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# cobbler 自动化安装

linux cobbler

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## cobbler 介绍

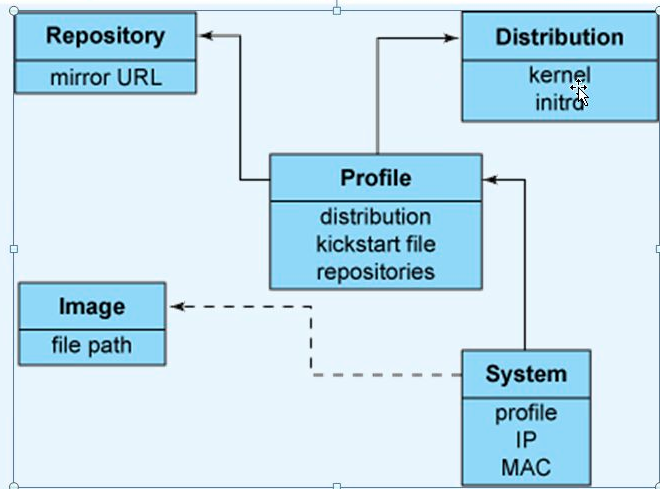
在 /var/www/cobbler 目录下

ks\_mirror 放所有镜像

var/lib/cobbler

kickstaart文件放这里

/etc/cobbler/



Bonding.html”>http://cobbler.github.io/manuals/2.6.0/4/1/1-\_Bonding.html

## Cobbler自动化部署最佳实践

运维自动化在生产环境中占据着举足轻重的地位，尤其是面对几百台，几千台甚至几万台的服务器时，仅仅是安装操作系统，如果不通过自动化来完成，根本是不可想象的。

面对生产环境中不同服务器的需求，该如何实现批量部署多版本的操作系统呢？Cobbler便可以的满足这一实际需求，实现多版本操作系统批量部署。

### Cobbler简介

Cobbler是一个快速网络安装linux的服务，而且在经过调整也可以支持网络安装windows。该工具使用python开发，小巧轻便（才15k行python代码），使用简单的命令即可完成PXE网络安装环境的配置，同时还可以管理DHCP、DNS、TFTP、RSYNC以及yum仓库、构造系统ISO镜像。

Cobbler支持命令行管理，web界面管理，还提供了API接口，可以方便二次开发使用。

Cobbler客户端Koan支持虚拟机安装和操作系统重新安装，使重装系统更便捷。

Cobbler各个组件之间关系

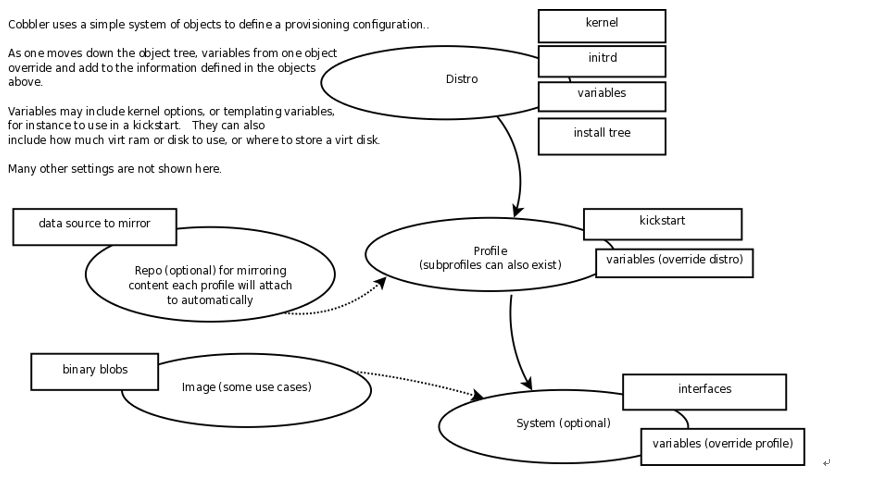


图1-1cobbler各主要组件关系图

distro->profile-system（可选）

distro 发行版

面对不同的操作系统

面对同一个操作系统不同的版本

profile

核心特性是通过kickstart来部署

system

主要目的配置网络接口

### Cobbler功能

使用 Cobbler，您无需进行人工干预即可安装机器。Cobbler 设置一个 PXE 引导环境（它还可使用 yaboot 支持 PowerPC），并控制与安装相关的所有方面，比如网络引导服务（DHCP 和 TFTP）与存储库镜像。当希望安装一台新机器时，Cobbler 可以：

使用一个以前定义的模板来配置 DHCP 服务（如果启用了管理 DHCP）

将一个存储库（yum 或 rsync）建立镜像或解压缩一个媒介，以注册一个新操作系统

在 DHCP 配置文件中为需要安装的机器创建一个条目，并使用您指定的参数（IP 和 MAC 地址）

在 TFTFP 服务目录下创建适当的 PXE 文件

重新启动 DHCP 服务以反映更改

重新启动机器以开始安装（如果电源管理已启用）

Cobbler 支持众多的发行版：Red Hat、Fedora、CentOS、Debian、Ubuntu 和 SuSE。当添加一个操作系统（通常通过使用 ISO 文件）时，Cobbler 知道如何解压缩合适的文件并调整网络服务，以正确引导机器。

Cobbler 可使用 kickstart 模板。基于 Red Hat 或 Fedora 的系统使用 kickstart 文件来自动化安装流程。通过使用模板，您就会拥有基本的 kickstart 模板，然后定义如何针对一种配置文件或机器配置而替换其中的变量。例如，一个模板可能包含两个变量 /var/folders/mq/4lvpwvdj5y353n3h1fv3lv3m0000gn/T/com.microsoft.Word/WebArchiveCopyPasteTempFiles/p1506machine\_name。在 Cobbler 配置中，一个配置文件指定 domain=mydomain.com，并且每台使用该配置文件的机器在machine\_name 变量中指定其名称。该配置文件中的所有机器都使用相同的 kickstart 安装且针对 domain=mydomain.com 进行配置，但每台机器拥有其自己的机器名称。您仍然可以使用 kickstart 模板在不同的域中安装其他机器并使用不同的机器名称。

为了协助管理系统，Cobbler 可通过 fence scripts 连接到各种电源管理环境。

Cobbler 支持 apc\_snmp、bladecenter、bullpap、drac、ether\_wake、ilo、integrity、ipmilan、ipmitool、lpar、rsa、virsh 和 wti。要重新安装一台机器，可运行 reboot system foo命令，而且 Cobbler 会使用必要的凭据和信息来为您运行恰当的 fence scripts（比如机器插槽数）。

除了这些特性，还可使用一个配置管理系统 (CMS)。您有两种选择：该工具内的一个内部系统，或者集成一个现有的外部 CMS，比如 Chef 或 Puppet。借助内部系统，您可以指定文件模板，这些模板会依据配置参数进行处理（与 kickstart 模板的处理方式一样），然后复制到您指定的位置。如果必须自动将配置文件部署到特定机器，那么此功能很有用。

使用 koan 客户端，Cobbler 可从客户端配置虚拟机并重新安装系统。我不会讨论配置管理和koan 特性，因为它们不属于本文的介绍范畴。但是，它们是值得研究的有用特性

### 基础环境准备

$ wget -O /etc/yum.repos.d/epel.repo <http://mirrors.aliyun.com/repo/epel-7.repo>

提示：

虚拟机网卡采用NAT模式，因为我们会搭建DHCP服务器，在同一局域网多个DHCP服务会有冲突，并且导致实践失败。

$ yum **install** cobbler cobbler-web pykickstart httpd tftp dhcp xinetd

cobbler #cobbler程序包

cobbler-web #cobbler的web服务包

pykickstart #cobbler检查kickstart语法错误

httpd #Apache web服务

tftp #tftp服务

dhcp #dhcp服务

/etc/cobbler # 配置文件目录

/etc/cobbler/settings # cobbler主配置文件

/etc/cobbler/dhcp.template # DHCP服务的配置模板

/etc/cobbler/tftpd.template # tftp服务的配置模板

/etc/cobbler/rsync.template # rsync服务的配置模板

/etc/cobbler/iso # iso模板配置文件目录

/etc/cobbler/pxe # pxe模板文件目录

/etc/cobbler/power # 电源的配置文件目录

/etc/cobbler/users.conf # Web服务授权配置文件

/etc/cobbler/users.digest # web访问的用户名密码配置文件

/etc/cobbler/dnsmasq.template # DNS服务的配置模板

/etc/cobbler/modules.conf # Cobbler模块配置文件

/var/lib/cobbler # Cobbler数据目录

/var/lib/cobbler/config # 配置文件

/var/lib/cobbler/kickstarts # 默认存放kickstart文件

/var/lib/cobbler/loaders # 存放的各种引导程序

/var/www/cobbler # 系统安装镜像目录

/var/www/cobbler/ks\_mirror # 导入的系统镜像列表

/var/www/cobbler/images # 导入的系统镜像启动文件

/var/www/cobbler/repo\_mirror # yum源存储目录

/var/log/cobbler # 日志目录

/var/log/cobbler/install.log # 客户端系统安装日志

/var/log/cobbler/cobbler.log # cobbler日志

### 检测Cobbler

cobbler的运行依赖于dhcp、tftp、rsync及dns服务，其中dhcp可由dhcpd（isc）提供，也可由dnsmasq提供；tftp可由tftp-server程序包提供，也可由cobbler功能提供，rsync有rsync程序包提供，dns可由bind提供，也可由dnsmasq提供

cobbler可自行管理这些服务中的部分甚至是全部，但需要配置/etc/cobbler/settings文件中的“manange\_dhcp”、“manager\_tftpd”、“manager\_rsync”、“manager\_dns”分别来进行定义，另外，由于各种服务都有着不同的实现方式，如若需要进行自定义，需要通过修改/etc/cobbler/modules.conf配置文件中各服务的模块参数的值来实现。

$ systemctl **start** httpd

$ systemctl **start** cobblerd

$ cobbler **check** #检查存在的问题,逐一解决

The **following** **are** potential configuration items that you may want **to** fix:

1 : The 'server' **field** **in** /etc/cobbler/**settings** must be **set** **to** something other **than** localhost, **or** kickstarting features will **not** **work**. This should be a resolvable hostname **or** IP **for** the boot **server** **as** reachable **by** all machines that will **use** it.

2 : **For** PXE **to** be functional, the 'next\_server' **field** **in** /etc/cobbler/**settings** must be **set** **to** something other **than** 127.0.0.1, **and** should **match** the IP **of** the boot **server** **on** the PXE network.

3 : **change** 'disable' **to** 'no' **in** /etc/xinetd.**d**/tftp

4 : **some** network boot-loaders **are** **missing** **from** /**var**/lib/cobbler/loaders, you may run 'cobbler get-loaders' **to** download them, **or**, **if** you **only** want **to** handle x86/x86\_64 netbooting, you may ensure that you have installed a \*recent\* **version** **of** the syslinux **package** installed **and** can **ignore** this message entirely. Files **in** this **directory**, should you want **to** support all architectures, should **include** pxelinux.0, menu.c32, elilo.efi, **and** yaboot. The 'cobbler get-loaders' command **is** the easiest way **to** resolve these requirements.

5 : **enable** **and** **start** rsyncd.service **with** systemctl

6 : debmirror **package** **is** **not** installed, it will be **required** **to** manage debian deployments **and** repositories

7 : The **default** **password** used **by** the **sample** templates **for** newly installed machines (default\_password\_crypted **in** /etc/cobbler/**settings**) **is** still **set** **to** 'cobbler' **and** should be **changed**, try: "openssl passwd -1 -salt 'random-phrase-here' 'your-password-here'" **to** generate **new** one

8 : fencing tools were **not** **found**, **and** **are** **required** **to** **use** the (optional) **power** **management** features. **install** cman **or** fence-agents **to** **use** them

Restart cobblerd **and** **then** run 'cobbler sync' **to** **apply** changes.

如上各问题的解决方法如下所示：

1、修改/etc/cobbler/settings文件中的server参数的值为提供cobbler服务的主机相应的IP地址或主机名，如server: 10.0.0.101；

$ sed -i 's/server: 127.0.0.1/server: 192.168.56.11/' /etc/cobbler/settings

2、修改/etc/cobbler/settings文件中的next\_server参数的值为提供PXE服务的主机相应的IP地址，如next\_server: 10.0.0.101；

$ sed -i 's/next\_server: 127.0.0.1/next\_server: 192.168.56.11/' /etc/cobbler/settings

3、修改/etc/xinetd.d/tftp文件中的disable参数修改为 disable = no

4、执行 cobbler get-loaders 命令即可；否则，需要安装syslinux程序包，而后复制/usr/share/syslinux/{pxelinux.0,memu.c32}等文件至/var/lib/cobbler/loaders/目录中；

5、执行 systemctl enable rsyncd命令即可；

6、如果有强迫症可以选择 yum –y install debmirror 然后根据错误进行解决,一般错误如下。

注释/etc/dedmirror.conf文件中的 @dists=”sid”; @arches=”i386”;

7、

$ openssl passwd -1 -salt 'cobbler' 'cobbler'

$1$cobbler$M6SE55xZodWc9.vAKLJs6.

$ **grep** "default\_password\_crypted" /etc/cobbler/settings

#替换/etc/cobbler/setting内的default\_password\_crypted

default\_password\_crypted: "$1$cobbler$M6SE55xZodWc9.vAKLJs6."

8、yum –y install cman fence-agents

最后重启Cobbler：systemctl restart cobblerd

1.6 配置DHCP

$ sed -i 's#manage\_dhcp: 0#manage\_dhcp: 1#g' /etc/cobbler/settings

$ vim /etc/cobbler/dhcp.template

subnet 192.168.56.0 netmask 255.255.255.0 {

option routers 192.168.56.2;

option domain-name-servers 192.168.56.2;

option subnet-mask 255.255.255.0;

range dynamic-bootp 192.168.56.100 192.168.56.254;

default-lease-time 21600;

max-lease-time 43200;

next-server $next\_server;

### 同步Cobbler

$ systemctl restart xinetd

$ systemctl restart cobblerd

$ cobbler sync

### 管理Cobbler

cobbler变得可用的第一步为定义distro，其可以通过为其指定外部的安装引导内核及ramdisk文件的方式实现。

如果已经有完成的安装树（如os的安装镜像）则推荐使用improt之间导入的方式进行。

$ mount /dev/cdrom /mnt/ #挂在ISO光盘至服务器

mount: /dev/sr0 is write-**protected**, mounting read-only

$ cobbler import --path=/mnt/ --name=CentOS-7-x86\_64 --arch=x86\_64

# --path 镜像路径

# --name 为安装源定义一个名字

# --arch 指定安装源是32位、64位、ia64, 目前支持的选项有: x86│x86\_64│ia64

# 安装源的唯一标示就是根据name参数来定义，本例导入成功后，安装源的唯一标示就是：CentOS-7.1-distro-x86\_64。

# 镜像存放目录，cobbler会将镜像中的所有安装文件拷贝到本地一份，放在/var/www/cobbler/ks\_mirror下的CentOS-7.1-x86\_64-x86\_64目录下。因此/var/www/cobbler目录必须具有足够容纳安装文件的空间。

$ cobbler distro **list**

CentOS-7-x86\_64

$ cobbler profile **list**

CentOS-7-x86\_64

如果有kickstart文件，也可以使用–kickstart=/path/to/kickstart\_file进行导入，因此import会自动为导入的distro生成一个profile

### 管理profile

cobbler使用profile来为特定的需求类别提供锁需要安装的配置，即在distro的基础上通过提供kiskstart文件来生成一个特定的系统安装配置。distro的profile可以出现在pxe的引导菜单中作为安装的选择之一

Cobbler-CentOS-7.1-x86\_64.cfg配置文件我会上传至至附件

默认是有kickstart文件的，所以edit，如果没有kickstart文件可以add

$ ccobbler profile edit --name=CenOS-7-x86\_64 --kickstart=/var/lib/cobbler/kickstarts/CentOS-7-x86\_64.cfg

指定ks路径CentOS7系统网卡名变成eno…这种，为了运维标准化，我们需要修改为我们常用的eth0，使用下面的参数。但要注意是CentOS7才需要下面的步骤，CentOS6不需要。

$ cobbler **profile** **edit** --name=CentOS-7-x86\_64 --kopts='net.ifnames=0 biosdevname=0'

新部署机器安装yum源，并同步。建议使用内网yum源，在这里使用阿里云yum源

$ cobbler repo add --name=base --mirror=http://mirrors.aliyun.com/centos/7/os/x86\_64/Packages/ --arch=x86\_64 --breed=yum #添加yum源

$ cobbler repo add --name=openstack-mitaka --mirror=http://mirrors.aliyun.com/centos/7.2.1511/cloud/x86\_64/openstack-mitaka/ --arch=x86\_64 --breed=yum

$ cobbler profile edit --name=CentOS-7-x84\_64 --repos="openstack-mitaka"

$ cobbler reposync #同步yum源

$ cobbler sync #每次修改profile都需要同步

接下来，对新机子开机，选择需要安装的系统便可以进行自动化安装了。

### 定制化安装

由于kickstart指定某台服务器使用某个ks文件比较复杂，所以引用Cobbler就很简单。通过物理MAC地址来区分。

system主要目的配置网络接口，通过system来固定机器的IP、掩码、网关、DNS、主机名、等等实现基础环境标准化

根据机器的MAC地址，自动绑定IP，网关，dns等

$ cobbler system add --name=linux-node1.com --mac=00:0C:29:6E:41:CB --profile=Centos7.1-profile-x86\_64 \

--ip-address=192.168.56.11 --subnet=255.255.255.0 --gateway=192.168.56.2 --interface=eth0 \

--**static**=1 --hostname=linux-node1.com --name-servers="114.114.114.114 8.8.8.8"

$ cobbler system add --name=linux-node2.com --mac=00:50:56:31:6C:DF --profile=CentOS-7-x86\_64 --ip-address=192.168.56.12 --subnet=255.255.255.0 --gateway=192.168.56.2 --interface=eth0 --**static**=1 --hostname=linux-node1.com --name-servers="192.168.56.2" --kickstart=/var/lib/cobbler/kickstarts/CentOS-7-x86\_64.cfg

$ cobbler sync

[root@linux-node1 ~]# cobbler system list

linux-node2.com

linux-node1.com

有时候需要给个人打广告,可以通过这种方式

/etc/cobbler/pxe/pxedefault.template #自定义装机页面

新版cobbler的web界面使用的是https，登录<https://10.0.0.7/cobbler_web>

cobbler\_web支持多种认证方式，如authn\_configfil、authn\_ldap或authn\_pam等，默认为authn\_denyall,即拒绝所有用户登陆。

下面说明三种能认证用户登录cobbler\_web的方式

1.使用authn\_pam模块认证cobbler\_web用户

首先修改modules中的[authentication]段中的module参数的值为authn\_pam

接着创建系统用户，并为用户设定密码

而后将设定的系统用户添加至cobbler\_web的admin组中，修改/etc/cobbler/users.conf 文件，将设定的用户添加为admin参数的值即可

2.使用authn\_configfile模块认证cobbler\_web用户

首先修改modules中的[authentication]段中的module参数的值为authn\_configfile

添加第一用户时，需要为htdigest命令使用“-c” etc/cobbler/users.digest，后续添加其他用户则不能再使用，同步cobbler重启httpd以及cobbler

3.使用cobbler默认的web账号密码认证

user：cobbler

pass：cobbler

### 对某一台机子进行重装

在需要重装的系统上执行

yum install koan -y

koan --replace-self --server=192.168.56.11 --profile=CenOS-7-x86\_64

%23%20cobbler%20%u81EA%u52A8%u5316%u5B89%u88C5%0A@%28linux%29%5Bcobbler%5D%0A%0A%5Btoc%5D%0A%0A%23%23%20cobbler%20%u4ECB%u7ECD%0A%0A%u5728%20%20/var/www/cobbler%20%u76EE%u5F55%u4E0B%0A%0Aks\_mirror%20%u653E%u6240%u6709%u955C%u50CF%0A%0A%0Avar/lib/cobbler%0A%0Akickstaart%u6587%u4EF6%u653E%u8FD9%u91CC%0A%0A/etc/cobbler/%0A%0A%0A%21%5BAlt%20text%5D%28./1464418465621.png%29%0A%0A%0A%0Ahttp%3A//cobbler.github.io/manuals/2.6.0/4/1/1\_-\_Bonding.html%0A%0A%0A%0A%0A%23%23%20Cobbler%u81EA%u52A8%u5316%u90E8%u7F72%u6700%u4F73%u5B9E%u8DF5%0A%u8FD0%u7EF4%u81EA%u52A8%u5316%u5728%u751F%u4EA7%u73AF%u5883%u4E2D%u5360%u636E%u7740%u4E3E%u8DB3%u8F7B%u91CD%u7684%u5730%u4F4D%uFF0C%u5C24%u5176%u662F%u9762%u5BF9%u51E0%u767E%u53F0%uFF0C%u51E0%u5343%u53F0%u751A%u81F3%u51E0%u4E07%u53F0%u7684%u670D%u52A1%u5668%u65F6%uFF0C%u4EC5%u4EC5%u662F%u5B89%u88C5%u64CD%u4F5C%u7CFB%u7EDF%uFF0C%u5982%u679C%u4E0D%u901A%u8FC7%u81EA%u52A8%u5316%u6765%u5B8C%u6210%uFF0C%u6839%u672C%u662F%u4E0D%u53EF%u60F3%u8C61%u7684%u3002%0A%u9762%u5BF9%u751F%u4EA7%u73AF%u5883%u4E2D%u4E0D%u540C%u670D%u52A1%u5668%u7684%u9700%u6C42%uFF0C%u8BE5%u5982%u4F55%u5B9E%u73B0%u6279%u91CF%u90E8%u7F72%u591A%u7248%u672C%u7684%u64CD%u4F5C%u7CFB%u7EDF%u5462%uFF1FCobbler%u4FBF%u53EF%u4EE5%u7684%u6EE1%u8DB3%u8FD9%u4E00%u5B9E%u9645%u9700%u6C42%uFF0C%u5B9E%u73B0%u591A%u7248%u672C%u64CD%u4F5C%u7CFB%u7EDF%u6279%u91CF%u90E8%u7F72%u3002%0A%0A%23%23%23%20Cobbler%u7B80%u4ECB%0ACobbler%u662F%u4E00%u4E2A%u5FEB%u901F%u7F51%u7EDC%u5B89%u88C5linux%u7684%u670D%u52A1%uFF0C%u800C%u4E14%u5728%u7ECF%u8FC7%u8C03%u6574%u4E5F%u53EF%u4EE5%u652F%u6301%u7F51%u7EDC%u5B89%u88C5windows%u3002%u8BE5%u5DE5%u5177%u4F7F%u7528python%u5F00%u53D1%uFF0C%u5C0F%u5DE7%u8F7B%u4FBF%uFF08%u624D15k%u884Cpython%u4EE3%u7801%uFF09%uFF0C%u4F7F%u7528%u7B80%u5355%u7684%u547D%u4EE4%u5373%u53EF%u5B8C%u6210PXE%u7F51%u7EDC%u5B89%u88C5%u73AF%u5883%u7684%u914D%u7F6E%uFF0C%u540C%u65F6%u8FD8%u53EF%u4EE5%u7BA1%u7406DHCP%u3001DNS%u3001TFTP%u3001RSYNC%u4EE5%u53CAyum%u4ED3%u5E93%u3001%u6784%u9020%u7CFB%u7EDFISO%u955C%u50CF%u3002%0A%20%20Cobbler%u652F%u6301%u547D%u4EE4%u884C%u7BA1%u7406%uFF0Cweb%u754C%u9762%u7BA1%u7406%uFF0C%u8FD8%u63D0%u4F9B%u4E86API%u63A5%u53E3%uFF0C%u53EF%u4EE5%u65B9%u4FBF%u4E8C%u6B21%u5F00%u53D1%u4F7F%u7528%u3002%0A%20%20Cobbler%u5BA2%u6237%u7AEFKoan%u652F%u6301%u865A%u62DF%u673A%u5B89%u88C5%u548C%u64CD%u4F5C%u7CFB%u7EDF%u91CD%u65B0%u5B89%u88C5%uFF0C%u4F7F%u91CD%u88C5%u7CFB%u7EDF%u66F4%u4FBF%u6377%u3002%0ACobbler%u5404%u4E2A%u7EC4%u4EF6%u4E4B%u95F4%u5173%u7CFB%0A%20%21%5BAlt%20text%5D%28./1464616303999.png%29%0A%0A%u56FE1-1cobbler%u5404%u4E3B%u8981%u7EC4%u4EF6%u5173%u7CFB%u56FE%0Adistro-%3Eprofile-system%uFF08%u53EF%u9009%uFF09%0Adistro%20%u53D1%u884C%u7248%0A%u9762%u5BF9%u4E0D%u540C%u7684%u64CD%u4F5C%u7CFB%u7EDF%0A%u9762%u5BF9%u540C%u4E00%u4E2A%u64CD%u4F5C%u7CFB%u7EDF%u4E0D%u540C%u7684%u7248%u672C%0Aprofile%0A%u6838%u5FC3%u7279%u6027%u662F%u901A%u8FC7kickstart%u6765%u90E8%u7F72%0Asystem%0A%u4E3B%u8981%u76EE%u7684%u914D%u7F6E%u7F51%u7EDC%u63A5%u53E3%0A%0A%23%23%23%20Cobbler%u529F%u80FD%0A%u4F7F%u7528%20Cobbler%uFF0C%u60A8%u65E0%u9700%u8FDB%u884C%u4EBA%u5DE5%u5E72%u9884%u5373%u53EF%u5B89%u88C5%u673A%u5668%u3002Cobbler%20%u8BBE%u7F6E%u4E00%u4E2A%20PXE%20%u5F15%u5BFC%u73AF%u5883%uFF08%u5B83%u8FD8%u53EF%u4F7F%u7528%20yaboot%20%u652F%u6301%20PowerPC%uFF09%uFF0C%u5E76%u63A7%u5236%u4E0E%u5B89%u88C5%u76F8%u5173%u7684%u6240%u6709%u65B9%u9762%uFF0C%u6BD4%u5982%u7F51%u7EDC%u5F15%u5BFC%u670D%u52A1%uFF08DHCP%20%u548C%20TFTP%uFF09%u4E0E%u5B58%u50A8%u5E93%u955C%u50CF%u3002%u5F53%u5E0C%u671B%u5B89%u88C5%u4E00%u53F0%u65B0%u673A%u5668%u65F6%uFF0CCobbler%20%u53EF%u4EE5%uFF1A%0A%u4F7F%u7528%u4E00%u4E2A%u4EE5%u524D%u5B9A%u4E49%u7684%u6A21%u677F%u6765%u914D%u7F6E%20DHCP%20%u670D%u52A1%uFF08%u5982%u679C%u542F%u7528%u4E86%u7BA1%u7406%20DHCP%uFF09%0A%u5C06%u4E00%u4E2A%u5B58%u50A8%u5E93%uFF08yum%20%u6216%20rsync%uFF09%u5EFA%u7ACB%u955C%u50CF%u6216%u89E3%u538B%u7F29%u4E00%u4E2A%u5A92%u4ECB%uFF0C%u4EE5%u6CE8%u518C%u4E00%u4E2A%u65B0%u64CD%u4F5C%u7CFB%u7EDF%0A%u5728%20DHCP%20%u914D%u7F6E%u6587%u4EF6%u4E2D%u4E3A%u9700%u8981%u5B89%u88C5%u7684%u673A%u5668%u521B%u5EFA%u4E00%u4E2A%u6761%u76EE%uFF0C%u5E76%u4F7F%u7528%u60A8%u6307%u5B9A%u7684%u53C2%u6570%uFF08IP%20%u548C%20MAC%20%u5730%u5740%uFF09%0A%u5728%20TFTFP%20%u670D%u52A1%u76EE%u5F55%u4E0B%u521B%u5EFA%u9002%u5F53%u7684%20PXE%20%u6587%u4EF6%0A%u91CD%u65B0%u542F%u52A8%20DHCP%20%u670D%u52A1%u4EE5%u53CD%u6620%u66F4%u6539%0A%u91CD%u65B0%u542F%u52A8%u673A%u5668%u4EE5%u5F00%u59CB%u5B89%u88C5%uFF08%u5982%u679C%u7535%u6E90%u7BA1%u7406%u5DF2%u542F%u7528%uFF09%0A%20%20%20Cobbler%20%u652F%u6301%u4F17%u591A%u7684%u53D1%u884C%u7248%uFF1ARed%20Hat%u3001Fedora%u3001CentOS%u3001Debian%u3001Ubuntu%20%u548C%20SuSE%u3002%u5F53%u6DFB%u52A0%u4E00%u4E2A%u64CD%u4F5C%u7CFB%u7EDF%uFF08%u901A%u5E38%u901A%u8FC7%u4F7F%u7528%20ISO%20%u6587%u4EF6%uFF09%u65F6%uFF0CCobbler%20%u77E5%u9053%u5982%u4F55%u89E3%u538B%u7F29%u5408%u9002%u7684%u6587%u4EF6%u5E76%u8C03%u6574%u7F51%u7EDC%u670D%u52A1%uFF0C%u4EE5%u6B63%u786E%u5F15%u5BFC%u673A%u5668%u300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20be%20changed%2C%20try%3A%20%22openssl%20passwd%20-1%20-salt%20%27random-phrase-here%27%20%27your-password-here%27%22%20to%20generate%20new%20one%0A8%20%3A%20fencing%20tools%20were%20not%20found%2C%20and%20are%20required%20to%20use%20the%20%28optional%29%20power%20management%20features.%20install%20cman%20or%20fence-agents%20to%20use%20them%0A%0ARestart%20cobblerd%20and%20then%20run%20%27cobbler%20sync%27%20to%20apply%20changes.%0A%60%60%60%0A%0A%u5982%u4E0A%u5404%u95EE%u9898%u7684%u89E3%u51B3%u65B9%u6CD5%u5982%u4E0B%u6240%u793A%uFF1A%0A1%u3001%u4FEE%u6539/etc/cobbler/settings%u6587%u4EF6%u4E2D%u7684server%u53C2%u6570%u7684%u503C%u4E3A%u63D0%u4F9Bcobbler%u670D%u52A1%u7684%u4E3B%u673A%u76F8%u5E94%u7684IP%u5730%u5740%u6216%u4E3B%u673A%u540D%uFF0C%u5982server%3A%2010.0.0.101%uFF1B%0A%0A%09%24%20sed%20-i%20%27s/server%3A%20127.0.0.1/server%3A%20192.168.56.11/%27%20/etc/cobbler/settings%0A%0A2%u3001%u4FEE%u6539/etc/cobbler/settings%u6587%u4EF6%u4E2D%u7684next\_server%u53C2%u6570%u7684%u503C%u4E3A%u63D0%u4F9BPXE%u670D%u52A1%u7684%u4E3B%u673A%u76F8%u5E94%u7684IP%u5730%u5740%uFF0C%u5982next\_server%3A%2010.0.0.101%uFF1B%0A%0A%09%24%20sed%20-i%20%27s/next\_server%3A%20127.0.0.1/next\_server%3A%20192.168.56.11/%27%20/etc/cobbler/settings%0A%09%0A3%u3001%u4FEE%u6539/etc/xinetd.d/tftp%u6587%u4EF6%u4E2D%u7684disable%u53C2%u6570%u4FEE%u6539%u4E3A%20disable%20%3D%20no%0A4%u3001%u6267%u884C%20cobbler%20get-loaders%20%u547D%u4EE4%u5373%u53EF%uFF1B%u5426%u5219%uFF0C%u9700%u8981%u5B89%u88C5syslinux%u7A0B%u5E8F%u5305%uFF0C%u800C%u540E%u590D%u5236/usr/share/syslinux/%7Bpxelinux.0%2Cmemu.c32%7D%u7B49%u6587%u4EF6%u81F3/var/lib/cobbler/loaders/%u76EE%u5F55%u4E2D%uFF1B%0A5%u3001%u6267%u884C%20systemctl%20enable%20rsyncd%u547D%u4EE4%u5373%u53EF%uFF1B%0A6%u3001%u5982%u679C%u6709%u5F3A%u8FEB%u75C7%u53EF%u4EE5%u9009%u62E9%20yum%20%u2013y%20install%20debmirror%20%u7136%u540E%u6839%u636E%u9519%u8BEF%u8FDB%u884C%u89E3%u51B3%2C%u4E00%u822C%u9519%u8BEF%u5982%u4E0B%u3002%0A%09%u6CE8%u91CA/etc/dedmirror.conf%u6587%u4EF6%u4E2D%u7684%20%20@dists%3D%u201Dsid%u201D%3B%20%20@arches%3D%u201Di386%u201D%3B%20%0A7%u3001%0A%60%60%60%0A%24%20openssl%20passwd%20-1%20-salt%20%27cobbler%27%20%27cobbler%27%0A%241%24cobbler%24M6SE55xZodWc9.vAKLJs6.%0A%24%20grep%20%22default\_password\_crypted%22%20/etc/cobbler/settings%20%0A%20%23%u66FF%u6362/etc/cobbler/setting%u5185%u7684default\_password\_crypted%0Adefault\_password\_crypted%3A%20%22%241%24cobbler%24M6SE55xZodWc9.vAKLJs6.%22%0A%60%60%60%0A8%u3001yum%20%u2013y%20install%20cman%20fence-agents%0A%u6700%u540E%u91CD%u542FCobbler%uFF1Asystemctl%20restart%20cobblerd%20%0A1.6%20%u914D%u7F6EDHCP%0A%60%60%60%0A%24%20sed%20-i%20%27s%23manage\_dhcp%3A%200%23manage\_dhcp%3A%201%23g%27%20/etc/cobbler/settings%20%0A%24%20vim%20/etc/cobbler/dhcp.template%20%0Asubnet%20192.168.56.0%20netmask%20255.255.255.0%20%7B%0A%20%20%20%20%20option%20routers%20%20%20%20%20%20%20%20%20%20%20%20%20192.168.56.2%3B%0A%20%20%20%20%20option%20domain-name-servers%20192.168.56.2%3B%0A%20%20%20%20%20option%20subnet-mask%20%20%20%20%20%20%20%20%20255.255.255.0%3B%0A%20%20%20%20%20range%20dynamic-bootp%20%20%20%20%20%20%20%20192.168.56.100%20192.168.56.254%3B%0A%20%20%20%20%20default-lease-time%20%20%20%20%20%20%20%20%2021600%3B%0A%20%20%20%20%20max-lease-time%20%20%20%20%20%20%20%20%20%20%20%20%2043200%3B%0A%20%20%20%20%20next-server%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%24next\_server%3B%0A%60%60%60%0A%23%23%23%20%u540C%u6B65Cobbler%0A%0A%60%60%60%0A%24%20systemctl%20restart%20xinetd%0A%24%20systemctl%20restart%20cobblerd%20%0A%24%20cobbler%20sync%20%0A%60%60%60%0A%23%23%23%20%u7BA1%u7406Cobbler%0Acobbler%u53D8%u5F97%u53EF%u7528%u7684%u7B2C%u4E00%u6B65%u4E3A%u5B9A%u4E49distro%uFF0C%u5176%u53EF%u4EE5%u901A%u8FC7%u4E3A%u5176%u6307%u5B9A%u5916%u90E8%u7684%u5B89%u88C5%u5F15%u5BFC%u5185%u6838%u53CAramdisk%u6587%u4EF6%u7684%u65B9%u5F0F%u5B9E%u73B0%u3002%0A%u5982%u679C%u5DF2%u7ECF%u6709%u5B8C%u6210%u7684%u5B89%u88C5%u6811%uFF08%u5982os%u7684%u5B89%u88C5%u955C%u50CF%uFF09%u5219%u63A8%u8350%u4F7F%u7528improt%u4E4B%u95F4%u5BFC%u5165%u7684%u65B9%u5F0F%u8FDB%u884C%u3002%0A%0A%60%60%60%0A%24%20mount%20/dev/cdrom%20/mnt/%20%23%u6302%u5728ISO%u5149%u76D8%u81F3%u670D%u52A1%u5668%0Amount%3A%20/dev/sr0%20is%20write-protected%2C%20mounting%20read-only%0A%24%20cobbler%20import%20--path%3D/mnt/%20--name%3DCentOS-7-x86\_64%20--arch%3Dx86\_64%0A%23%20--path%20%u955C%u50CF%u8DEF%u5F84%0A%23%20--name%20%u4E3A%u5B89%u88C5%u6E90%u5B9A%u4E49%u4E00%u4E2A%u540D%u5B57%0A%23%20--arch%20%u6307%u5B9A%u5B89%u88C5%u6E90%u662F32%u4F4D%u300164%u4F4D%u3001ia64%2C%20%u76EE%u524D%u652F%u6301%u7684%u9009%u9879%u6709%3A%20x86%u2502x86\_64%u2502ia64%0A%23%20%u5B89%u88C5%u6E90%u7684%u552F%u4E00%u6807%u793A%u5C31%u662F%u6839%u636Ename%u53C2%u6570%u6765%u5B9A%u4E49%uFF0C%u672C%u4F8B%u5BFC%u5165%u6210%u529F%u540E%uFF0C%u5B89%u88C5%u6E90%u7684%u552F%u4E00%u6807%u793A%u5C31%u662F%uFF1ACentOS-7.1-distro-x86\_64%u3002%0A%23%20%u955C%u50CF%u5B58%u653E%u76EE%u5F55%uFF0Ccobbler%u4F1A%u5C06%u955C%u50CF%u4E2D%u7684%u6240%u6709%u5B89%u88C5%u6587%u4EF6%u62F7%u8D1D%u5230%u672C%u5730%u4E00%u4EFD%uFF0C%u653E%u5728/var/www/cobbler/ks\_mirror%u4E0B%u7684CentOS-7.1-x86\_64-x86\_64%u76EE%u5F55%u4E0B%u3002%u56E0%u6B64/var/www/cobbler%u76EE%u5F55%u5FC5%u987B%u5177%u6709%u8DB3%u591F%u5BB9%u7EB3%u5B89%u88C5%u6587%u4EF6%u7684%u7A7A%u95F4%u3002%0A%0A%24%20%20cobbler%20distro%20list%20%0A%20%20%20CentOS-7-x86\_64%0A%24%20cobbler%20profile%20list%20%0A%20%20%20CentOS-7-x86\_64%0A%60%60%60%0A%0A%u5982%u679C%u6709kickstart%u6587%u4EF6%uFF0C%u4E5F%u53EF%u4EE5%u4F7F%u7528--kickstart%3D/path/to/kickstart\_file%u8FDB%u884C%u5BFC%u5165%uFF0C%u56E0%u6B64import%u4F1A%u81EA%u52A8%u4E3A%u5BFC%u5165%u7684distro%u751F%u6210%u4E00%u4E2Aprofile%0A%0A%23%23%23%20%u7BA1%u7406profile%0Acobbler%u4F7F%u7528profile%u6765%u4E3A%u7279%u5B9A%u7684%u9700%u6C42%u7C7B%u522B%u63D0%u4F9B%u9501%u9700%u8981%u5B89%u88C5%u7684%u914D%u7F6E%uFF0C%u5373%u5728distro%u7684%u57FA%u7840%u4E0A%u901A%u8FC7%u63D0%u4F9Bkiskstart%u6587%u4EF6%u6765%u751F%u6210%u4E00%u4E2A%u7279%u5B9A%u7684%u7CFB%u7EDF%u5B89%u88C5%u914D%u7F6E%u3002distro%u7684profile%u53EF%u4EE5%u51FA%u73B0%u5728pxe%u7684%u5F15%u5BFC%u83DC%u5355%u4E2D%u4F5C%u4E3A%u5B89%u88C5%u7684%u9009%u62E9%u4E4B%u4E00%0ACobbler-CentOS-7.1-x86\_64.cfg%u914D%u7F6E%u6587%u4EF6%u6211%u4F1A%u4E0A%u4F20%u81F3%u81F3%u9644%u4EF6%0A%u9ED8%u8BA4%u662F%u6709kickstart%u6587%u4EF6%u7684%uFF0C%u6240%u4EE5edit%uFF0C%u5982%u679C%u6CA1%u6709kickstart%u6587%u4EF6%u53EF%u4EE5add%0A%0A%60%60%60%0A%24%20ccobbler%20profile%20edit%20--name%3DCenOS-7-x86\_64%20--kickstart%3D/var/lib/cobbler/kickstarts/CentOS-7-x86\_64.cfg%20%0A%60%60%60%0A%u6307%u5B9Aks%u8DEF%u5F84CentOS7%u7CFB%u7EDF%u7F51%u5361%u540D%u53D8%u6210eno...%u8FD9%u79CD%uFF0C%u4E3A%u4E86%u8FD0%u7EF4%u6807%u51C6%u5316%uFF0C%u6211%u4EEC%u9700%u8981%u4FEE%u6539%u4E3A%u6211%u4EEC%u5E38%u7528%u7684eth0%uFF0C%u4F7F%u7528%u4E0B%u9762%u7684%u53C2%u6570%u3002%u4F46%u8981%u6CE8%u610F%u662FCentOS7%u624D%u9700%u8981%u4E0B%u9762%u7684%u6B65%u9AA4%uFF0CCentOS6%u4E0D%u9700%u8981%u3002%0A%60%60%60%0A%24%20cobbler%20profile%20edit%20--name%3DCentOS-7-x86\_64%20--kopts%3D%27net.ifnames%3D0%20biosdevname%3D0%27%0A%60%60%60%0A%u65B0%u90E8%u7F72%u673A%u5668%u5B89%u88C5yum%u6E90%uFF0C%u5E76%u540C%u6B65%u3002%u5EFA%u8BAE%u4F7F%u7528%u5185%u7F51yum%u6E90%uFF0C%u5728%u8FD9%u91CC%u4F7F%u7528%u963F%u91CC%u4E91yum%u6E90%0A%60%60%60%0A%24%20cobbler%20repo%20add%20--name%3Dbase%20--mirror%3Dhttp%3A//mirrors.aliyun.com/centos/7/os/x86\_64/Packages/%20--arch%3Dx86\_64%20--breed%3Dyum%20%23%u6DFB%u52A0yum%u6E90%0A%24%20cobbler%20repo%20add%20--name%3Dopenstack-mitaka%20--mirror%3Dhttp%3A//mirrors.aliyun.com/centos/7.2.1511/cloud/x86\_64/openstack-mitaka/%20--arch%3Dx86\_64%20--breed%3Dyum%0A%24%20cobbler%20profile%20edit%20--name%3DCentOS-7-x84\_64%20%20--repos%3D%22openstack-mitaka%22%0A%24%20cobbler%20reposync%20%23%u540C%u6B65yum%u6E90%0A%24%20cobbler%20sync%20%23%u6BCF%u6B21%u4FEE%u6539profile%u90FD%u9700%u8981%u540C%u6B65%0A%60%60%60%0A%0A%0A%u63A5%u4E0B%u6765%uFF0C%u5BF9%u65B0%u673A%u5B50%u5F00%u673A%uFF0C%u9009%u62E9%u9700%u8981%u5B89%u88C5%u7684%u7CFB%u7EDF%u4FBF%u53EF%u4EE5%u8FDB%u884C%u81EA%u52A8%u5316%u5B89%u88C5%u4E86%u3002%0A%0A%23%23%23%20%u5B9A%u5236%u5316%u5B89%u88C5%0A%u7531%u4E8Ekickstart%u6307%u5B9A%u67D0%u53F0%u670D%u52A1%u5668%u4F7F%u7528%u67D0%u4E2Aks%u6587%u4EF6%u6BD4%u8F83%u590D%u6742%uFF0C%u6240%u4EE5%u5F15%u7528Cobbler%u5C31%u5F88%u7B80%u5355%u3002%u901A%u8FC7%u7269%u7406MAC%u5730%u5740%u6765%u533A%u5206%u3002%0A%0Asystem%u4E3B%u8981%u76EE%u7684%u914D%u7F6E%u7F51%u7EDC%u63A5%u53E3%uFF0C%u901A%u8FC7system%u6765%u56FA%u5B9A%u673A%u5668%u7684IP%u3001%u63A9%u7801%u3001%u7F51%u5173%u3001DNS%u3001%u4E3B%u673A%u540D%u3001%u7B49%u7B49%u5B9E%u73B0%u57FA%u7840%u73AF%u5883%u6807%u51C6%u5316%0A%20%0A%0A%u6839%u636E%u673A%u5668%u7684MAC%u5730%u5740%uFF0C%u81EA%u52A8%u7ED1%u5B9AIP%uFF0C%u7F51%u5173%uFF0Cdns%u7B49%0A%0A%60%60%60%0A%24%20cobbler%20system%20add%20--name%3Dlinux-node1.com%20--mac%3D00%3A0C%3A29%3A6E%3A41%3ACB%20--profile%3DCentos7.1-profile-x86\_64%20%5C%0A--ip-address%3D192.168.56.11%20--subnet%3D255.255.255.0%20--gateway%3D192.168.56.2%20--interface%3Deth0%20%5C%0A--static%3D1%20--hostname%3Dlinux-node1.com%20--name-servers%3D%22114.114.114.114%208.8.8.8%22%0A%24%20cobbler%20system%20add%20--name%3Dlinux-node2.com%20--mac%3D00%3A50%3A56%3A31%3A6C%3ADF%20--profile%3DCentOS-7-x86\_64%20--ip-address%3D192.168.56.12%20--subnet%3D255.255.255.0%20--gateway%3D192.168.56.2%20--interface%3Deth0%20--static%3D1%20--hostname%3Dlinux-node1.com%20--name-servers%3D%22192.168.56.2%22%20--kickstart%3D/var/lib/cobbler/kickstarts/CentOS-7-x86\_64.cfg%0A%24%20cobbler%20sync%0A%5Broot@linux-node1%20%7E%5D%23%20%20cobbler%20system%20list%0A%20%20%20linux-node2.com%0A%20%20%20linux-node1.com%0A%60%60%60%0A%20%0A%u6709%u65F6%u5019%u9700%u8981%u7ED9%u4E2A%u4EBA%u6253%u5E7F%u544A%2C%u53EF%u4EE5%u901A%u8FC7%u8FD9%u79CD%u65B9%u5F0F%0A%20/etc/cobbler/pxe/pxedefault.template%20%23%u81EA%u5B9A%u4E49%u88C5%u673A%u9875%u9762%0A%0A%20%0A%u65B0%u7248cobbler%u7684web%u754C%u9762%u4F7F%u7528%u7684%u662Fhttps%uFF0C%u767B%u5F55https%3A//10.0.0.7/cobbler\_web%0Acobbler\_web%u652F%u6301%u591A%u79CD%u8BA4%u8BC1%u65B9%u5F0F%uFF0C%u5982authn\_configfil%u3001authn\_ldap%u6216authn\_pam%u7B49%uFF0C%u9ED8%u8BA4%u4E3Aauthn\_denyall%2C%u5373%u62D2%u7EDD%u6240%u6709%u7528%u6237%u767B%u9646%u3002%0A%u4E0B%u9762%u8BF4%u660E%u4E09%u79CD%u80FD%u8BA4%u8BC1%u7528%u6237%u767B%u5F55cobbler\_web%u7684%u65B9%u5F0F%0A1.%u4F7F%u7528authn\_pam%u6A21%u5757%u8BA4%u8BC1cobbler\_web%u7528%u6237%0A%u9996%u5148%u4FEE%u6539modules%u4E2D%u7684%5Bauthentication%5D%u6BB5%u4E2D%u7684module%u53C2%u6570%u7684%u503C%u4E3Aauthn\_pam%0A%20%20%u63A5%u7740%u521B%u5EFA%u7CFB%u7EDF%u7528%u6237%uFF0C%u5E76%u4E3A%u7528%u6237%u8BBE%u5B9A%u5BC6%u7801%0A%20%20%u800C%u540E%u5C06%u8BBE%u5B9A%u7684%u7CFB%u7EDF%u7528%u6237%u6DFB%u52A0%u81F3cobbler\_web%u7684admin%u7EC4%u4E2D%uFF0C%u4FEE%u6539/etc/cobbler/users.conf%20%u6587%u4EF6%uFF0C%u5C06%u8BBE%u5B9A%u7684%u7528%u6237%u6DFB%u52A0%u4E3Aadmin%u53C2%u6570%u7684%u503C%u5373%u53EF%0A%202.%u4F7F%u7528authn\_configfile%u6A21%u5757%u8BA4%u8BC1cobbler\_web%u7528%u6237%0A%20%20%u9996%u5148%u4FEE%u6539modules%u4E2D%u7684%5Bauthentication%5D%u6BB5%u4E2D%u7684module%u53C2%u6570%u7684%u503C%u4E3Aauthn\_configfile%0A%20%u6DFB%u52A0%u7B2C%u4E00%u7528%u6237%u65F6%uFF0C%u9700%u8981%u4E3Ahtdigest%u547D%u4EE4%u4F7F%u7528%u201C-c%u201D%20etc/cobbler/users.digest%uFF0C%u540E%u7EED%u6DFB%u52A0%u5176%u4ED6%u7528%u6237%u5219%u4E0D%u80FD%u518D%u4F7F%u7528%uFF0C%u540C%u6B65cobbler%u91CD%u542Fhttpd%u4EE5%u53CAcobbler%0A3.%u4F7F%u7528cobbler%u9ED8%u8BA4%u7684web%u8D26%u53F7%u5BC6%u7801%u8BA4%u8BC1%0Auser%uFF1Acobbler%0Apass%uFF1Acobbler%0A%20%0A%0A%23%23%23%20%u5BF9%u67D0%u4E00%u53F0%u673A%u5B50%u8FDB%u884C%u91CD%u88C5%0A%u5728%u9700%u8981%u91CD%u88C5%u7684%u7CFB%u7EDF%u4E0A%u6267%u884C%0A%0A%60%60%60%0Ayum%20install%20koan%20-y%0Akoan%20--replace-self%20--server%3D192.168.56.11%20--profile%3DCenOS-7-x86\_64%0A%60%60%60