

使用 VBox 安装 Oracle Database 12c Flex Cluster for OEL 5.8

第 3 部分 准备网络环境 (磁盘和 yum 源)

本系列为 [Lunar\(www.lunar2013.com\)](http://www.lunar2013.com) 原创，一共 5 篇，分别为：

[第 1 部分 环境介绍](#)

[第 2 部分 前期准备工作](#)

[第 3 部分 准备网络环境](#)

[第 4 部分 开始安装](#)

[第 5 部分 总结](#)

先看下官方文档，以下是相关需求：

Check	Task
	<p>Public Network Hardware:</p> <ul style="list-style-type: none">• Public network switch (redundant switches recommended) connected to a public gateway and to the public interface ports for each cluster member node.• Ethernet interface card (redundant network cards recommended, bonded as one Ethernet port name).• The switches and network interfaces must be at least 1 GbE.• The network protocol is TCP/IP.
	<p>Private Network Hardware for the Interconnect</p> <ul style="list-style-type: none">• Private dedicated network switches (redundant switches recommended), connected to the private interface ports for each cluster member node. NOTE: If you have more than one private network interface card for each server, then Oracle Clusterware automatically associates these interfaces for the private network using Grid Interprocess Communication (GIPC) and Grid Infrastructure Redundant Interconnect, also known as Cluster High Availability IP (HAIP).• The switches and network interface adapters must be at least 1 GbE.• The interconnect must support the user datagram protocol (UDP).
	<p>Oracle Flex ASM Network Hardware</p> <p>Oracle Flex ASM can use either the same private networks as Oracle Clusterware, or use its own dedicated private networks. Each network can be classified PUBLIC or PRIVATE+ASM</p>

Check	Task
	<p>or PRIVATE or ASM. ASM networks use the TCP protocol.</p>
	<p>Cluster Names and Addresses: Determine and Configure the following names and addresses for the cluster</p> <ul style="list-style-type: none"> • Cluster name: Decide a name for the cluster, and be prepared to enter it during installation. The cluster name should have the following characteristics: Globally unique throughout your host domain. At least one character long and less than or equal to 15 characters long. Consist of the same character set used for host names, in accordance with RFC 1123: Hyphens (-), and single-byte alphanumeric characters (a to z, A to Z, and 0 to 9). If you use third-party vendor clusterware, then Oracle recommends that you use the vendor cluster name. • Grid Naming Service Virtual IP Address (GNS VIP): If you plan to use GNS, then configure a GNS name and fixed address on the DNS for the GNS VIP, and configure a subdomain on your DNS delegated to the GNS VIP for resolution of cluster addresses. GNS domain delegation is mandatory with dynamic public networks (DHCP, autoconfiguration). • Single Client Access Name (SCAN) and addresses Using Grid Naming Service Resolution: Do not configure SCAN names and addresses in your DNS. SCANs are managed by GNS. 我这次用的这个 Using Manual Configuration and DNS resolution: Configure a SCAN name to resolve to three addresses on the domain name service (DNS). 这个东西跟 11.2 的应该是一致的
	<p>Standard or Hub Node Public, Private and Virtual IP names and Addresses: If you are not using GNS, and you are configuring a Standard cluster, then configure the following for each Hub Node:</p> <ul style="list-style-type: none"> • Public node name and address, configured on the DNS and in <code>/etc/hosts</code> (for example, <code>node1.example.com</code>, address <code>192.0.2.10</code>). The public node name should be the primary host name of each node, which is the name displayed by the <code>hostname</code> command. • Private node address, configured on the private interface for each node. The private subnet that the private interfaces use must connect all the nodes you intend to have as cluster members. Oracle recommends that the network you select for the private network uses an address range defined as private by RFC 1918. • Public node virtual IP name and address (for example, <code>node1-vip.example.com</code>, address <code>192.0.2.11</code>). If you are not using GNS, then determine a virtual host name for each node. A virtual host name is a public node name that is used to reroute client requests sent to the node if the node is down. Oracle Database uses VIPs for client-to-database connections, so the VIP address must be publicly accessible. Oracle recommends that you provide a name in the format <code>hostname-vip</code>. For example: <code>myclstr2-vip</code>.

配置 DHCP DNS:

```
[root@lunar1 ~]# rpm -qa dhcp
dhcp-3.0.5-31.el5
[root@lunar1 ~]#
[root@lunar1 ~]# yum install bind
Loaded plugins: rhnplugin, security
This system is not registered with ULN.
ULN support will be disabled.
Setting up Install Process
Package 30:bind-9.3.6-20.P1.el5.x86_64 already installed and latest version
Nothing to do
[root@lunar1 ~]#
[root@lunar1 ~]# yum install caching-nameserver
Loaded plugins: rhnplugin, security
This system is not registered with ULN.
ULN support will be disabled.
Setting up Install Process
Resolving Dependencies
--> Running transaction check
---> Package caching-nameserver.x86_64 30:9.3.6-20.P1.el5 set to be updated
--> Finished Dependency Resolution
```

Dependencies Resolved

```
=====
=====
```

Package	Version	Arch	Repository
	Size		

```
=====
=====
```

Installing:

```
  caching-nameserver                x86_64
30:9.3.6-20.P1.el5                  yum
  63 k
```

Transaction Summary

```
=====
=====
```

Install	1 Package(s)
Upgrade	0 Package(s)

Total download size: 63 k

Is this ok [y/N]: Y

Downloading Packages:

Running rpm_check_debug

Running Transaction Test

Finished Transaction Test

Transaction Test Succeeded

Running Transaction

Installing :
caching-nameserver

1/1

Installed:

caching-nameserver.x86_64
30:9.3.6-20.P1.el5

Complete!

[root@lunar1 ~]#

[root@lunar1 ~]# rpm -ql bind

/etc/dbus-1/system.d/named.conf

/etc/logrotate.d/named

/etc/named.conf

/etc/rc.d/init.d/named

/etc/rndc.conf

/etc/rndc.key

/etc/sysconfig/named

/usr/sbin/bind-chroot-admin

/usr/sbin/dns-keygen

/usr/sbin/dnssec-keygen

/usr/sbin/dnssec-signzone

/usr/sbin/lwresd

/usr/sbin/named

/usr/sbin/named-bootconf

/usr/sbin/named-checkconf

/usr/sbin/named-checkzone

/usr/sbin/namedGetForwarders

/usr/sbin/namedSetForwarders

/usr/sbin/rndc

/usr/sbin/rndc-confgen

/usr/share/dbus-1/services/named.service

/usr/share/doc/bind-9.3.6

/usr/share/doc/bind-9.3.6/CHANGES

/usr/share/doc/bind-9.3.6/COPYRIGHT

/usr/share/doc/bind-9.3.6/README

/usr/share/doc/bind-9.3.6/README.DBUS

/usr/share/doc/bind-9.3.6/arm

/usr/share/doc/bind-9.3.6/arm/Bv9ARM-book.xml
/usr/share/doc/bind-9.3.6/arm/Bv9ARM.ch01.html
/usr/share/doc/bind-9.3.6/arm/Bv9ARM.ch02.html
/usr/share/doc/bind-9.3.6/arm/Bv9ARM.ch03.html
/usr/share/doc/bind-9.3.6/arm/Bv9ARM.ch04.html
/usr/share/doc/bind-9.3.6/arm/Bv9ARM.ch05.html
/usr/share/doc/bind-9.3.6/arm/Bv9ARM.ch06.html
/usr/share/doc/bind-9.3.6/arm/Bv9ARM.ch07.html
/usr/share/doc/bind-9.3.6/arm/Bv9ARM.ch08.html
/usr/share/doc/bind-9.3.6/arm/Bv9ARM.ch09.html
/usr/share/doc/bind-9.3.6/arm/Bv9ARM.html
/usr/share/doc/bind-9.3.6/arm/Bv9ARM.pdf
/usr/share/doc/bind-9.3.6/arm/Makefile
/usr/share/doc/bind-9.3.6/arm/Makefile.in
/usr/share/doc/bind-9.3.6/arm/README-SGML
/usr/share/doc/bind-9.3.6/arm/latex-fixup.pl
/usr/share/doc/bind-9.3.6/misc
/usr/share/doc/bind-9.3.6/misc/Makefile
/usr/share/doc/bind-9.3.6/misc/Makefile.in
/usr/share/doc/bind-9.3.6/misc/dnssec
/usr/share/doc/bind-9.3.6/misc/format-options.pl
/usr/share/doc/bind-9.3.6/misc/ipv6
/usr/share/doc/bind-9.3.6/misc/migration
/usr/share/doc/bind-9.3.6/misc/migration-4to9
/usr/share/doc/bind-9.3.6/misc/options
/usr/share/doc/bind-9.3.6/misc/options.edns
/usr/share/doc/bind-9.3.6/misc/rfc-compliance
/usr/share/doc/bind-9.3.6/misc/roadmap
/usr/share/doc/bind-9.3.6/misc/sdb
/usr/share/doc/bind-9.3.6/misc/sort-options.pl
/usr/share/doc/bind-9.3.6/sample
/usr/share/doc/bind-9.3.6/sample/etc
/usr/share/doc/bind-9.3.6/sample/etc/named.conf
/usr/share/doc/bind-9.3.6/sample/etc/named.rfc1912.zones
/usr/share/doc/bind-9.3.6/sample/etc/named.root.hints
/usr/share/doc/bind-9.3.6/sample/etc/rndc.conf
/usr/share/doc/bind-9.3.6/sample/var
/usr/share/doc/bind-9.3.6/sample/var/named
/usr/share/doc/bind-9.3.6/sample/var/named/data
/usr/share/doc/bind-9.3.6/sample/var/named/localdomain.zone
/usr/share/doc/bind-9.3.6/sample/var/named/localhost.zone
/usr/share/doc/bind-9.3.6/sample/var/named/my.external.zone.db
/usr/share/doc/bind-9.3.6/sample/var/named/my.internal.zone.db
/usr/share/doc/bind-9.3.6/sample/var/named/named.broadcast

```
/usr/share/doc/bind-9.3.6/sample/var/named/named.ip6.local
/usr/share/doc/bind-9.3.6/sample/var/named/named.local
/usr/share/doc/bind-9.3.6/sample/var/named/named.root
/usr/share/doc/bind-9.3.6/sample/var/named/named.zero
/usr/share/doc/bind-9.3.6/sample/var/named/slaves
/usr/share/doc/bind-9.3.6/sample/var/named/slaves/my.ddns.internal.zone.db
/usr/share/doc/bind-9.3.6/sample/var/named/slaves/my.slave.internal.zone.db
/usr/share/man/man5/named.conf.5.gz
/usr/share/man/man5/rndc.conf.5.gz
/usr/share/man/man8/dnssec-keygen.8.gz
/usr/share/man/man8/dnssec-signzone.8.gz
/usr/share/man/man8/lwresd.8.gz
/usr/share/man/man8/named-checkconf.8.gz
/usr/share/man/man8/named-checkzone.8.gz
/usr/share/man/man8/named.8.gz
/usr/share/man/man8/rndc-confgen.8.gz
/usr/share/man/man8/rndc.8.gz
/var/log/named.log
/var/named
/var/named/data
/var/named/slaves
/var/run/named
[root@lunar1 ~]#
```

```
[root@lunar1 ~]# touch /etc/named.conf
[root@lunar1 ~]# ls -l /etc/named.*
-rw-r----- 1 root named 1230 Dec 20 2011 /etc/named.caching-nameserver.conf
-rw-r--r-- 1 root root 0 Aug 27 10:19 /etc/named.conf
-rw-r----- 1 root named 955 Dec 20 2011 /etc/named.rfc1912.zones
[root@lunar1 ~]#
```

```
=====
=====
配置 DHCP 服务:
=====
=====
```

```
[root@lunar1 ~]# rpm --query dhcp
dhcp-3.0.5-31.el5
[root@lunar1 ~]#

[root@lunar1 ~]# cat /etc/dhcpd.conf
#
# DHCP Server Configuration file.
# see /usr/share/doc/dhcp*/dhcpd.conf.sample
```

```
#
ddns-update-style interim;
ignore client-updates;
subnet 192.168.69.0 netmask 255.255.255.0 {
    option
routers                                192.168.69.1;
    # Default gateway to be used by DHCP clients
    option
subnet-mask                             255.255.255.0;                                #
Default subnet mask to be used by DHCP clients.
    option
ip-forwarding                            off;
    # Do not forward DHCP requests.
    option
broadcast-address                        192.168.69.255;                                # Default
broadcast address to be used by DHCP client.
    option domain-name                    "oralab.example.com";
    option
domain-name-servers                      192.168.69.101;                                # IP
address of the DNS server. In this document it will be oralab
    option
time-offset                              -19000;
    # Central Standard Time
    option
ntp-servers                              0.pool.ntp.org;                                #
Default NTP server to be used by DHCP clients
    range                                192.168.69.2
192.168.69.254;    # Range of IP addresses that can be issued to DHCP client
    default-lease-time                    21600;
    # Amount of time in seconds that a client may keep the IP address
    max-lease-time                        43200;
}
```

```
[root@lunar1 ~]#
[root@lunar1 ~]# service dhcpd restart
Shutting down dhcpd: [ OK ]
Starting dhcpd: [ OK ]
[root@lunar1 ~]#
[root@lunar1 ~]# chkconfig dhcpd on
[root@lunar1 ~]# chkconfig --list dhcpd
dhcpd          0:off    1:off    2:on     3:on     4:on     5:on     6:
off
[root@lunar1 ~]#
```

DHCP 的启动日志:

```
Aug 27 10:50:42 lunar1 dhcpd: Internet Systems Consortium DHCP Server V3.0.5-RedHat
Aug 27 10:50:42 lunar1 dhcpd: Copyright 2004-2006 Internet Systems Consortium.
Aug 27 10:50:42 lunar1 dhcpd: All rights reserved.
Aug 27 10:50:42 lunar1 dhcpd: For info, please visit http://www.isc.org/sw/dhcp/
Aug 27 10:50:42 lunar1 dhcpd: Wrote 0 leases to leases file.
Aug 27 10:50:42 lunar1 dhcpd: Listening on LPF/eth2/08:00:27:3f:b0:77/192.168.69/24
Aug 27 10:50:42 lunar1 dhcpd: Sending on      LPF/eth2/08:00:27:3f:b0:77/192.168.69/24
Aug 27 10:50:42 lunar1 dhcpd:
Aug 27 10:50:42 lunar1 dhcpd: No subnet declaration for eth1 (192.168.55.101).
Aug 27 10:50:42 lunar1 dhcpd: ** Ignoring requests on eth1.  If this is not what
Aug 27 10:50:42 lunar1 dhcpd:      you want, please write a subnet declaration
Aug 27 10:50:42 lunar1 dhcpd:      in your dhcpd.conf file for the network segment
Aug 27 10:50:42 lunar1 dhcpd:      to which interface eth1 is attached. **
Aug 27 10:50:42 lunar1 dhcpd:
Aug 27 10:50:42 lunar1 dhcpd:
Aug 27 10:50:42 lunar1 dhcpd: No subnet declaration for eth0 (192.168.14.101).
Aug 27 10:50:42 lunar1 dhcpd: ** Ignoring requests on eth0.  If this is not what
Aug 27 10:50:42 lunar1 dhcpd:      you want, please write a subnet declaration
Aug 27 10:50:42 lunar1 dhcpd:      in your dhcpd.conf file for the network segment
Aug 27 10:50:42 lunar1 dhcpd:      to which interface eth0 is attached. **
Aug 27 10:50:42 lunar1 dhcpd:
Aug 27 10:50:42 lunar1 dhcpd:
Aug 27 10:50:42 lunar1 dhcpd: Sending on      Socket/fallback/fallback-net
```

DHCP 的 restart 日志:

```
Aug 27 10:51:54 lunar1 dhcpd: Copyright 2004-2006 Internet Systems Consortium.
Aug 27 10:51:54 lunar1 dhcpd: All rights reserved.
Aug 27 10:51:54 lunar1 dhcpd: For info, please visit http://www.isc.org/sw/dhcp/
Aug 27 10:51:54 lunar1 dhcpd: Wrote 0 leases to leases file.
Aug 27 10:51:54 lunar1 dhcpd: Listening on LPF/eth2/08:00:27:3f:b0:77/192.168.69/24
Aug 27 10:51:54 lunar1 dhcpd: Sending on      LPF/eth2/08:00:27:3f:b0:77/192.168.69/24
Aug 27 10:51:54 lunar1 dhcpd:
Aug 27 10:51:54 lunar1 dhcpd: No subnet declaration for eth1 (192.168.55.101).
Aug 27 10:51:54 lunar1 dhcpd: ** Ignoring requests on eth1.  If this is not what
Aug 27 10:51:54 lunar1 dhcpd:      you want, please write a subnet declaration
Aug 27 10:51:54 lunar1 dhcpd:      in your dhcpd.conf file for the network segment
Aug 27 10:51:54 lunar1 dhcpd:      to which interface eth1 is attached. **
Aug 27 10:51:54 lunar1 dhcpd:
Aug 27 10:51:54 lunar1 dhcpd:
Aug 27 10:51:54 lunar1 dhcpd: No subnet declaration for eth0 (192.168.14.101).
Aug 27 10:51:54 lunar1 dhcpd: ** Ignoring requests on eth0.  If this is not what
Aug 27 10:51:54 lunar1 dhcpd:      you want, please write a subnet declaration
Aug 27 10:51:54 lunar1 dhcpd:      in your dhcpd.conf file for the network segment
Aug 27 10:51:54 lunar1 dhcpd:      to which interface eth0 is attached. **
```


Aug 27 10:51:54 lunar1 dhcpd:

Aug 27 10:51:54 lunar1 dhcpd: Sending on Socket/fallback/fallback-net

配置 DNS

安装 bind:

```
[root@lunar1 ~]# yum install bind.x86_64 bind-chroot.x86_64 -y
```

Loaded plugins: rhnplugin, security

This system is not registered with ULN.

ULN support will be disabled.

Setting up Install Process

Package 30:bind-9.3.6-20.P1.el5.x86_64 already installed and latest version

Resolving Dependencies

--> Running transaction check

---> Package bind-chroot.x86_64 30:9.3.6-20.P1.el5 set to be updated

--> Finished Dependency Resolution

Dependencies Resolved

Package	Version	Size	Arch	Repository
---------	---------	------	------	------------

Installing:

bind-chroot			x86_64	
30:9.3.6-20.P1.el5			yum	
47 k				

Transaction Summary

Install	1 Package(s)
Upgrade	0 Package(s)

Total download size: 47 k

Downloading Packages:

Running rpm_check_debug

Running Transaction Test

Finished Transaction Test

Transaction Test Succeeded

Running Transaction

Installing :

bind-chroot

1/1

Installed:

bind-chroot.x86_64

30:9.3.6-20.P1.el5

Complete!

[root@lunar1 ~]#

```
=====
=====
配置 /var/named/chroot/etc/named.conf:
=====
=====
```

```
[root@lunar1 etc]# cat named.conf
//
// named.caching-nameserver.conf
//
// Provided by Red Hat caching-nameserver package to configure the
// ISC BIND named(8) DNS server as a caching only nameserver
// (as a localhost DNS resolver only).
//
// See /usr/share/doc/bind*/sample/ for example named configuration files.
//
// DO NOT EDIT THIS FILE - use system-config-bind or an editor
// to create named.conf - edits to this file will be lost on
// caching-nameserver package upgrade.
//
options {
    listen-on port 53 { any; };
    listen-on-v6 port 53 { ::1; };
    directory      "/var/named";           // Base directory for
named
```

```
dump-file          "/var/named/data/cache_dump.db";
statistics-file    "/var/named/data/named_stats.txt";
memstatistics-file "/var/named/data/named_mem_stats.txt";

// Those options should be used carefully because they disable port
// randomization
// query-source     port 53;
// query-source-v6  port 53;

allow-query        { any; };
allow-query-cache  { any; };
allow-transfer     {"none"};      // Slave serves that can pull zone transfer. Ban
everyone by default
};
logging {
    channel default_debug {
        file "data/named.run";
        severity dynamic;
    };
};
view localhost_resolver {
    match-clients      { any; };
    match-destinations { any; };
    recursion yes;
    include "/etc/named.zones";
};
[root@lunar1 etc]#

[root@lunar1 etc]# cat named.zones
zone "flex.com" IN {
    type master;
    file "flex.com.zone";
    allow-update { none; };
};

zone "69.168.192.in-addr.arpa" IN {
    type master;
    file "69.168.192.local";
    allow-update { none; };
};

[root@lunar1 etc]#
```

=====
=====
配置正反向解析:
=====

```
[root@lunar1 etc]# cd /var/named/chroot/var/named
[root@lunar1 named]# ll named.zero
-rw-r----- 1 root named 427 Dec 20 2011 named.zero
[root@lunar1 named]# ll named.local
-rw-r----- 1 root named 426 Dec 20 2011 named.local
[root@lunar1 named]# cp -p named.zero flex.com.zone
[root@lunar1 named]# cp -p named.local 69.168.192.local
[root@lunar1 named]#
```

编辑 flex.com.zone:

```
[root@lunar1 ~]# cd /var/named/chroot/var/named
[root@lunar1 named]# cat flex.com.zone
$TTL      86400
$ORIGIN flex.com.
@          IN SOA  dns.flex.com.      root.flex.com. (
                                42
                                ; serial (d. adams)
                                3H
                                ; refresh
                                15M
                                ; retry
                                1W
                                ; expiry
                                1D )
; minimum
      IN      NS       dns.flex.com.
dns    IN      A       192.168.69.101
gns    IN      A       192.168.69.102
grid   IN      NS       gns
$ORIGIN host.flex.com.
@      IN      NS       gns.flex.com.
[root@lunar1 named]#
```

编辑 69.168.192.local:

```
[root@lunar1 named]# cat 69.168.192.local
$TTL      86400
```

```
@          IN          SOA          dns.flex.com. root.flex.com.  (
                                                    1997022700 ;
Serial
                                                    28800      ;
Refresh
                                                    14400      ;
Retry
                                                    3600000    ;
Expire
                                                    86400     ) ;
Minimum
          IN          NS          dns.flex.com.
101      IN          PTR         dns.flex.com.
102      IN          PTR         gns.flex.com.
[root@lunar1 named]#
```

启动 DNS 服务:

```
[root@lunar1 named]# service named restart
Stopping named: [ OK ]
Starting named: [ OK ]
[root@lunar1 named]# chkconfig named on
[root@lunar1 named]# [root@lunar1 named]# chkconfig --list named
named          0:off    1:off    2:on     3:on     4:on     5:on     6:
off
[root@lunar1 named]#
```

编辑所有 RAC 节点的 /etc/resolv.conf 文件 (DNS client)

我这里使用 lunar1 作为 DNS GNS RAC 的第一个节点，都在这里了，o(∩_∩)o 哈哈:

```
[root@lunar1 named]# cat /etc/resolv.conf

# 13714588 add timeout, rotate, attempts to mitigate issues with poor or misconfigured single
DNS server
# timeout:n Initial timeout for a query to a nameserver. The default value is five seconds. The
maximum value is 30 seconds.
# For the second and successive rounds of queries, the resolver doubles the initial timeout and
is divided by the number
# of nameservers in the resolv.conf file.
option timeout:4
# attempts:n How many queries the resolver should send to each nameserver in the resolv.conf file
before it stops execution.
# The default value is 2. The maximum value is 5.
option attempts:2
```

```
# rotate Enables the resolver to use all the nameservers in the resolv.conf file, not just the first one.
```

```
option rotate
```

```
# Search domain and name server
```

```
search flex.com
```

```
# Commented it out, because OUI complains about it
```

```
#domain flex.com
```

```
nameserver 192.168.69.101
```

```
[root@lunar1 named]#
```

验证 dns 工作是否正常 (两个节点都做一下) :

检验正向解析:

```
[root@lunar1 named]# dig gns.flex.com
```

```
; <<> DiG 9.3.6-P1-RedHat-9.3.6-20.P1.el5 <<> gns.flex.com
```

```
:: global options:  printcmd
```

```
:: Got answer:
```

```
:: ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 46359
```

```
:: flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 1, ADDITIONAL: 1
```

```
:: QUESTION SECTION:
```

```
;gns.flex.com.                IN          A
```

```
:: ANSWER SECTION:
```

```
gns.flex.com.                86400      IN          A          192.168.69.102
```

```
:: AUTHORITY SECTION:
```

```
flex.com.                    86400      IN          NS         dns.flex.com.
```

```
:: ADDITIONAL SECTION:
```

```
dns.flex.com.                86400      IN          A          192.168.69.101
```

```
:: Query time: 0 msec
```

```
:: SERVER: 127.0.0.1#53(127.0.0.1)
```

```
:: WHEN: Tue Aug 27 12:41:05 2013
```

```
:: MSG SIZE  rcvd: 80
```

```
[root@lunar1 named]#
```

检验反向解析:

```
[root@lunar1 named]# dig -x 192.168.69.102
```

```
; <<>> DiG 9.3.6-P1-RedHat-9.3.6-20.P1.e15 <<>> -x 192.168.69.102
;; global options:  printcmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 21755
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 1, ADDITIONAL: 1

;; QUESTION SECTION:
;102.69.168.192.in-addr.arpa.      IN      PTR

;; ANSWER SECTION:
102.69.168.192.in-addr.arpa. 86400 IN      PTR      gns.flex.com.

;; AUTHORITY SECTION:
69.168.192.in-addr.arpa. 86400 IN      NS      dns.flex.com.

;; ADDITIONAL SECTION:
dns.flex.com.                86400 IN      A      192.168.69.101

;; Query time: 0 msec
;; SERVER: 127.0.0.1#53(127.0.0.1)
;; WHEN: Tue Aug 27 12:45:12 2013
;; MSG SIZE rcvd: 105
```

```
[root@lunar1 named]#
```

```
=====
=====
配置 hosts 文件:
=====
```

```
[root@lunar1 named]# cat /etc/hosts
# Do not remove the following line, or various programs
# that require network functionality will fail.
127.0.0.1                lunar localhost.localdomain localhost
#::1                    localhost6.localdomain6 localhost6

192.168.56.1 lunar-win

##### Public ips #####
#Resolved By GNS & DNS
#Address Assigned By Fixed
192.168.14.101          lunar1.flex.com lunar1
192.168.14.102          lunar2.flex.com lunar2
```

```
##### Private ips #####
```

```
#Resolved By GNS
```

```
#Address Assigned By Fixed
```

```
192.168.55.101    lunar1-priv.flex.com lunar1-priv
```

```
192.168.55.102    lunar2-priv.flex.com lunar2-priv
```

```
##### Virtual ips #####
```

```
##### Don't config on /etc/hosts #####
```

```
#####
```

```
#Host Node : Selected by Oracle Clusterware
```

```
#Address Assigned By DHCP, Virtual Dynamic
```

```
#Resolved By GNS
```

```
#Given Name : lunar1-vip and lunar2-vip
```

```
##### SCAN ips #####
```

```
##### Don't config on /etc/hosts #####
```

```
#####
```

```
#Host Node : Selected by Oracle Clusterware
```

```
#Address Assigned By DHCP, Virtual Dynamic
```

```
#Resolved By GNS
```

```
#Given Name : scan-ip.flex.com
```

```
##### GNS for Flax ASM ips #####
```

```
##### Don't config on /etc/hosts #####
```

```
#####
```

```
#Host Node : Selected by Oracle Clusterware
```

```
#Address Assigned By Fixed by net administrator
```

```
#Resolved By DNS
```

```
#Given Name : gns-vip.flex.com
```

```
#192.168.69.102    gns-vip.flex.com    gns-vip
```

```
#192.168.69.101    dns.flex.com    dns
```

```
[root@lunar1 named]#
```

配置节点 2:

```
[root@lunar2 ~]# cat /etc/resolv.conf
```

```
# 13714588 add timeout, rotate, attempts to mitigate issues with poor or misconfigured single  
DNS server
```

```
# timeout:n Initial timeout for a query to a nameserver. The default value is five seconds. The  
maximum value is 30 seconds.
```

```
# For the second and successive rounds of queries, the resolver doubles the initial timeout and  
is divided by the number
```

```
# of nameservers in the resolv.conf file.
```

```
option timeout:4
```



```
# attempts:n How many queries the resolver should send to each nameserver in the resolv.conf file
before it stops execution.
```

```
# The default value is 2. The maximum value is 5.
```

```
option attempts:2
```

```
# rotate Enables the resolver to use all the nameservers in the resolv.conf file, not just the
first one.
```

```
option rotate
```

```
# Search domain and name server
```

```
search flex.com
```

```
# Commented it out, because OUI complains about it
```

```
#domain flex.com
```

```
nameserver 192.168.69.101
```

```
[root@lunar2 ~]#
```