

Ansible模块知多少

ansible 默认提供了很多模块来供我们使用。在 Linux 中，我们可以通过 `ansible-doc -l` 命令查看到当前 ansible 都支持哪些模块，通过 `ansible-doc -s 模块名` 又可以查看该模块有哪些参数可以使用。

下面介绍比较常用的几个模块：

1	copy模块
2	file模块
3	cron模块
4	group模块
5	user模块
6	yum模块
7	service模块
8	script模块
9	ping模块
10	command模块
11	raw模块
12	get_url模块
13	synchronize模块

copy模块：

目的：把主控端/root目录下的a.sh文件拷贝到指定节点上

命令：`ansible 10.1.1.113 -m copy -a 'src=/root/a.sh dest=/tmp/'`

执行效果：

```
[root@relay-ops01-rj relay-ops01-rj.btr /root]
# ansible 10.1.1.113 -m copy -a 'src=/root/a.sh dest=/tmp/'
[WARNING]: The version of gmp you have installed has a known issue regarding
timing vulnerabilities when used with pycrypto. If possible, you should update
it (ie. yum update gmp).

10.1.1.113 | success >> {
  "changed": true,
  "dest": "/tmp/a.sh",
  "gid": 0,
  "group": "root",
  "md5sum": "785c47968ae9a7d01a8e397aa318fe77",
  "mode": "0644",
  "owner": "root",
  "secontext": "unconfined_u:object_r:admin_home_t:s0",
  "size": 9,
  "src": "/root/.ansible/tmp/ansible-tmp-1414585099.98-206273773375098/source",
  "state": "file",
  "uid": 0
}

[root@relay-ops01-rj relay-ops01-rj.btr /root]
# ansible 10.1.1.113 -a 'ls /tmp/a.sh'
[WARNING]: The version of gmp you have installed has a known issue regarding
timing vulnerabilities when used with pycrypto. If possible, you should update
it (ie. yum update gmp).

10.1.1.113 | success | rc=0 >>
/tmp/a.sh
```

file模块：

目的：更改指定节点上/tmp/t.sh的权限为755，属主和属组为root

命令：`ansible all -m file -a "dest=/tmp/t.sh mode=755 owner=root group=root"`

执行效果：

```
[root@relay-ops01-rj relay-ops01-rj.btr /root]
# ansible 10.1.1.113 -m file -a "dest=/tmp/t.sh mode=755 owner=root group=root"
[WARNING]: The version of gmp you have installed has a known issue regarding
timing vulnerabilities when used with pycrypto. If possible, you should update
it (ie. yum update gmp).

10.1.1.113 | success >> {
  "changed": true,
  "gid": 0,
  "group": "root",
  "mode": "0755",
  "owner": "root",
  "path": "/tmp/t.sh",
  "size": 0,
  "state": "file",
  "uid": 0
}
```

cron模块：

目的：在指定节点上定义一个计划任务，每隔3分钟到主控端更新一次时间

命令：ansible all -m cron -a 'name="custom job" minute=*/3 hour=* day=* month=* weekday=* job="/usr/sbin/ntpdate 172.16.254.139"'

执行效果：

```
[root@relay-ops01-rj relay-ops01-rj.btr /root]
# ansible 10.1.1.113 -m cron -a 'name="custom job" minute=*/3 hour=* day=* month=* weekday=* job="/usr/sbin/ntpdate 10.1.1.101"'
[WARNING]: The version of gmp you have installed has a known issue regarding
timing vulnerabilities when used with pycrypto. If possible, you should update
it (ie. yum update gmp).

10.1.1.113 | success >> {
  "changed": true,
  "jobs": [
    "custom job"
  ]
}

[root@relay-ops01-rj relay-ops01-rj.btr /root]
# ansible 10.1.1.113 -a 'crontab -l'
[WARNING]: The version of gmp you have installed has a known issue regarding
timing vulnerabilities when used with pycrypto. If possible, you should update
it (ie. yum update gmp).

10.1.1.113 | success | rc=0 >>
30 23 * * * /usr/local/scripts/auto-del-20-days-ago-log.sh
#Ansible: custom job
*/3 * * * * /usr/sbin/ntpdate 10.1.1.101
```

group模块：

目的：在所有节点上创建一个组名为nolinux，gid为2014的组

命令：ansible all -m group -a 'gid=2014 name=nolinux'

执行效果：

```
[root@relay-ops01-rj relay-ops01-rj.btr /root]
# ansible 10.1.1.113 -m group -a 'gid=2014 name=nolinux'
[WARNING]: The version of gmp you have installed has a known issue regarding
timing vulnerabilities when used with pycrypto. If possible, you should update
it (ie. yum update gmp).

10.1.1.113 | success >> {
  "changed": true,
  "gid": 2014,
  "name": "nolinux",
  "state": "present",
  "system": false
}
```

user模块：

目的：在指定节点上创建一个用户名为nolinux，组为nolinux的用户

命令：ansible 10.1.1.113 -m user -a 'name=nolinux groups=nolinux state=present'

执行命令：

```
[root@relay-ops01-rj relay-ops01-rj.btr /root]
# ansible 10.1.1.113 -m user -a 'name=nolinux groups=nolinux state=present'
[WARNING]: The version of gmp you have installed has a known issue regarding
timing vulnerabilities when used with pycrypto. If possible, you should update
it (ie. yum update gmp).

10.1.1.113 | success >> {
  "changed": true,
  "comment": "",
  "createhome": true,
  "group": 100,
  "groups": "nolinux",
  "home": "/home/nolinux",
  "name": "nolinux",
  "shell": "/bin/bash",
  "state": "present",
  "system": false,
  "uid": 502
}

[root@relay-ops01-rj relay-ops01-rj.btr /root]
# ansible 10.1.1.113 -a 'id nolinux'
[WARNING]: The version of gmp you have installed has a known issue regarding
timing vulnerabilities when used with pycrypto. If possible, you should update
it (ie. yum update gmp).

10.1.1.113 | success | rc=0 >>
uid=502(nolinux) gid=100(users) groups=100(users),2014(nolinux)
```

补充：删除用户示例

```
[root@relay-ops01-rj relay-ops01-rj.btr /root]
# ansible 10.1.1.113 -m user -a 'name=nolinux state=absent remove=yes'
[WARNING]: The version of gmp you have installed has a known issue regarding
timing vulnerabilities when used with pycrypto. If possible, you should update
it (ie. yum update gmp).

10.1.1.113 | success >> {
  "changed": true,
  "force": false,
  "name": "nolinux",
  "remove": true,
  "state": "absent"
}

[root@relay-ops01-rj relay-ops01-rj.btr /root]
# ansible 10.1.1.113 -a 'id nolinux'
[WARNING]: The version of gmp you have installed has a known issue regarding
timing vulnerabilities when used with pycrypto. If possible, you should update
it (ie. yum update gmp).

10.1.1.113 | FAILED | rc=1 >>
id: nolinux: No such user
```

yum模块：

目的：在指定节点上安装 lrzsz 服务

```
命令 : ansible all -m yum -a "state=present name=httpd"
```

执行效果：

```
[root@relay-mysql01 ~]# relay-mysql01-ibrr /zoot/
# enable 10.1.1.113 -m pm-a "Statement name=lrzz"
[WARNING]: The version of gmp you have installed has a known issue regarding
          timing vulnerabilities when used with pycrypto. If possible, you should update
          it (ie. you update gmp).

10.1.1.113 | success => {
    "changed": true,
    "results": [
        {
            "loaded plugins: Fastestmirror, security/unsetting up Remove Process/unloading Dependencies/<n>-> Running transaction check/<n>-> Package lrzz.x86_64 0:0.12-20-27.1.el6 will be erased/<n>-> Finished Dependency Resolution/<n>-> Dependencies Resolved/<n>-> Uninstalling file lrzz.x86_64 0:12-20-27.1.el6 <n> Package 159.kit/mirrortransaction Summary/<n>-> Repository Size/<n>-> Arch/<n>-> Version/<n>-> Installed In/<n>-> Transaction Test Succeeded/<n>-> Removing Transaction/Vir Erasing : lrzz-0.12-20-27.1.el6.x86_64 1/1 virt removed/<n> lrzz.x86_64 0:0.12-20-27.1.el6
        }
    ]
}

[root@relay-mysql01 ~]# relay-mysql01-ibrr /zoot/
# enable 10.1.1.113 -m pm-a "rpm-qe/gmp lrzz"
[WARNING]: The version of gmp you have installed has a known issue regarding
          timing vulnerabilities when used with pycrypto. If possible, you should update
          it (ie. you update gmp).

10.1.1.113 | FAIL00 | rest =>

[root@relay-mysql01 ~]# relay-mysql01-ibrr /zoot/
# enable 10.1.1.113 -m pm-a "ide-grepent name=lrzza"
[WARNING]: The version of gmp you have installed has a known issue regarding
          timing vulnerabilities when used with pycrypto. If possible, you should update
          it (ie. you update gmp).

10.1.1.113 | success => {
    "changed": true,
    "results": [
        {
            "loaded plugins: Fastestmirror, security/loading mirror speeds from cached hostfile/<n> base2: mirrors.pvu.edu.cn/<n> gpe1: ftp.sju.edu.cn/<n> extra2: mirrors.bts.net/<n> + updated2: mirrors.nusaf.edu.cn/unsetting up Install Mirror/Unsettlng Dependencies/<n>-> Package lrzz.x86_64 0:0.12-20-27.1.el6 will be installed/<n>-> Finished Dependency Resolution/<n>-> Dependencies Resolved/<n>-> Installing file lrzz.x86_64 0:12-20-27.1.el6 <n> Package Arch/<n>-> Version/<n>-> Repository Size/<n>-> Installed In/<n>-> Transaction Test Succeeded/<n>-> Installing Transaction/Vir Installing : lrzz-0.12-20-27.1.el6.x86_64 1/1 virt new/<n> lrzz.x86_64 0:12-20-27.1.el6.x86_64 1/1 virt new/<n> lrzz.x86_64 0:12-20-27.1.el6
        }
    ]
}
```

service模块：

目的：启动指定节点上的 puppet 服务，并让其开机自启动

命令 : `ansible 10.1.1.113 -m service -a 'name=puppet state=restarted enabled=yes'`

执行效果 :

```
[root@relay-ops01-rj relay-ops01-rj.btr /root]
# ansible 10.1.1.113 -m service -a "name=puppet state=restarted enabled=yes"
[WARNING]: The version of gmp you have installed has a known issue regarding
timing vulnerabilities when used with pycrypto. If possible, you should update
it (ie. yum update gmp).

10.1.1.113 | success >> {
  "changed": true,
  "enabled": true,
  "name": "puppet",
  "state": "started"
}
```

script 模块:

目的 : 在指定节点上执行/root/a.sh脚本(该脚本是在ansible控制节点上的)

命令 : `ansible 10.1.1.113 -m script -a '/root/a.sh'`

执行效果 :

```
[root@relay-ops01-rj relay-ops01-rj.btr /root]
# cat a.sh
hostname

[root@relay-ops01-rj relay-ops01-rj.btr /root]
# ansible 10.1.1.113 -m script -a '/root/a.sh'
[WARNING]: The version of gmp you have installed has a known issue regarding
timing vulnerabilities when used with pycrypto. If possible, you should update
it (ie. yum update gmp).

10.1.1.113 | success >> {
  "changed": true,
  "rc": 0,
  "stderr": "",
  "stdout": "repair-web01-rj.btr\n"
}
```

ping 模块:

目的 : 检查指定节点机器是否还能连通

命令 : `ansible 10.1.1.113 -m ping`

执行效果 :

```
[root@relay-ops01-rj relay-ops01-rj.btr /root]
# ansible 10.1.1.113 -m ping
[WARNING]: The version of gmp you have installed has a known issue regarding
timing vulnerabilities when used with pycrypto. If possible, you should update
it (ie. yum update gmp).

10.1.1.113 | success >> {
  "changed": false,
  "ping": "pong"
}
```

command 模块:

目的 : 在指定节点上运行hostname命令

命令 : `ansible 10.1.1.113 -m command -a 'hostname'`

执行效果 :

```
[root@relay-ops01-rj relay-ops01-rj.btr /root]
# ansible 10.1.1.113 -m command -a 'hostname'
[WARNING]: The version of gmp you have installed has a known issue regarding
timing vulnerabilities when used with pycrypto. If possible, you should update
it (ie. yum update gmp).

10.1.1.113 | success | rc=0 >>
repair-web01-rj.btr

[root@relay-ops01-rj relay-ops01-rj.btr /root]
# ansible 10.1.1.113 -m command -a 'hostname|tee'
[WARNING]: The version of gmp you have installed has a known issue regarding
timing vulnerabilities when used with pycrypto. If possible, you should update
it (ie. yum update gmp).

10.1.1.113 | FAILED | rc=2 >>
[Errno 2] No such file or directory
```

raw模块:

目的: 在10.1.1.113节点上运行hostname命令

命令: `ansible 10.1.1.113 -m raw -a 'hostname|tee'`

执行效果:

```
[root@relay-ops01-rj relay-ops01-rj.btr /root]
# ansible 10.1.1.113 -m raw -a 'hostname|tee'
[WARNING]: The version of gmp you have installed has a known issue regarding
timing vulnerabilities when used with pycrypto. If possible, you should update
it (ie. yum update gmp).

10.1.1.113 | success | rc=0 >>
repair-web01-rj.btr
```

get_url模块:

目的: 将<http://10.1.1.116/favicon.ico>文件下载到指定节点的/tmp目录下

命令: `ansible 10.1.1.113 -m get_url -a 'url=http://10.1.1.116/favicon.ico dest=/tmp'`

执行效果:

```
[root@relay-ops01-rj relay-ops01-rj.btr /root]
# ansible 10.1.1.113 -a 'ls /tmp/favicon.ico'
[WARNING]: The version of gmp you have installed has a known issue regarding
timing vulnerabilities when used with pycrypto. If possible, you should update
it (ie. yum update gmp).

10.1.1.113 | FAILED | rc=2 >>
ls: cannot access /tmp/favicon.ico: No such file or directory

[root@relay-ops01-rj relay-ops01-rj.btr /root]
# ansible 10.1.1.113 -m get_url -a 'url=http://10.1.1.116/favicon.ico dest=/tmp'
[WARNING]: The version of gmp you have installed has a known issue regarding
timing vulnerabilities when used with pycrypto. If possible, you should update
it (ie. yum update gmp).

10.1.1.113 | success >> {
  "changed": true,
  "dest": "/tmp/favicon.ico",
  "gid": 0,
  "group": "root",
  "md5sum": "d41d8cd98f00b204e9800998ecf8427e",
  "mode": "0644",
  "msg": "OK (0 bytes)",
  "owner": "root",
  "secontext": "unconfined_u:object_r:user_tmp_t:s0",
  "sha256sum": "",
  "size": 0,
  "src": "/tmp/tmpcyZGhl",
  "state": "file",
  "uid": 0,
  "url": "http://10.1.1.116/favicon.ico"
}

[root@relay-ops01-rj relay-ops01-rj.btr /root]
# ansible 10.1.1.113 -a 'ls /tmp/favicon.ico'
[WARNING]: The version of gmp you have installed has a known issue regarding
timing vulnerabilities when used with pycrypto. If possible, you should update
it (ie. yum update gmp).

10.1.1.113 | success | rc=0 >>
/tmp/favicon.ico
```

synchronize模块：

目的：将主控方/root/a目录推送到指定节点的/tmp目录下

命令：ansible 10.1.1.113 -m synchronize -a 'src=/root/a dest=/tmp/ compress=yes'

执行效果：

delete=yes 使两边的内容一样（即以推送方为主）

compress=yes 开启压缩，默认为开启

--exclude=.git 忽略同步.git结尾的文件

```
[root@relay-ops01-rj relay-ops01-rj.btr /root]
# ansible 10.1.1.113 -m synchronize -a 'src=/root/a dest=/tmp/ compress=yes'
[WARNING]: The version of gmp you have installed has a known issue regarding
timing vulnerabilities when used with pycrypto. If possible, you should update
it (ie. yum update gmp).
10.1.1.113 | success => {
  "changed": true,
  "cmd": "rsync --delay-updates -FF --compress --archive --rsh 'ssh -o StrictHostKeyChecking=no' --out-format='<<CHANGED>>Nl %b%L' \"/root/a/" \"/root@10.1.1.113:/tmp/\"",
  "msg": "d.t..... a/b/c/d/f/n",
  "rc": 0,
  "stdout_lines": [
    "d.t..... a/b/c/d/f"
  ]
}

[root@relay-ops01-rj relay-ops01-rj.btr /root]
# ansible 10.1.1.113 -m synchronize -a 'src=/root/a dest=/tmp/ compress=yes delete=yes'
[WARNING]: The version of gmp you have installed has a known issue regarding
timing vulnerabilities when used with pycrypto. If possible, you should update
it (ie. yum update gmp).
10.1.1.113 | success => {
  "changed": true,
  "cmd": "rsync --delay-updates -FF --compress --delete-after --archive --rsh 'ssh -o StrictHostKeyChecking=no' --out-format='<<CHANGED>>Nl %b%L' \"/root/a/" \"/root@10.1.1.113:/tmp/\"",
  "msg": "deleting a/b/c/d/f/n",
  "rc": 0,
  "stdout_lines": [
    "deleting a/b/c/d/f"
  ]
}

[root@relay-ops01-rj relay-ops01-rj.btr /root]
# ansible 10.1.1.113 -m synchronize -a 'src=/root/a dest=/tmp/ compress=yes delete=yes'
[WARNING]: The version of gmp you have installed has a known issue regarding
timing vulnerabilities when used with pycrypto. If possible, you should update
it (ie. yum update gmp).
10.1.1.113 | success => {
  "changed": true,
  "cmd": "rsync --delay-updates -FF --compress --delete-after --archive --rsh 'ssh -o StrictHostKeyChecking=no' --out-format='<<CHANGED>>Nl %b%L' \"/root/a/" \"/root@10.1.1.113:/tmp/\"",
  "msg": "d.t..... a/b/c/d/f/n",
  "rc": 0,
  "stdout_lines": [
    "d.t..... a/b/c/d/f",
    "deleting a/b/c/d/f"
  ]
}
```

由于模块，默认都是推送push。因此，如果你在使用拉取pull功能的时候，可以参考如下来实现

mode=pull 更改推送模式为拉取模式

目的：将10.1.1.113节点的/tmp/a目录拉取到主控节点的/root目录下

命令：ansible 10.1.1.113 -m synchronize -a 'mode=pull src=/tmp/a dest=/root/'

执行效果：

```
[root@relay-ops01-rj relay-ops01-rj.btr /root]
# tree a
a
(error opening dir)
0 directories, 0 files

[root@relay-ops01-rj relay-ops01-rj.btr /root]
# ansible 10.1.1.113 -m synchronize -a 'mode=pull src=/tmp/a dest=/root/'
[WARNING]: The version of gmp you have installed has a known issue regarding
timing vulnerabilities when used with pycrypto. If possible, you should update
it (ie. yum update gmp).
10.1.1.113 | success | rc=0 >>
dmesg-sr-x. 1 root root 4096 Oct 29 21:18 /tmp/a

[root@relay-ops01-rj relay-ops01-rj.btr /root]
# ansible 10.1.1.113 -m synchronize -a 'mode=pull src=/tmp/a dest=/root/'
[WARNING]: The version of gmp you have installed has a known issue regarding
timing vulnerabilities when used with pycrypto. If possible, you should update
it (ie. yum update gmp).
10.1.1.113 | success => {
  "changed": true,
  "cmd": "rsync --delay-updates -FF --compress --archive --rsh 'ssh -o StrictHostKeyChecking=no' --out-format='<<CHANGED>>Nl %b%L' \"/root@10.1.1.113:/tmp/a/" \"/root/\"",
  "msg": "Cd+++++++ a/b/cd+++++++ a/b/c/cd+++++++ a/b/c/d/f+++++++ a/b/c/d/e/n",
  "rc": 0,
  "stdout_lines": [
    "Cd+++++++ a/",
    "Cd+++++++ a/b/",
    "Cd+++++++ a/b/c/",
    "Cd+++++++ a/b/c/d/",
    "f+++++++ a/b/c/d/e"
  ]
}

[root@relay-ops01-rj relay-ops01-rj.btr /root]
# tree a
a
├── b
│   ├── c
│   │   └── d
│   │       └── e
└── 3 directories, 1 file

[root@relay-ops01-rj relay-ops01-rj.btr /root]
```

由于模块默认启用了archive参数，该参数默认开启了recursive, links, perms, times, owner，group和-D参数。如果你将该参数设置为no，那么你将停止很多参数，比如会导致如下目的递归失败，导致无法拉取

```
[root@relay-ops01-rj relay-ops01-rj.btr /root]
# rm -rf a

[root@relay-ops01-rj relay-ops01-rj.btr /root]
# ansible 10.1.1.113 -m synchronize -a 'archive=no mode=pull src=/tmp/a dest=/root/'
[WARNING]: The version of gmp you have installed has a known issue regarding
timing vulnerabilities when used with pycrypto. If possible, you should update
it (ie. yum update gmp).
10.1.1.113 | success => {
  "changed": false,
  "cmd": "rsync --delay-updates -FF --compress --rsh 'ssh -o StrictHostKeyChecking=no' --out-format='<<CHANGED>>%i %r\n%' \"root@10.1.1.113:/tmp/a\" \"/root/\"",
  "msg": "Skipping directory a\n",
  "rc": 0,
  "stdout_lines": [
    "Skipping directory a"
  ]
}

[root@relay-ops01-rj relay-ops01-rj.btr /root]
# tree a
a [error opening dir]
0 directories, 0 files
```

其它相关的参数解释：

1	dest_port=22	# 指定目的主机的ssh端口，ansible配置文件中的 <code>ansible_ssh_port</code> 变量优先级高于该 <code>dest_port</code> 变量
2	rsync_path	# 指定 <code>rsync</code> 命令来在远程服务器上运行。这个参考rsync命令的--rsync-path参数，--rsync-path=
3	PATH	# 指定远程服务器上的rsync命令所在路径信息
	rsync_timeout	# 指定 <code>rsync</code> 操作的 IP 超时时间，和rsync命令的 <code>--timeout</code> 参数效果一样

OK！

以上暂且列举这些日常运维中经常会用到的一些模块，更多的模块信息后期会继续完善，大家也可以去官网查看更多的信息。