centos7.2最小化安装导致castool配置ip下发失败

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组网及说明

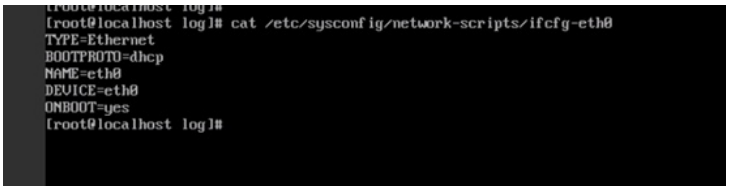
在CAS平台上创建centos虚拟机，最小化安装，安装完以后在CAS前台通过castool给虚拟机配置IP地址，发现前台配置信息显示正常，但是虚拟机系统里看不到ip。

问题描述

在CAS平台上创建centos虚拟机，最小化安装，安装完以后在CAS前台通过castool给虚拟机配置IP地址，发现前台配置信息显示正常，但是虚拟机系统里看不到ip。

故障现象：

查看虚机网络配置文件，没有对应ip信息。



```
[root@localhost log]# cat /etc/sysconfig/network-scripts/ifcfg-eth0
TYPE=Ethernet
BOOTPROTO=dhcp
NAME=eth0
DEVICE=eth0
ONBOOT=yes
[root@localhost log]#
```

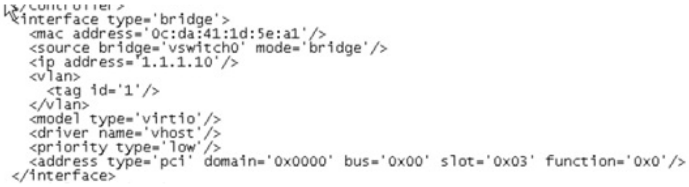
过程分析

1、 检查castool状态

现场castool状态正常

2、 查看虚拟机的配置文件，xml文件中是否有对应的网络信息

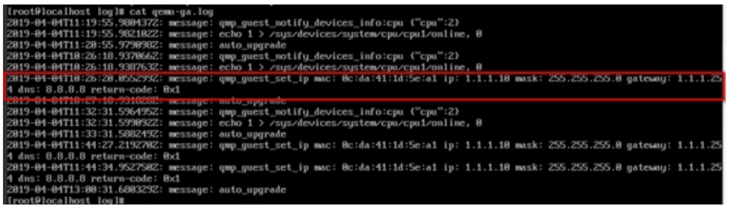
发现配置已经写到虚机的xml文件中，所以前台读取xml文件信息，能够正常显示



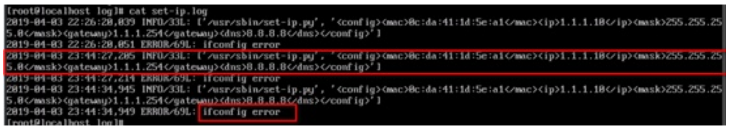
```
<interface type='bridge'>
  <mac address='0c:da:41:1d:5e:a1'/>
  <source bridge='vswitch0' mode='bridge'/>
  <ip address='1.1.1.10'/>
  <vlan>
    <tag id='1'/>
  </vlan>
  <model type='virtio'/>
  <driver name='vhost'/>
  <priority type='low'/>
  <address type='pci' domain='0x0000' bus='0x00' slot='0x03' function='0x0'/>
</interface>
```

3、查看虚拟机castool日志qemu-ga.log，及set-ip.log

发现前台下发的配置ip的命令确实下发，但是出现ifconfig error,导致没有下发到网卡上。

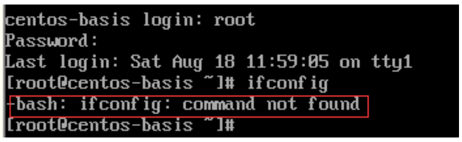


```
[root@localhost log]# cat qemu-ga.log
2019-04-04T11:19:55.9804372Z: message: qmp_guest_notify_devices_info:cpu {"cpu":2}
2019-04-04T11:19:55.9821022Z: message: echo 1 > /sys/devices/system/cpu/cpu1/online, 0
2019-04-04T11:20:55.9790982Z: message: auto_upgrade
2019-04-04T10:26:18.9370662Z: message: qmp_guest_notify_devices_info:cpu {"cpu":2}
2019-04-04T10:26:18.9387632Z: message: echo 1 > /sys/devices/system/cpu/cpu1/online, 0
2019-04-04T10:26:20.0552992Z: message: qmp_guest_set_ip mac: 0c:da:41:1d:5e:a1 ip: 1.1.1.10 mask: 255.255.255.0 gateway: 1.1.1.25
4 dns: 8.8.8.8 return-code: 0x1
2019-04-04T10:27:10.9310282Z: message: auto_upgrade
2019-04-04T11:32:31.5964952Z: message: qmp_guest_notify_devices_info:cpu {"cpu":2}
2019-04-04T11:32:31.5990922Z: message: echo 1 > /sys/devices/system/cpu/cpu1/online, 0
2019-04-04T11:33:31.5882492Z: message: auto_upgrade
2019-04-04T11:44:27.2192782Z: message: qmp_guest_set_ip mac: 0c:da:41:1d:5e:a1 ip: 1.1.1.10 mask: 255.255.255.0 gateway: 1.1.1.25
4 dns: 8.8.8.8 return-code: 0x1
2019-04-04T11:44:34.9527582Z: message: qmp_guest_set_ip mac: 0c:da:41:1d:5e:a1 ip: 1.1.1.10 mask: 255.255.255.0 gateway: 1.1.1.25
4 dns: 8.8.8.8 return-code: 0x1
2019-04-04T13:00:31.6803292Z: message: auto_upgrade
[root@localhost log]#
```

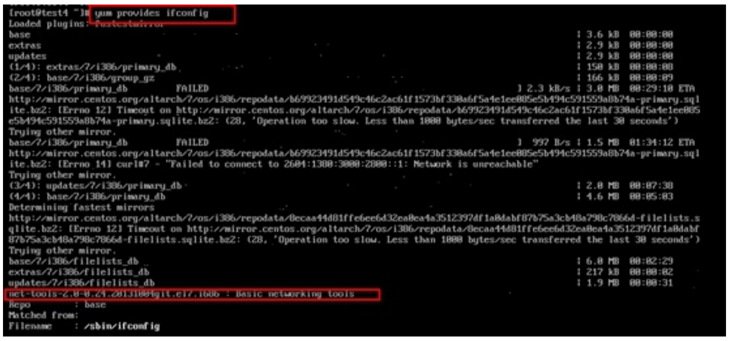


```
[root@localhost log]# cat set-ip.log
2019-04-03 22:26:20,039 INFO/33L: ['/usr/sbin/set-ip.py', '<config><mac>0c:da:41:1d:5e:a1</mac><ip>1.1.1.10</ip><mask>255.255.25
5.0</mask><gateway>1.1.1.254</gateway><dns>8.8.8.8</dns></config>']
2019-04-03 22:26:20,051 ERROR/69L: ifconfig error
2019-04-03 23:44:27,205 INFO/33L: ['/usr/sbin/set-ip.py', '<config><mac>0c:da:41:1d:5e:a1</mac><ip>1.1.1.10</ip><mask>255.255.25
5.0</mask><gateway>1.1.1.254</gateway><dns>8.8.8.8</dns></config>']
2019-04-03 23:44:27,214 ERROR/69L: ifconfig error
2019-04-03 23:44:34,945 INFO/33L: ['/usr/sbin/set-ip.py', '<config><mac>0c:da:41:1d:5e:a1</mac><ip>1.1.1.10</ip><mask>255.255.25
5.0</mask><gateway>1.1.1.254</gateway><dns>8.8.8.8</dns></config>']
2019-04-03 23:44:34,949 ERROR/69L: ifconfig error
[root@localhost log]#
```

经过上面分析，问题应该出在虚拟机系统内部。通过咨询研发和查找相关资料，发现问题的原因在于centos最小化安装，只有基本的功能，很多组件没有安装，其中ifconfig命令所在的net-tools工具包如果没有安装，将导致ifconfig 命令无法使用，而castool下发ip配置需要调用这个命令。



```
centos-basis login: root
Password:
Last login: Sat Aug 18 11:59:05 on tty1
[root@centos-basis ~]# ifconfig
-bash: ifconfig: command not found
[root@centos-basis ~]#
```

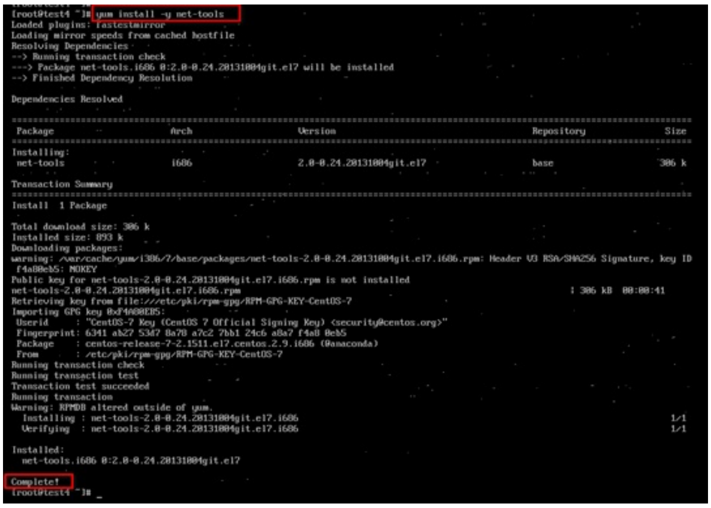


```
[root@test4 ~]# yum provides ifconfig
Loaded plugins: fastestmirror
base                                                                       | 3.6 kB  00:00:00
extras                                                                     | 2.9 kB  00:00:00
updates                                                                    | 2.9 kB  00:00:00
(1/4): extras/7/i386/primary_db                                            | 150 kB  00:00:00
(2/4): base/7/i386/group_gz                                                | 166 kB  00:00:09
base/7/i386/primary_db         FAILED                            ] 2.3 kB/s | 3.0 MB  00:29:10 ETA
http://mirror.centos.org/altarch/7/os/i386/repodata/b69923491d549c46c2ac61f1573bf338a6f5a4e1ee885e5b494c591559a8b74a-primary.sql
ite.bz2: [Errno 12] Timeout on http://mirror.centos.org/altarch/7/os/i386/repodata/b69923491d549c46c2ac61f1573bf338a6f5a4e1ee885
e5b494c591559a8b74a-primary.sqlite.bz2: (28, 'Operation too slow. Less than 1000 bytes/sec transferred the last 30 seconds')
Trying other mirror.
base/7/i386/primary_db         FAILED                            ]  997 B/s | 1.5 MB  01:34:12 ETA
http://mirror.centos.org/altarch/7/os/i386/repodata/b69923491d549c46c2ac61f1573bf338a6f5a4e1ee885e5b494c591559a8b74a-primary.sql
ite.bz2: [Errno 14] curl#7 - "Failed to connect to 2604:1380:3000:2800::1: Network is unreachable"
Trying other mirror.
(3/4): updates/7/i386/primary_db                                           | 2.0 MB  00:07:30
(4/4): base/7/i386/primary_db                                              | 4.6 MB  00:05:03
Determining fastest mirrors
http://mirror.centos.org/altarch/7/os/i386/repodata/0ecaa44d81ffe6ee6d32ea0ea4a3512397df1a0dabf87b75a3cb48a798c7866d-filelists.s
qlite.bz2: [Errno 12] Timeout on http://mirror.centos.org/altarch/7/os/i386/repodata/0ecaa44d81ffe6ee6d32ea0ea4a3512397df1a0dabf
87b75a3cb48a798c7866d-filelists.sqlite.bz2: (28, 'Operation too slow. Less than 1000 bytes/sec transferred the last 30 seconds')
Trying other mirror.
base/7/i386/filelists_db                                                   | 6.0 MB  00:02:29
extras/7/i386/filelists_db                                                 | 217 kB  00:00:02
updates/7/i386/filelists_db                                                | 1.9 MB  00:00:31
net-tools-2.0-0.24.20131004git.el7.i686 : Basic networking tools
Repo        : base
Matched from:
Filename    : /sbin/ifconfig
```

解决方法

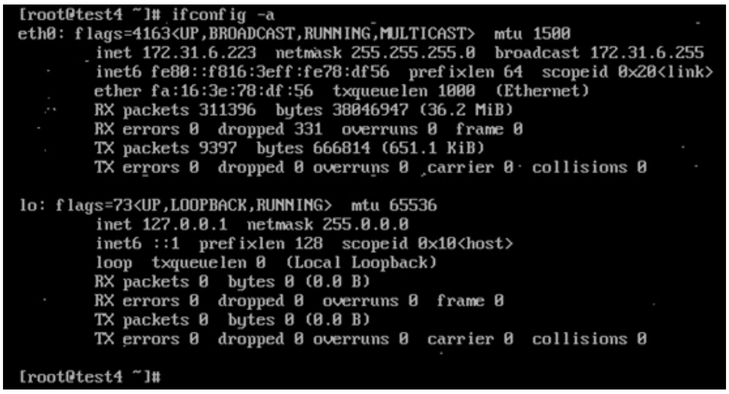
既然知道是ifconfig的原因，那就需要安装net-tools工具包。

情况1：如果你的虚拟机已经可以联网了，只需要执行：yum install –y net-tools，当看到Compete就表示安装成功



```
[root@test4 ~]# yum install -y net-tools
Loaded plugins: fastestmirror
Loading mirror speeds from cached hostfile
Resolving Dependencies
--> Running transaction check
---> Package net-tools.i686 0:2.0-0.24.20131004git.el7 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

================================================================================================
 Package              Arch              Version                          Repository        Size
================================================================================================
Installing:
 net-tools            i686              2.0-0.24.20131004git.el7         base             306 k

Transaction Summary
================================================================================================
Install  1 Package

Total download size: 306 k
Installed size: 893 k
Downloading packages:
warning: /var/cache/yum/i386/7/base/packages/net-tools-2.0-0.24.20131004git.el7.i686.rpm: Header V3 RSA/SHA256 Signature, key ID
 f4a80eb5: NOKEY
Public key for net-tools-2.0-0.24.20131004git.el7.i686.rpm is not installed
net-tools-2.0-0.24.20131004git.el7.i686.rpm                                 | 306 kB  00:00:41
Retrieving key from file:///etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7
Importing GPG key 0xF4A80EB5:
 Userid     : "CentOS-7 Key (CentOS 7 Official Signing Key) <security@centos.org>"
 Fingerprint: 6341 ab27 53d7 8a78 a7c2 7bb1 24c6 a8a7 f4a8 0eb5
 Package    : centos-release-7-2.1511.el7.centos.2.9.i686 (@anaconda)
 From       : /etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
Warning: RPMDB altered outside of yum.
  Installing : net-tools-2.0-0.24.20131004git.el7.i686                                        1/1
  Verifying  : net-tools-2.0-0.24.20131004git.el7.i686                                        1/1

Installed:
  net-tools.i686 0:2.0-0.24.20131004git.el7

Complete!
[root@test4 ~]# _
```

安装后ifconfig 命令可以正常使用。此时使用castool 就可以正常修改ip了



```
[root@test4 ~]# ifconfig -a
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 172.31.6.223  netmask 255.255.255.0  broadcast 172.31.6.255
        inet6 fe80::f816:3eff:fe78:df56  prefixlen 64  scopeid 0x20<link>
        ether fa:16:3e:78:df:56  txqueuelen 1000  (Ethernet)
        RX packets 311396  bytes 38046947 (36.2 MiB)
        RX errors 0  dropped 331  overruns 0  frame 0
        TX packets 9397  bytes 666814 (651.1 KiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        inet6 ::1  prefixlen 128  scopeid 0x10<host>
        loop  txqueuelen 0  (Local Loopback)
        RX packets 0  bytes 0 (0.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 0  bytes 0 (0.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

[root@test4 ~]#
```

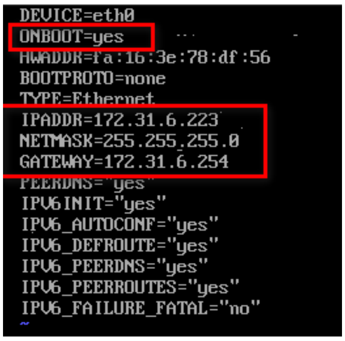
情况2：如果此时虚拟机不能联网，可以直接去下载工具包上传到虚机里手动安装。或者可以先手动修改网卡的配置文件(ifconfig不能用，先用ip addr命令查看网卡信息)，先把IP等信息配置上再重启network服务。

vi /etc/sysconfig/network-scripts/ifcfg-eth0

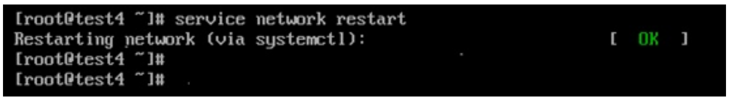
实际环境中的对应网卡以ip addr查看为准，这里是eth0。OnBOOT=yes，ip网关等信息自行配好。

修改好以后重启network服务！！！

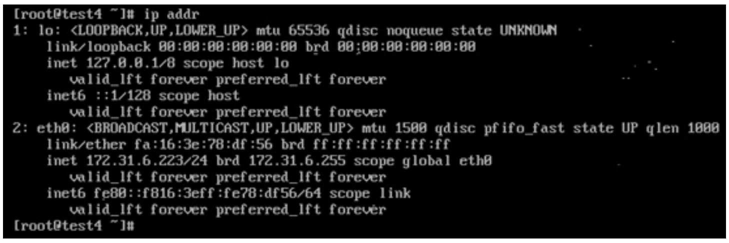
此时ip addr就可以看到你手动添加的网络配置了。后续就可以按照联网状态下的步骤直接安装net-tools.



```
DEVICE=eth0
ONBOOT=yes
HWADDR=fa:16:3e:78:df:56
BOOTPROTO=none
TYPE=Ethernet
IPADDR=172.31.6.223
NETMASK=255.255.255.0
GATEWAY=172.31.6.254
PEERDNS="yes"
IPV6INIT="yes"
IPV6_AUTOCONF="yes"
IPV6_DEFROUTE="yes"
IPV6_PEERDNS="yes"
IPV6_PEERROUTES="yes"
IPV6_FAILURE_FATAL="no"
~
```



```
[root@test4 ~]# service network restart
Restarting network (via systemctl):                          [  OK  ]
[root@test4 ~]#
[root@test4 ~]#
```



```
[root@test4 ~]# ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP qlen 1000
    link/ether fa:16:3e:78:df:56 brd ff:ff:ff:ff:ff:ff
    inet 172.31.6.223/24 brd 172.31.6.255 scope global eth0
       valid_lft forever preferred_lft forever
    inet6 fe80::f816:3eff:fe78:df56/64 scope link
       valid_lft forever preferred_lft forever
[root@test4 ~]#
```

附件下载：【经验案例】centos7最小化安装导致castool配置ip下发失败。.pdf