Subject: *RESOLVED* Using dhcpd within VE without relay agent possible?
Posted by sebastian.esser on Mon, 16 Jul 2007 07:55:14 GMT
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Hi!

I'm trying to get dhcpd working within a VE.
After configuring an virtual ethernet device and setting up /etc/dhcpd.conf the server comes up without any error.

Unfortunately no client receives a ip address from the dhcp daemon. I suppose the only connection between the VE and the linked network is the hardware node's routing table, which doesn't forward broadcast messages.

Does anyone know if there is any way to get the dhcp daemon operate proberly within a VE without using an DHCP relay agent?

Thanks in advance

Sebastian

Subject: Re: Using dhcpd within VE without relay agent possible?
Posted by Vasily Tarasov on Mon, 16 Jul 2007 08:20:14 GMT
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Hello,

In your scenario you should create a bridge between your physical devices and veths on HN.

Some information about bridges is here:
http://wiki.openvz.org/Virtual_Ethernet_device#Create_bridge _device

When you'll set a DHCP-server inside the VE up, it'll be great if you'll write an article about it at http://wiki.openvz.org

Thank you!
Vasily

Subject: Re: Using dhcpd within VE without relay agent possible?
Posted by sebastian.esser on Mon, 16 Jul 2007 08:35:44 GMT
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Hello Vasily,

thank you for the quick answer.

I hoped for a way without actions on the HN's side

Sure, as soon as i've making up an operating dhcpd wihtin my VE, i'll write down a short
procedure instruction

Bye
Sebastian

Subject: Re: Using dhcpd within VE without relay agent possible?
Posted by sebastian.esser on Tue, 17 Jul 2007 14:37:38 GMT
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I decided against the ethernet bridge. I need a more transparent way, which implements an easy
mechanismn to work with offline migrations. Thus I choose the use of a DHCP Relay Agent.

Here's my workaround:
Every HN which shall be able to shelter a VE with a running DHCP daemon inside has to be
equipped with a proper DHCP Relay Agent.
On CentOS 4 these two services (dhcpd and dhcrelay) are provided through the RPM package
dhcp

This scenario allows only one VE with an DHCP daemon per HN and only one VE with DHCP
daemon per group of HNs. The latter constraint could be removed. E.g. by modifying the "mount"
Action Script /etc/vz/conf/101.mount in a manner that the Relay Agent's configuration will be
overwritten. In that case you'll have to ensure there's no other VE with a running DHCP daemon
on the HN.

First I've set up an applicable VE with the DHCP daemon dhcpd...
vzctl create 101 \
  --ostemplate=centos-4-i386-minimal \
  --hostname=ve001.foo.bar

vzctl set 101 \
  --name=ve001 \
  --netif_add eth0 \
  --nameserver=192.168.1.1 \
  --searchdomain=foo.bar \
  --save

vzyum 101 install dhcp
vzctl exec 101 chkconfig --level 3 dhcpd on
vzctl exec 101 service dhcpd start

Quote:To get rid of the error message "/etc/init.d/dhcpd: line 17: [: =: unary operator expected"
while starting/stopping the daemon apply the following patch within the VE:
--- BEGIN /etc/init.d/dhcpd.patch ---
*** /etc/init.d/dhcpd.ORIGIN   2007-07-17 14:33:06.000000000 +0200

--- /etc/init.d/dhcpd	2007-07-17 14:33:36.000000000 +0200
****
*** 15,19 ****

  # Check that networking is up.
! [${NETWORKING} = "no"] && exit 0

  [-f /usr/sbin/dhcpd] || exit 0
--- 15,19 ----

  # Check that networking is up.
! ["${NETWORKING}" = "no"] && exit 0

  [-f /usr/sbin/dhcpd] || exit 0
--- END /etc/init.d/dhcpd.patch ---
After reading the advices about virtual ethernet devices on http://wiki.openvz.org/Veth (especially
http://wiki.openvz.org/Veth#Making_a_veth-device_persistent and
http://wiki.openvz.org/Veth#Simple_configuration_with_virtua l_ethernet_device) I've modified
the VE's main configuration file,...
--- SNIP /etc/vz/conf/101.conf ---
CONFIG_CUSTOMIZED="yes"
VETH_IP_ADDRESS="192.168.1.2"
--- END /etc/vz/conf/101.conf ---
created a "start" Action Script...
--- BEGIN /etc/vz/conf/101.start ---
#!/bin/bash

#
OpenVZ Action Script 101.start
#

Setup network devices
/sbin/ifconfig eth0 0
/sbin/ip addr add 192.168.1.2 dev eth0
/sbin/ip route add default dev eth0
--- END /etc/vz/conf/101.start ---

and created an "mount" Action Script...
--- BEGIN /etc/vz/conf/101.mount ---
#!/bin/bash

#
OpenVZ Action Script 101.mount
#

[-f /etc/sysconfig/vz] || exit 1
[-f $VE_CONFFILE] || exit 1

```
. /etc/sysconfig/vz
. $VE_CONFFILE

/bin/echo 1 > /proc/sys/net/ipv4/conf/eth0/forwarding
/bin/echo 1 > /proc/sys/net/ipv4/conf/eth0/proxy_arp

# Define / get checksums for comparing
declare DHCRELAY_MD5SUM_PATCHED="1d50d252d6501fede6aa2dcca3bc1138
/etc/sysconfig/dhcrelay"
declare DHCRELAY_MD5SUM_CURRENT=$(md5sum /etc/sysconfig/dhcrelay)

# Apply the patch if dhcrelay isn't already configured.
# If the patching fails (maybe modified otherwise) exit with
# return code 127.
if [[ "$DHCRELAY_MD5SUM_CURRENT" != "$DHCRELAY_MD5SUM_PATCHED" ]]
then
  (patch -Np0 || exit 127) <<- \
 EOF
 *** /etc/sysconfig/dhcrelay.ORIGIN 2007-07-19 12:01:16.000000000 +0200
 --- /etc/sysconfig/dhcrelay 2007-07-19 12:02:10.000000000 +0200
 ***************
 *** 1,3 ****
   # Command line options here
 ! INTERFACES=""
 ! DHCPSERVERS=""
 --- 1,3 ----
   # Command line options here
 ! INTERFACES="eth0 veth${VEID}.0"
 ! DHCPSERVERS="$HOSTNAME"
 EOF
fi

# Start the DHCP Relay Agent on the HN after waiting 5 seconds
# to ensure the VE has been mounted and is running.
(sleep 5; echo; service dhcrelay start) &
--- END /etc/vz/conf/101.mount ---
```

The "mount" Action Script prepares the virtual ethernet device and establishes (if necessary) the prober configuration for the DHCP Relay Agent. The virtual ethernet device has to exist before the Relay Agent starts. That's why the start of the Relay Agent will be put into the background with a delay.

```
--- BEGIN /etc/vz/conf/101.umount ---
#!/bin/bash

#
# OpenVZ Action Script 101.umount
#
```

```
[ -f /etc/sysconfig/vz ] || exit 1
[ -f $VE_CONFFILE ] || exit 1

. /etc/sysconfig/vz
. $VE_CONFFILE

service dhcrelay stop || :
```
--- END /etc/vz/conf/101.umount ---
Now it's possible to migrate this VE in offline mode:
vzmigrate -r yes target.foo.bar 101

Subject: Re: Using dhcpd within VE without relay agent possible?
Posted by Vasily Tarasov on Fri, 20 Jul 2007 08:39:37 GMT
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Hello,

Thank you for this information! It is very useful and can help a lot of users.

Probably, I can ask you to create an article at http://wiki.openvz.org based on your post?

Thank you very much,
Vasily

Subject: Re: Using dhcpd within VE without relay agent possible?
Posted by sebastian.esser on Tue, 24 Jul 2007 12:20:39 GMT
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Hello Vasily,

I'll publish my experiences about setup a working dhcp daemon whithin a VE to the Wiki as soon
as my current projects give me a little more time.

I'll promise to keep it in mind :)

Bye
Sebastian

```