

FUJITSU Cloud Service S5 Setup Virtual IP Addressing using UCARP on CentOS Servers

This guide details the steps required to Setup and Configure Virtual IP Addressing using UCARP on CentOS Servers

Introduction

The UCARP CentOS service enables provides a basic IP failover solution by creating a common, Virtual IP Address for multiple hosts (VM's).

Administrators have the ability to create additional Users within their Contract. These Users are called **Resource Controllers** and **Administrators** can set individual roles and privileges for them.

Assumptions

- Familiarity with the FUJITSU Cloud Service S5 Portal basic configuration and administration tasks.
- Familiarity with CentOS and associated Server Administration & Configuration tasks
- Familiarity with the "vi" editor
- SSH CentOS server connectivity is available (for example, using the **putty** service and putty psftp client)
- 2 or more CentOS Server VM's have been created to share the created Virtual IP Address
- The CentOS yum update service has been configured to enable CentOS updates and package installation (see **FUJITSU Cloud Service S5 - Setup yum Software Package Manager with CentOS Servers**)
- DNS and the Firewall are configured to enable internet connectivity (required to download the ucarp rpm)

Preparation & Prerequisites

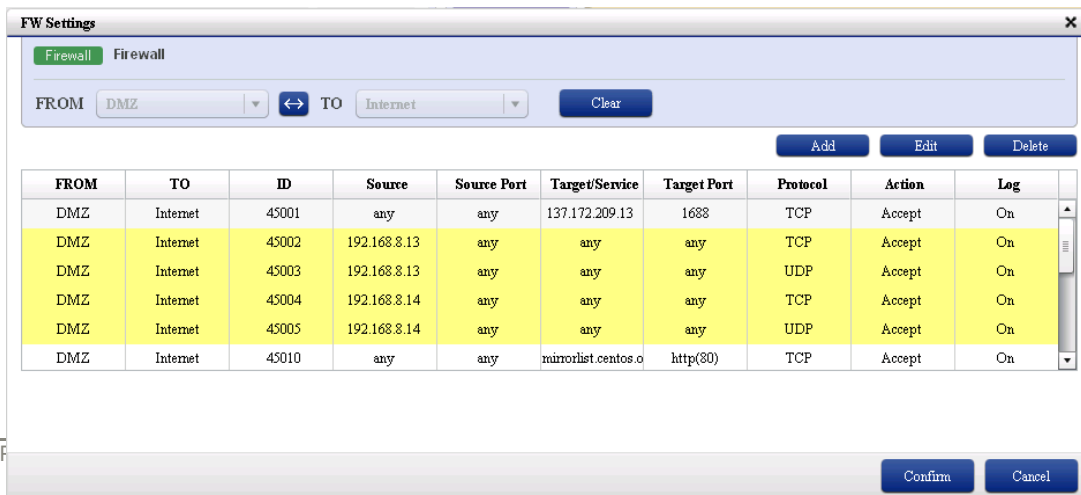
For this example, 2 CentOS 5.6 32-bit Virtual Machines have been prepared within the VSYS DMZ:

CentOS5.6#1 192.168.8.13
CentOS5.6#2 192.168.8.14

Since FUJITSU Cloud Service S5 automatically assigns static private IP to VM's using DHCP as they are assigned, a Virtual IP Address (VIP) towards the top of the subnet range must be chosen. Recommended FUJITSU Cloud Service S5 "best practice" is to allocate any static IP addresses in the range 192.xxx.xxx.200 – 192.xxx.xxx.255. For this example the VIP Address to be utilised will be **192.168.8.200**

Setup Firewall Rules for ucarp Virtual Machines

Ensure that the Firewall is configured to enable outbound traffic from the ucarp VM's to the Internet. For this example, outbound TCP and UDP connectivity was enabled for both hosts (192.168.8.13 & 172.168.8.14):



Setup UCARP VIP Addressing

On each server to be configured (CentOS5.6#1 & CentOS5.6#2) and associated with the VIP Address, perform Steps 1-8 below:

1. Login as **root**
2. Test Internet & UCARP Download Source connectivity using **nslookup fedoraproject.org**:

```
[root@VM-42N-S-0009 ~]# nslookup fedoraproject.org
Server:      137.172.209.9
Address:     137.172.209.9#53

Non-authoritative answer:
Name:   fedoraproject.org
Address: 85.236.55.6
Name:   fedoraproject.org
Address: 140.211.169.197
Name:   fedoraproject.org
Address: 152.19.134.146
Name:   fedoraproject.org
Address: 209.132.181.16
Name:   fedoraproject.org
Address: 213.175.193.206
Name:   fedoraproject.org
Address: 66.35.62.166
Name:   fedoraproject.org
Address: 67.203.2.67
Name:   fedoraproject.org
Address: 80.239.156.215
```

3. UCARP is a part of the EPEL (Extra Packages for Enterprise Linux) rpm package and must be downloaded from fedoraproject.org to the **/tmp** directory

For Centos 5 use the command: `su -c 'rpm -Uvh http://download.fedoraproject.org/pub/epel/5/i386/epel-release-5-4.noarch.rpm'`
 for Centos 6, use the command: `su -c 'rpm -Uvh http://download.fedoraproject.org/pub/epel/6/i386/epel-release-6-7.noarch.rpm'`

```
[root@VM-42N-S-0010 ~]# cd /tmp
[root@VM-42N-S-0010 tmp]# su -c 'rpm -Uvh http://download.fedoraproject.org/pub/epel/6/i386/epel-release-6-7.noarch.rpm'
Retrieving http://download.fedoraproject.org/pub/epel/6/i386/epel-release-6-7.noarch.rpm
warning: /var/tmp/rpm-tmp.fLXt7C: Header V3 RSA/SHA256 Signature, key ID 0608b895: NOKEY
Preparing... ##### [100%]
 1:epel-release ##### [100%]
[root@VM-42N-S-0010 tmp]#
```

4. Install **ucarp** using `yum -y install ucarp`:

```
[root@VM-42N-S-0010 tmp]# yum -y install ucarp
Loaded plugins: fastestmirror, refresh-packagekit, security
Determining fastest mirrors
epel/metalink | 3.1 kB 00:00
 * base: mirror.optus.net
 * epel: mirror.optus.net
 * extras: mirror.optus.net
 * updates: mirror.mel.bkb.net.au
base | 3.7 kB 00:00
base/primary_db | 3.5 MB 00:00
epel | 4.0 kB 00:00
epel/primary_db | 3.8 MB 00:00
extras | 3.0 kB 00:00
extras/primary_db | 6.4 kB 00:00
updates | 3.5 kB 00:00
updates/primary_db | 1.1 MB 00:00
Setting up Install Process
Resolving Dependencies
--> Running transaction check
--> Package ucarp.i686 0:1.5.2-1.el6 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

=====
Package Arch Version Repository Size
=====
Installing:
ucarp i686 1.5.2-1.el6 epel 32 k

Transaction Summary
=====
Install 1 Package(s)

Total download size: 32 k
Installed size: 71 k
Downloading Packages:
ucarp-1.5.2-1.el6.i686.rpm | 32 kB 00:00
warning: rpmts_HdrFromFdno: Header V3 RSA/SHA256 Signature, key ID 0608b895: NOKEY
Retrieving key from file:///etc/pki/rpm-gpg/RPM-GPG-KEY-EPEL-6
Importing GPG key 0x0608B895:
 Userid : EPEL (6) <epel@fedoraproject.org>
 Package: epel-release-6-7.noarch (installed)
 From : /etc/pki/rpm-gpg/RPM-GPG-KEY-EPEL-6
Running rpm_check_debug
Running Transaction Test
Transaction Test Succeeded
Running Transaction
Warning: RPMDB altered outside of yum.
Installing : ucarp-1.5.2-1.el6.i686 1/1

Installed:
ucarp.i686 0:1.5.2-1.el6

Complete!
[root@VM-42N-S-0010 tmp]#
```

- Copy the UCARP configuration template to a new configuration file vip-001.conf:

```
[root@localhost ~]# cd /etc/ucarp
[root@localhost ucarp]# cp -p vip-001.conf.example vip-001.conf
[root@localhost ucarp]#
```

6. Edit the configuration file `vip-001.conf` using `vi` as shown below (CentOS5.6#1=172.16.20.14, CentOS5.6#2=172.16.20.15):

```
# Virtual IP configuration file for UCARP
# The number (from 001 to 255) in the name of the file is the identifier

# In the simple scenario, you want a single virtual IP address from the _same_
# network to be taken over by one of the routers.
VIP_ADDRESS="192.168.8.200"

# In more complex scenarios, check the "vip-common" file for values to override
# and how to add options.

# Specify a Password for this VIP
PASSWORD="Pwd123"
BIND_INTERFACE="eth0"

# Specify the actual IP Address of this Virtual Machine
SOURCE_ADDRESS="192.168.8.14"
```

7. # UCARP Options

```
OPTIONS="--shutdown --preempt"
```

```
[root@VM-42N-S-0010 ucarp]# service ucarp start
Starting common address redundancy protocol daemon:      [ OK ]
[root@VM-42N-S-0010 ucarp]# ping 192.168.8.200
PING 192.168.8.200 (192.168.8.200) 56(84) bytes of data.
 64 bytes from 192.168.8.200: icmp_seq=1 ttl=64 time=0.025 ms
 64 bytes from 192.168.8.200: icmp_seq=2 ttl=64 time=0.014 ms
 64 bytes from 192.168.8.200: icmp_seq=3 ttl=64 time=0.013 ms
 64 bytes from 192.168.8.200: icmp_seq=4 ttl=64 time=0.013 ms
 64 bytes from 192.168.8.200: icmp_seq=5 ttl=64 time=0.013 ms
 64 bytes from 192.168.8.200: icmp_seq=6 ttl=64 time=0.013 ms
^C
--- 192.168.8.200 ping statistics ---
 6 packets transmitted, 6 received, 0% packet loss, time 5425ms
 rtt min/avg/max/mdev = 0.013/0.015/0.025/0.005 ms
[root@VM-42N-S-0010 ucarp]#
```

8. UCARP configuration is complete for this VM instance.

Starting & Stopping the UCARP Service

The ucarp service is started and stopped using the following:

```
service ucarp start
service ucarp stop
```

Enabling External Connectivity to with the VIP Address

In order to enable external connectivity, amend the FW rules as appropriate.

Contact

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Setup of the UCARP VIP Addressing Service is now complete