpMojvJkFJV  
By+01Flw/X+eeN8NpqSuLV4W+AjE08at/VvgKr1AFvBRdZ7GkpI1o6DgPe7ZqX+1  
dzQZt3e13W0rVBb/bUgx9iSLoeWP3aq/k+/GRGOR+S6F6BBS10SQ2EF2+dIywb1x  
JuinEP+AwLAUZ1Bsx9ISCoAgpk2VeHXPL3FGhroEmoMvBz00kTFGyoet7PR/BfKv  
+H/g3HsL2L0B9uoIm8/5p2TTU5ttYCXMHhQZ81AY  
=AUp4

-----END PGP PUBLIC KEY BLOCK-----

"""

```
GIT = 'git'                                # our git command
MIN_GIT_VERSION = (1, 7, 2)                  # minimum supported git version
repodir = '.repo'                            # name of repo's private directory
S_repo = 'repo'                             # special repo repository
S_manifests = 'manifests'                   # special manifest repository
REPO_MAIN = S_repo + '/main.py'             # main script
MIN_PYTHON_VERSION = (2, 6)                  # minimum supported python version
```

```
import errno
import optparse
import os
import re
import stat
import subprocess
```

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import sys

if sys.version_info[0] == 3:
    import urllib.request
    import urllib.error
else:
    import imp
    import urllib2
    urllib = imp.new_module('urllib')
    urllib.request = urllib2
    urllib.error = urllib2

def _print(*objects, **kwargs):
    sep = kwargs.get('sep', ' ')
    end = kwargs.get('end', '\n')
    out = kwargs.get('file', sys.stdout)
    out.write(sep.join(objects) + end)

# Python version check
ver = sys.version_info
if ver[0] == 3:
    _print('warning: Python 3 support is currently experimental. YMMV.\n'
          'Please use Python 2.6 - 2.7 instead.',
          file=sys.stderr)
if (ver[0], ver[1]) < MIN_PYTHON_VERSION:
    _print('error: Python version %s unsupported.\n'
          'Please use Python 2.6 - 2.7 instead.'
          % sys.version.split(' ')[0], file=sys.stderr)
    sys.exit(1)

home_dot_repo = os.path.expanduser('~/repoconfig')
gpg_dir = os.path.join(home_dot_repo, 'gnupg')

extra_args = []
init_optparse = optparse.OptionParser(usage="repo init -u url [options]")

# Logging
group = init_optparse.add_option_group('Logging options')
group.add_option('-q', '--quiet',
                 dest="quiet", action="store_true", default=False,
                 help="be quiet")

# Manifest
group = init_optparse.add_option_group('Manifest options')
group.add_option('-u', '--manifest-url',
                 dest='manifest_url',
                 help='manifest repository location', metavar='URL')
group.add_option('-b', '--manifest-branch',
                 dest='manifest_branch',
                 help='manifest branch or revision', metavar='REVISION')
group.add_option('-m', '--manifest-name',
                 dest='manifest_name',
                 help='initial manifest file', metavar='NAME.xml')
group.add_option('--mirror',
                 dest='mirror', action='store_true',
                 help='create a replica of the remote repositories '
                      'rather than a client working directory')

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group.add_option('--reference',
                dest='reference',
                help='location of mirror directory', metavar='DIR')
group.add_option('--depth', type='int', default=None,
                dest='depth',
                help='create a shallow clone with given depth; see git clone')
group.add_option('--archive',
                dest='archive', action='store_true',
                help='checkout an archive instead of a git repository for '
                     'each project. See git archive.')
group.add_option('-g', '--groups',
                dest='groups', default='default',
                help='restrict manifest projects to ones with specified '
                     'group(s) [default|all|G1,G2,G3|G4,-G5,-G6]', metavar='GROUP')
group.add_option('-p', '--platform',
                dest='platform', default="auto",
                help='restrict manifest projects to ones with a specified '
                     'platform group [auto|all|none|linux|darwin|...]', metavar='PLATFORM')

# Tool
group = init_optparse.add_option_group('repo Version options')
group.add_option('--repo-url',
                dest='repo_url',
                help='repo repository location', metavar='URL')
group.add_option('--repo-branch',
                dest='repo_branch',
                help='repo branch or revision', metavar='REVISION')
group.add_option('--no-repo-verify',
                dest='no_repo_verify', action='store_true',
                help='do not verify repo source code')

# Other
group = init_optparse.add_option_group('Other options')
group.add_option('--config-name',
                dest='config_name', action="store_true", default=False,
                help='Always prompt for name/e-mail')

class CloneFailure(Exception):
    """Indicate the remote clone of repo itself failed.
    """

def __Init(args):
    """Installs repo by cloning it over the network.
    """
    opt, args = init_optparse.parse_args(args)
    if args:
        init_optparse.print_usage()
        sys.exit(1)

    url = opt.repo_url
    if not url:
        url = REPO_URL
    extra_args.append('--repo-url=%s' % url)

    branch = opt.repo_branch

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if not branch:
    branch = REPO_REV
    extra_args.append('--repo-branch=%s' % branch)

if branch.startswith('refs/heads/'):
    branch = branch[len('refs/heads/'):]

if branch.startswith('refs/'):
    _print("fatal: invalid branch name '%s'" % branch, file=sys.stderr)
    raise CloneFailure()

try:
    os.mkdir(repodir)
except OSError as e:
    if e.errno != errno.EEXIST:
        _print('fatal: cannot make %s directory: %s'
              % (repodir, e.strerror), file=sys.stderr)
    # Don't raise CloneFailure; that would delete the
    # name. Instead exit immediately.
    #
    sys.exit(1)

_CheckGitVersion()
try:
    if NeedSetupGnuPG():
        can_verify = SetupGnuPG(opt.quiet)
    else:
        can_verify = True

    dst = os.path.abspath(os.path.join(repodir, S_repo))
    _Clone(url, dst, opt.quiet)

    if can_verify and not opt.no_repo_verify:
        rev = _Verify(dst, branch, opt.quiet)
    else:
        rev = 'refs/remotes/origin/%s^0' % branch

    _Checkout(dst, branch, rev, opt.quiet)
except CloneFailure:
    if opt.quiet:
        _print('fatal: repo init failed; run without --quiet to see why',
              file=sys.stderr)
    raise

def ParseGitVersion(ver_str):
    if not ver_str.startswith('git version '):
        return None

    num_ver_str = ver_str[len('git version '):].strip().split('-')[0]
    to_tuple = []
    for num_str in num_ver_str.split('.'):
        if num_str.isdigit():
            to_tuple.append(int(num_str))
        else:
            to_tuple.append(0)
    return tuple(to_tuple)

def _CheckGitVersion():

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cmd = [GIT, '--version']
try:
    proc = subprocess.Popen(cmd, stdout=subprocess.PIPE)
except OSError as e:
    _print(file=sys.stderr)
    _print("fatal: '%s' is not available" % GIT, file=sys.stderr)
    _print('fatal: %s' % e, file=sys.stderr)
    _print(file=sys.stderr)
    _print('Please make sure %s is installed and in your path.' % GIT,
          file=sys.stderr)
    raise CloneFailure()

ver_str = proc.stdout.read().strip()
proc.stdout.close()
proc.wait()

ver_act = ParseGitVersion(ver_str)
if ver_act is None:
    _print('error: "%s" unsupported' % ver_str, file=sys.stderr)
    raise CloneFailure()

if ver_act < MIN_GIT_VERSION:
    need = '.'.join(map(str, MIN_GIT_VERSION))
    _print('fatal: git %s or later required' % need, file=sys.stderr)
    raise CloneFailure()

def NeedSetupGnuPG():
    if not os.path.isdir(home_dot_repo):
        return True

    kv = os.path.join(home_dot_repo, 'keyring-version')
    if not os.path.exists(kv):
        return True

    kv = open(kv).read()
    if not kv:
        return True

    kv = tuple(map(int, kv.split('.')))
    if kv < KEYRING_VERSION:
        return True
    return False

def SetupGnuPG(quiet):
    try:
        os.mkdir(home_dot_repo)
    except OSError as e:
        if e.errno != errno.EEXIST:
            _print('fatal: cannot make %s directory: %s'
                  % (home_dot_repo, e.strerror), file=sys.stderr)
            sys.exit(1)

    try:
        os.mkdir(gpg_dir, stat.S_IRWXU)
    except OSError as e:
        if e.errno != errno.EEXIST:
            _print('fatal: cannot make %s directory: %s' % (gpg_dir, e.strerror),

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        file=sys.stderr)
    sys.exit(1)

env = os.environ.copy()
env['GNUPGHOME'] = gpg_dir.encode()

cmd = ['gpg', '--import']
try:
    proc = subprocess.Popen(cmd,
                           env = env,
                           stdin = subprocess.PIPE)
except OSError as e:
    if not quiet:
        _print('warning: gpg (GnuPG) is not available.', file=sys.stderr)
        _print('warning: Installing it is strongly encouraged.', file=sys.stderr)
        _print(file=sys.stderr)
    return False

proc.stdin.write(MAINTAINER_KEYS)
proc.stdin.close()

if proc.wait() != 0:
    _print('fatal: registering repo maintainer keys failed', file=sys.stderr)
    sys.exit(1)
    _print()

fd = open(os.path.join(home_dot_repo, 'keyring-version'), 'w')
fd.write('.'.join(map(str, KEYRING_VERSION)) + '\n')
fd.close()
return True

def _SetConfig(local, name, value):
    """Set a git configuration option to the specified value.
    """
    cmd = [GIT, 'config', name, value]
    if subprocess.Popen(cmd, cwd = local).wait() != 0:
        raise CloneFailure()

def _InitHttp():
    handlers = []

    mgr = urllib.request.HTTPPasswordMgrWithDefaultRealm()
    try:
        import netrc
        n = netrc.netrc()
        for host in n.hosts:
            p = n.hosts[host]
            mgr.add_password(p[1], 'http://%' % host, p[0], p[2])
            mgr.add_password(p[1], 'https://%' % host, p[0], p[2])
    except:
        pass
    handlers.append(urllib.request.HTTPBasicAuthHandler(mgr))
    handlers.append(urllib.request.HTTPDigestAuthHandler(mgr))

    if 'http_proxy' in os.environ:
        url = os.environ['http_proxy']
        handlers.append(urllib.request.ProxyHandler({'http': url, 'https': url}))
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if 'REPO_CURL_VERBOSE' in os.environ:
    handlers.append(urllib.request.HTTPHandler(debuglevel=1))
    handlers.append(urllib.request.HTTPSHandler(debuglevel=1))
urllib.request.install_opener(urllib.request.build_opener(*handlers))

def _Fetch(url, local, src, quiet):
    if not quiet:
        _print('Get %s' % url, file=sys.stderr)

    cmd = [GIT, 'fetch']
    if quiet:
        cmd.append('--quiet')
        err = subprocess.PIPE
    else:
        err = None
    cmd.append(src)
    cmd.append('+refs/heads/*:refs/remotes/origin/*')
    cmd.append('refs/tags/*:refs/tags/*')

    proc = subprocess.Popen(cmd, cwd = local, stderr = err)
    if err:
        proc.stderr.read()
        proc.stderr.close()
    if proc.wait() != 0:
        raise CloneFailure()

def _DownloadBundle(url, local, quiet):
    if not url.endswith('/'):
        url += '/'
    url += 'clone.bundle'

    proc = subprocess.Popen(
        [GIT, 'config', '--get-regexp', 'url.*.insteadof'],
        cwd = local,
        stdout = subprocess.PIPE)
    for line in proc.stdout:
        m = re.compile(r'^url\.(.*)\insteadof (.*)$').match(line)
        if m:
            new_url = m.group(1)
            old_url = m.group(2)
            if url.startswith(old_url):
                url = new_url + url[len(old_url):]
                break
    proc.stdout.close()
    proc.wait()

    if not url.startswith('http:') and not url.startswith('https:'):
        return False

    dest = open(os.path.join(local, '.git', 'clone.bundle'), 'w+b')
    try:
        try:
            r = urllib.request.urlopen(url)
        except urllib.error.HTTPError as e:
            if e.code in [403, 404]:
                return False
            _print('fatal: Cannot get %s' % url, file=sys.stderr)
            _print('fatal: HTTP error %s' % e.code, file=sys.stderr)
            raise CloneFailure()
    
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except urllib.error.URLError as e:
    _print('fatal: Cannot get %s' % url, file=sys.stderr)
    _print('fatal: error %s' % e.reason, file=sys.stderr)
    raise CloneFailure()
try:
    if not quiet:
        _print('Get %s' % url, file=sys.stderr)
    while True:
        buf = r.read(8192)
        if buf == '':
            return True
        dest.write(buf)
    finally:
        r.close()
finally:
    dest.close()

def _ImportBundle(local):
    path = os.path.join(local, '.git', 'clone.bundle')
    try:
        _Fetch(local, local, path, True)
    finally:
        os.remove(path)

def _Clone(url, local, quiet):
    """Clones a git repository to a new subdirectory of repodir
    """
    try:
        os.mkdir(local)
    except OSError as e:
        _print('fatal: cannot make %s directory: %s' % (local, e.strerror),
              file=sys.stderr)
        raise CloneFailure()

    cmd = [GIT, 'init', '--quiet']
    try:
        proc = subprocess.Popen(cmd, cwd = local)
    except OSError as e:
        _print(file=sys.stderr)
        _print("fatal: '%s' is not available" % GIT, file=sys.stderr)
        _print('fatal: %s' % e, file=sys.stderr)
        _print(file=sys.stderr)
        _print('Please make sure %s is installed and in your path.' % GIT,
              file=sys.stderr)
        raise CloneFailure()
    if proc.wait() != 0:
        _print('fatal: could not create %s' % local, file=sys.stderr)
        raise CloneFailure()

    _InitHttp()
    _SetConfig(local, 'remote.origin.url', url)
    _SetConfig(local, 'remote.origin.fetch',
              '+refs/heads/*:refs/remotes/origin/*')
    if _DownloadBundle(url, local, quiet):
        _ImportBundle(local)
    else:
        _Fetch(url, local, 'origin', quiet)

```

```

def _Verify(cwd, branch, quiet):
    """Verify the branch has been signed by a tag.
    """
    cmd = [GIT, 'describe', 'origin/%s' % branch]
    proc = subprocess.Popen(cmd,
                           stdout=subprocess.PIPE,
                           stderr=subprocess.PIPE,
                           cwd = cwd)
    cur = proc.stdout.read().strip()
    proc.stdout.close()

    proc.stderr.read()
    proc.stderr.close()

    if proc.wait() != 0 or not cur:
        _print(file=sys.stderr)
        _print("fatal: branch '%s' has not been signed" % branch, file=sys.stderr)
        raise CloneFailure()

    m = re.compile(r'^(.*)-[0-9]{1,}-g[0-9a-f]{1,}$').match(cur)
    if m:
        cur = m.group(1)
        if not quiet:
            _print(file=sys.stderr)
            _print("info: Ignoring branch '%s'; using tagged release '%s'" %
                  (branch, cur), file=sys.stderr)
            _print(file=sys.stderr)

    env = os.environ.copy()
    env['GNUPGHOME'] = gpg_dir.encode()

    cmd = [GIT, 'tag', '-v', cur]
    proc = subprocess.Popen(cmd,
                           stdout = subprocess.PIPE,
                           stderr = subprocess.PIPE,
                           cwd = cwd,
                           env = env)
    out = proc.stdout.read()
    proc.stdout.close()

    err = proc.stderr.read()
    proc.stderr.close()

    if proc.wait() != 0:
        _print(file=sys.stderr)
        _print(out, file=sys.stderr)
        _print(err, file=sys.stderr)
        _print(file=sys.stderr)
        raise CloneFailure()
    return '%s^0' % cur

def _Checkout(cwd, branch, rev, quiet):
    """Checkout an upstream branch into the repository and track it.
    """
    cmd = [GIT, 'update-ref', 'refs/heads/default', rev]
    if subprocess.Popen(cmd, cwd = cwd).wait() != 0:
        raise CloneFailure()

```

```

_SetConfig(cwd, 'branch.default.remote', 'origin')
_SetConfig(cwd, 'branch.default.merge', 'refs/heads/%s' % branch)

cmd = [GIT, 'symbolic-ref', 'HEAD', 'refs/heads/default']
if subprocess.Popen(cmd, cwd = cwd).wait() != 0:
    raise CloneFailure()

cmd = [GIT, 'read-tree', '--reset', '-u']
if not quiet:
    cmd.append('-v')
cmd.append('HEAD')
if subprocess.Popen(cmd, cwd = cwd).wait() != 0:
    raise CloneFailure()

def _FindRepo():
    """Look for a repo installation, starting at the current directory.
    """
    curdir = os.getcwd()
    repo = None

    olddir = None
    while curdir != '/' \
        and curdir != olddir \
        and not repo:
        repo = os.path.join(curdir, repodir, REPO_MAIN)
        if not os.path.isfile(repo):
            repo = None
            olddir = curdir
            curdir = os.path.dirname(curdir)
    return (repo, os.path.join(curdir, repodir))

class _Options:
    help = False

def _ParseArguments(args):
    cmd = None
    opt = _Options()
    arg = []

    for i in range(len(args)):
        a = args[i]
        if a == '-h' or a == '--help':
            opt.help = True

        elif not a.startswith('-'):
            cmd = a
            arg = args[i + 1:]
            break
    return cmd, opt, arg

def _Usage():
    _print(
"""usage: repo COMMAND [ARGS]
repo is not yet installed.  Use "repo init" to install it here.

```

The most commonly used repo commands are:

```
init      Install repo in the current working directory
help      Display detailed help on a command

For access to the full online help, install repo ("repo init").
"""", file=sys.stderr)
    sys.exit(1)

def _Help(args):
    if args:
        if args[0] == 'init':
            init_optparse.print_help()
            sys.exit(0)
        else:
            _print("error: '%s' is not a bootstrap command.\n"
                  '          For access to online help, install repo ("repo init").'
                  % args[0], file=sys.stderr)
    else:
        _Usage()
    sys.exit(1)

def _NotInstalled():
    _print('error: repo is not installed.  Use "repo init" to install it here.',
          file=sys.stderr)
    sys.exit(1)

def _NoCommands(cmd):
    _print("""error: command '%s' requires repo to be installed first.
          Use "repo init" to install it here.""" % cmd, file=sys.stderr)
    sys.exit(1)

def _RunSelf(wrapper_path):
    my_dir = os.path.dirname(wrapper_path)
    my_main = os.path.join(my_dir, 'main.py')
    my_git = os.path.join(my_dir, '.git')

    if os.path.isfile(my_main) and os.path.isdir(my_git):
        for name in ['git_config.py',
                     'project.py',
                     'subcmds']:
            if not os.path.exists(os.path.join(my_dir, name)):
                return None, None
        return my_main, my_git
    return None, None

def _SetDefaultsTo(gitdir):
    global REPO_URL
    global REPO_REV

    REPO_URL = gitdir
    proc = subprocess.Popen([GIT,
                           '--git-dir=%s' % gitdir,
```

```

        'symbolic-ref',
        'HEAD'],
        stdout = subprocess.PIPE,
        stderr = subprocess.PIPE)
REPO_REV = proc.stdout.read().strip()
proc.stdout.close()

proc.stderr.read()
proc.stderr.close()

if proc.wait() != 0:
    _print('fatal: %s has no current branch' % gitdir, file=sys.stderr)
    sys.exit(1)

def main(orig_args):
    repo_main, rel_repo_dir = _FindRepo()
    cmd, opt, args = _ParseArguments(orig_args)

    wrapper_path = os.path.abspath(__file__)
    my_main, my_git = _RunSelf(wrapper_path)

    if not repo_main:
        if opt.help:
            _Usage()
        if cmd == 'help':
            _Help(args)
        if not cmd:
            _NotInstalled()
        if cmd == 'init':
            if my_git:
                _SetDefaultsTo(my_git)
            try:
                _Init(args)
            except CloneFailure:
                for root, dirs, files in os.walk(repodir, topdown=False):
                    for name in files:
                        os.remove(os.path.join(root, name))
                    for name in dirs:
                        os.rmdir(os.path.join(root, name))
                os.rmdir(repodir)
                sys.exit(1)
            repo_main, rel_repo_dir = _FindRepo()
    else:
        _NoCommands(cmd)

    if my_main:
        repo_main = my_main

    ver_str = '.'.join(map(str, VERSION))
    me = [sys.executable, repo_main,
          '--repo-dir=%s' % rel_repo_dir,
          '--wrapper-version=%s' % ver_str,
          '--wrapper-path=%s' % wrapper_path,
          '--']
    me.extend(orig_args)
    me.extend(extra_args)
    try:
        os.execv(sys.executable, me)

```

```
except OSError as e:  
    _print("fatal: unable to start %s" % repo_main, file=sys.stderr)  
    _print("fatal: %s" % e, file=sys.stderr)  
    sys.exit(148)  
  
if __name__ == '__main__':  
    main(sys.argv[1:])
```