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## Forward and Reverse zone files for primary DNS server

```
Connected (encrypted) to: QEMU (2276_20_8)
root@CN-R2: /home/student
File Edit Tabs Help
GNU nano 2.9.8 /etc/bind/db.cn

; BIND data file for local loopback interface
;
$TTL 604800
@ IN SOA localhost. root.localhost. (
    2      ; Serial
    604800 ; Refresh
    86400  ; Retry
    2419200 ; Expire
    604800 ) ; Negative Cache TTL
;
@ IN NS localhost.
@ IN A 127.0.0.1
@ IN AAAA ::1
R1 IN A 10.10.10.3
R2 IN A 10.10.10.2
Kali IN A 10.10.10.1
second IN NS R1.cn.
```

```
Connected (encrypted) to: QEMU (2276_20_8)
root@CN-R2: /home/student
File Edit Tabs Help
GNU nano 2.9.8 /etc/bind/db.10.10.10

; BIND data file for local loopback interface
;
$TTL 604800
@ IN SOA localhost. root.localhost. (
    2      ; Serial
    604800 ; Refresh
    86400  ; Retry
    2419200 ; Expire
    604800 ) ; Negative Cache TTL
;
@ IN NS localhost.
@ IN A 127.0.0.1
@ IN AAAA ::1
10.10.10.3 IN PTR R1.cn.
10.10.10.2 IN PTR R2.cn.
10.10.10.1 IN PTR Kali.cn.
```

```
Connected (encrypted) to: QEMU (2276_20_8) Send CtrlAltDel
root@CN-R2: /home/student
GNU nano 2.9.8 /etc/bind/db.second.cn

; BIND data file for local loopback interface
;
$TTL 604800
@ IN SOA localhost. root.localhost. (
    2      ; Serial
    604800 ; Refresh
    86400  ; Retry
    2419200 ; Expire
    604800 ) ; Negative Cache TTL
;
@ IN NS localhost.
@ IN A 127.0.0.1
@ IN AAAA ::1
R2 IN A 10.10.11.5
R3 IN A 10.10.11.2
R4 IN A 10.10.11.10
Ubuntu IN A 10.10.11.18
```

```
Connected (encrypted) to: QEMU (2276_20_8) Send CtrlAltDel
root@CN-R2: /home/student
GNU nano 2.9.8 /etc/bind/db.10.10.11

; BIND data file for local loopback interface
;
$TTL 604800
@ IN SOA localhost. root.localhost. (
    2      ; Serial
    604800 ; Refresh
    86400  ; Retry
    2419200 ; Expire
    604800 ) ; Negative Cache TTL
;
@ IN NS localhost.
@ IN A 127.0.0.1
@ IN AAAA ::1
10.10.11.5 IN PTR R2.second.cn.
10.10.11.2 IN PTR R3.second.cn.
10.10.11.10 IN PTR R4.second.cn.
10.10.11.18 IN PTR Ubuntu.second.cn.
```

Host lookup by name using nslookup or dig.

```
Connected (encrypted) to: QEMU (2328_20_8)
root@CN-R2: /home/student
File Edit Tabs Help
root@CN-R2:/home/student# nslookup kali
Server:      10.10.10.2
Address:     10.10.10.2#53

Name:   Kali.cn
Address: 10.10.10.3

root@CN-R2:/home/student# nslookup ubuntu
Server:      10.10.10.2
Address:     10.10.10.2#53

Name:   Ubuntu.cn
Address: 10.10.11.18

root@CN-R2:/home/student# nslookup r1
Server:      10.10.10.2
Address:     10.10.10.2#53

Name:   R1.cn
Address: 10.10.10.1

root@CN-R2:/home/student# nslookup r3
Server:      10.10.10.2
Address:     10.10.10.2#53

Name:   R3.cn
Address: 10.10.11.2

root@CN-R2:/home/student# nslookup r4
Server:      10.10.10.2
Address:     10.10.10.2#53

Name:   R4.cn
Address: 10.10.11.10

root@CN-R2:/home/student#
```

**Screenshots of R1 pinging R2 and Kali**

```
Connected (encrypted) to: QEMU (2276_20_7)
root@CN-R1: /home/student

File Edit Tabs Help

student@CN-R1:~$ sudo su
[sudo] password for student:
root@CN-R1:/home/student# ping r2
PING R2.cn (10.10.10.2) 56(84) bytes of data:
64 bytes from 10.10.10.2 (10.10.10.2): icmp_seq=1 ttl=64 time=0.301 ms
64 bytes from 10.10.10.2 (10.10.10.2): icmp_seq=2 ttl=64 time=0.492 ms
64 bytes from 10.10.10.2 (10.10.10.2): icmp_seq=3 ttl=64 time=0.190 ms
64 bytes from 10.10.10.2 (10.10.10.2): icmp_seq=4 ttl=64 time=0.437 ms
64 bytes from 10.10.10.2 (10.10.10.2): icmp_seq=5 ttl=64 time=0.096 ms
64 bytes from 10.10.10.2 (10.10.10.2): icmp_seq=6 ttl=64 time=0.284 ms
64 bytes from 10.10.10.2 (10.10.10.2): icmp_seq=7 ttl=64 time=0.576 ms
^C
[1]+  Stopped                  ping r2
root@CN-R1:/home/student#
```

```
Connected (encrypted) to: QEMU (2276_20_7)
root@CN-R1: /home/student

File Edit Tabs Help

root@CN-R1:/home/student# ping kali
PING Kali.cn (10.10.10.1) 56(84) bytes of data:
64 bytes from 10.10.10.1 (10.10.10.1): icmp_seq=1 ttl=64 time=0.403 ms
64 bytes from 10.10.10.1 (10.10.10.1): icmp_seq=2 ttl=64 time=0.271 ms
64 bytes from 10.10.10.1 (10.10.10.1): icmp_seq=3 ttl=64 time=0.376 ms
64 bytes from 10.10.10.1 (10.10.10.1): icmp_seq=4 ttl=64 time=0.342 ms
64 bytes from 10.10.10.1 (10.10.10.1): icmp_seq=5 ttl=64 time=0.491 ms
64 bytes from 10.10.10.1 (10.10.10.1): icmp_seq=6 ttl=64 time=0.329 ms
64 bytes from 10.10.10.1 (10.10.10.1): icmp_seq=7 ttl=64 time=0.384 ms
^C
[2]+  Stopped                  ping kali
root@CN-R1:/home/student#
```

R2 pinging R1

```
Connected (encrypted) to: QEMU (2276_20_8)
root@CN-R2: /home/student

root@CN-R2:/home/student# ping r1
PING R1.cn (10.10.10.3) 56(84) bytes of data:
64 bytes from 10.10.10.3 (10.10.10.3): icmp_seq=1 ttl=64 time=0.457 ms
64 bytes from 10.10.10.3 (10.10.10.3): icmp_seq=2 ttl=64 time=0.380 ms
64 bytes from 10.10.10.3 (10.10.10.3): icmp_seq=3 ttl=64 time=0.338 ms
64 bytes from 10.10.10.3 (10.10.10.3): icmp_seq=4 ttl=64 time=0.581 ms
64 bytes from 10.10.10.3 (10.10.10.3): icmp_seq=5 ttl=64 time=0.428 ms
64 bytes from 10.10.10.3 (10.10.10.3): icmp_seq=6 ttl=64 time=0.298 ms
^C
[1]+  Stopped                  ping r1
root@CN-R2:/home/student#
```

Kali pinging R1

```
Connected (encrypted) to: QEMU (2276_20_12)
Thu 20:14
root@kali: /home/student

student@kali:~$ sudo su
[sudo] password for student:
root@kali: /home/student# ping R1
PING R1.cn (10.10.10.3) 56(84) bytes of data:
64 bytes from 10.10.10.3 (10.10.10.3): icmp_seq=1 ttl=64 time=0.263 ms
64 bytes from 10.10.10.3 (10.10.10.3): icmp_seq=2 ttl=64 time=0.374 ms
64 bytes from 10.10.10.3 (10.10.10.3): icmp_seq=3 ttl=64 time=1.01 ms
64 bytes from 10.10.10.3 (10.10.10.3): icmp_seq=4 ttl=64 time=0.467 ms
64 bytes from 10.10.10.3 (10.10.10.3): icmp_seq=5 ttl=64 time=0.472 ms
64 bytes from 10.10.10.3 (10.10.10.3): icmp_seq=6 ttl=64 time=0.302 ms
64 bytes from 10.10.10.3 (10.10.10.3): icmp_seq=7 ttl=64 time=0.393 ms
64 bytes from 10.10.10.3 (10.10.10.3): icmp_seq=8 ttl=64 time=0.615 ms
^C
[1]+  Stopped                  ping R1
root@kali: /home/student#
```

Screenshots of R2 pinging R3, R4, and Ubuntu

```
Connected (encrypted) to: QEMU (2276_20_8) Send CtrlAltDel
root@CN-R2: /home/student
File Edit Tabs Help
root@CN-R2:/home/student# ping r3
PING R3.cn (10.10.11.2) 56(84) bytes of data.
64 bytes from 10.10.11.2 (10.10.11.2): icmp_seq=1 ttl=64 time=0.298 ms
64 bytes from 10.10.11.2 (10.10.11.2): icmp_seq=2 ttl=64 time=0.350 ms
64 bytes from 10.10.11.2 (10.10.11.2): icmp_seq=3 ttl=64 time=0.459 ms
64 bytes from 10.10.11.2 (10.10.11.2): icmp_seq=4 ttl=64 time=1.69 ms
64 bytes from 10.10.11.2 (10.10.11.2): icmp_seq=5 ttl=64 time=0.429 ms
^Z
[7]+ Stopped ping r3
root@CN-R2:/home/student#
```

```
Connected (encrypted) to: QEMU (2276_20_8) Send CtrlAltDel
root@CN-R2: /home/student
File Edit Tabs Help
root@CN-R2:/home/student# ping r4
PING R4.cn (10.10.11.10) 56(84) bytes of data.
64 bytes from 10.10.11.10 (10.10.11.10): icmp_seq=1 ttl=63 time=2.11 ms
64 bytes from 10.10.11.10 (10.10.11.10): icmp_seq=2 ttl=63 time=0.771 ms
64 bytes from 10.10.11.10 (10.10.11.10): icmp_seq=3 ttl=63 time=1.07 ms
64 bytes from 10.10.11.10 (10.10.11.10): icmp_seq=4 ttl=63 time=0.811 ms
64 bytes from 10.10.11.10 (10.10.11.10): icmp_seq=5 ttl=63 time=0.984 ms
64 bytes from 10.10.11.10 (10.10.11.10): icmp_seq=6 ttl=63 time=1.67 ms
^Z
[8]+ Stopped ping r4
root@CN-R2:/home/student#
```

```
Connected (encrypted) to: QEMU (180.20.34)
student@CN-R2: ~
File Edit Tabs Help
student@CN-R2:~$ ping Ubuntu
PING Ubuntu.second.cn (10.10.11.18) 56(84) bytes of data:
64 bytes from 10.10.11.18 (10.10.11.18): icmp_seq=1 ttl=63 time=0.669 ms
64 bytes from 10.10.11.18 (10.10.11.18): icmp_seq=2 ttl=63 time=0.763 ms
64 bytes from 10.10.11.18 (10.10.11.18): icmp_seq=3 ttl=63 time=0.634 ms
64 bytes from 10.10.11.18 (10.10.11.18): icmp_seq=4 ttl=63 time=0.726 ms
64 bytes from 10.10.11.18 (10.10.11.18): icmp_seq=5 ttl=63 time=0.517 ms
64 bytes from 10.10.11.18 (10.10.11.18): icmp_seq=6 ttl=63 time=0.734 ms
64 bytes from 10.10.11.18 (10.10.11.18): icmp_seq=7 ttl=63 time=0.745 ms
^C
--- Ubuntu.second.cn ping statistics ---
7 packets transmitted, 7 received, 0% packet loss, time 125ms
rtt min/avg/max/mdev = 0.517/0.675/0.745/0.077 ms
student@CN-R2:~$
```

R3 ping R2

```
Connected (encrypted) to: QEMU (2276.20.9)
root@CN-R3: /home/student
File Edit Tabs Help
student@CN-R3:~$ sudo su
[sudo] password for student:
root@CN-R3:/home/student# ping r2
PING R2.cn (10.10.10.2) 56(84) bytes of data:
64 bytes from 10.10.10.2 (10.10.10.2): icmp_seq=1 ttl=64 time=0.179 ms
64 bytes from 10.10.10.2 (10.10.10.2): icmp_seq=2 ttl=64 time=0.417 ms
64 bytes from 10.10.10.2 (10.10.10.2): icmp_seq=3 ttl=64 time=0.212 ms
64 bytes from 10.10.10.2 (10.10.10.2): icmp_seq=4 ttl=64 time=0.340 ms
^Z
[1]+  Stopped                  ping r2
root@CN-R3:/home/student#
```

R4 ping R2

```
Connected (encrypted) to: QEMU (2276_20_10)
root@CN-R4: /home/student

File Edit Tabs Help
student@CN-R4:~$ sudo su
[sudo] password for student:
root@CN-R4:/home/student# ping r2
PING R2.cn (10.10.10.2) 56(84) bytes of data:
64 bytes from 10.10.10.2 (10.10.10.2): icmp_seq=1 ttl=64 time=0.210 ms
64 bytes from 10.10.10.2 (10.10.10.2): icmp_seq=2 ttl=64 time=0.235 ms
64 bytes from 10.10.10.2 (10.10.10.2): icmp_seq=3 ttl=64 time=0.400 ms
64 bytes from 10.10.10.2 (10.10.10.2): icmp_seq=4 ttl=64 time=0.572 ms
64 bytes from 10.10.10.2 (10.10.10.2): icmp_seq=5 ttl=64 time=0.164 ms
64 bytes from 10.10.10.2 (10.10.10.2): icmp_seq=6 ttl=64 time=0.403 ms
64 bytes from 10.10.10.2 (10.10.10.2): icmp_seq=7 ttl=64 time=0.406 ms
64 bytes from 10.10.10.2 (10.10.10.2): icmp_seq=8 ttl=64 time=0.426 ms
64 bytes from 10.10.10.2 (10.10.10.2): icmp_seq=9 ttl=64 time=0.404 ms
64 bytes from 10.10.10.2 (10.10.10.2): icmp_seq=10 ttl=64 time=0.371 ms
64 bytes from 10.10.10.2 (10.10.10.2): icmp_seq=11 ttl=64 time=0.329 ms
64 bytes from 10.10.10.2 (10.10.10.2): icmp_seq=12 ttl=64 time=0.327 ms
^C
[1]+  Stopped                  ping r2
root@CN-R4:/home/student#
```

## Ubuntu pinging R2

```
Connected (encrypted) to: QEMU (180_30_37)
root@Ubuntu: /home/student

Trash
LXTerminal
Wireshark

File Edit Tabs Help
root@Ubuntu:/home/student# ping r2
PING R2.second.cn (10.10.11.5) 56(84) bytes of data:
64 bytes from 10.10.11.5 (10.10.11.5): icmp_seq=1 ttl=63 time=0.567 ms
64 bytes from 10.10.11.5 (10.10.11.5): icmp_seq=2 ttl=63 time=0.730 ms
64 bytes from 10.10.11.5 (10.10.11.5): icmp_seq=3 ttl=63 time=0.714 ms
64 bytes from 10.10.11.5 (10.10.11.5): icmp_seq=4 ttl=63 time=0.958 ms
64 bytes from 10.10.11.5 (10.10.11.5): icmp_seq=5 ttl=63 time=0.751 ms
64 bytes from 10.10.11.5 (10.10.11.5): icmp_seq=6 ttl=63 time=0.730 ms
64 bytes from 10.10.11.5 (10.10.11.5): icmp_seq=7 ttl=63 time=0.678 ms
64 bytes from 10.10.11.5 (10.10.11.5): icmp_seq=8 ttl=63 time=0.716 ms
^C
--- R2.second.cn ping statistics ---
8 packets transmitted, 8 received, 0% packet loss, time 111ms
rtt min/avg/max/ndev = 0.567/0.732/0.958/0.164 ms
root@Ubuntu:/home/student#
```