

⌵ ⌵ ⌵ joe@ns1-thegummibear: ~

```
joe@ns1-thegummibear:~$ echo "Obviously if you cannot ssh into your machine, you  
have a problem!!!"
```

```
echo "Obviously if you cannot ssh into your machine, you have a problemexit!"
```

```
Obviously if you cannot ssh into your machine, you have a problemexit!
```

```
joe@ns1-thegummibear:~$ echo "Install the required dns packages"
```

```
Install the required dns packages
```

```
joe@ns1-thegummibear:~$ sudo apt-get install bind9
```

⌵ ⌵ ⌵ joe@ns1-thegummibear: ~

```
joe@ns1-thegummibear:~$ echo "Configure DNS server to be authoritative for my domain"
```

```
Configure DNS server to be authoritative for my domain
```

```
joe@ns1-thegummibear:~$ sudo vi /etc/bind/named.conf.local
```

```
//  
// Do any local configuration here  
//  
zone "thegummibear.com" {  
    type master;  
    file "/etc/bind/db.thegummibear.com";  
    allow-transfer { 144.38.199.163; localhost; };  
    notify yes;  
    allow-query { any; };  
}  
  
// Consider adding the 1918 zones here, if they are not used in your  
// organization  
//include "/etc/bind/zones.rfc1918";
```

```
~  
~  
~  
~  
~  
~  
~
```

⌵ ⌵ ⌵ joe@ns1-thegummibear: ~

```
joe@ns1-thegummibear:~$ echo "Now create the zone file for my domain."
```

Now create the zone file for my domain.

```
joe@ns1-thegummibear:~$ echo "The following file has an empty template that I can configure according to my needs."
```

The following file has an empty template that I can configure according to my needs.

```
joe@ns1-thegummibear:~$ sudo cp /etc/bind/db.empty /etc/bind/db.thegummibear.com
```

```
joe@ns1-thegummibear:~$ █
```

⌵ ⌵ ⌵ joe@ns1-thegummibear: ~

```
joe@ns1-thegummibear:~$ echo "Now to customise it"
```

Now to customise it

```
joe@ns1-thegummibear:~$ sudo vi /etc/bind/db.thegummibear.com █
```

```
; BIND reverse data file for empty rfc1918 zone
;
; DO NOT EDIT THIS FILE - it is used for multiple zones.
; Instead, copy it, edit named.conf, and use that copy.
;
$TTL      3600
@         IN      SOA      ns1.thegummibear.com. root.ns1.thegummibear.com. (
                2016090601      ; Serial
                3600      ; Refresh
                300      ; Retry
                241920      ; Expire
                60)      ; Negative Cache TTL
;
@         IN      NS       ns1.thegummibear.com.
@         IN      NS       ns2.thegummibear.com.
;
; A address records
;
ns1      IN      A         144.38.199.162
ns2      IN      A         144.38.199.163
mail     IN      A         144.38.199.164
www      IN      A         144.38.199.165
```

```
~
~
```

joe@ns1-thegummibear: ~

```
joe@ns1-thegummibear:~$ echo "Now restart the dns service so bind will see your changes"
```

Now restart the dns service so bind will see your changes

```
joe@ns1-thegummibear:~$ sudo service bind9 restart
```

```
joe@ns1-thegummibear:~$ █
```

⌵ ⌵ ⌵ joe@ns1-thegummibear: ~

```
joe@ns1-thegummibear:~$ echo "We must check if there were any errors"
```

```
We must check if there were any errors
```

```
joe@ns1-thegummibear:~$ sudo less /var/log/syslog █
```



```
Sep 6 09:39:00 ns1 named[3996]: automatic empty zone: 8.E.F.IP6.ARPA
Sep 6 09:39:00 ns1 named[3996]: automatic empty zone: 9.E.F.IP6.ARPA
Sep 6 09:39:00 ns1 named[3996]: automatic empty zone: A.E.F.IP6.ARPA
Sep 6 09:39:00 ns1 named[3996]: automatic empty zone: B.E.F.IP6.ARPA
Sep 6 09:39:00 ns1 named[3996]: automatic empty zone: 8.B.D.0.1.0.0.2.IP6.ARPA
Sep 6 09:39:00 ns1 named[3996]: automatic empty zone: EMPTY.AS112.ARPA
Sep 6 09:39:00 ns1 named[3996]: configuring command channel from '/etc/bind/rndc.key'
Sep 6 09:39:00 ns1 named[3996]: command channel listening on 127.0.0.1#953
Sep 6 09:39:00 ns1 named[3996]: configuring command channel from '/etc/bind/rndc.key'
Sep 6 09:39:00 ns1 named[3996]: command channel listening on ::1#953
Sep 6 09:39:00 ns1 named[3996]: managed-keys-zone: loaded serial 0
Sep 6 09:39:00 ns1 named[3996]: zone 0.in-addr.arpa/IN: loaded serial 1
Sep 6 09:39:00 ns1 named[3996]: zone 255.in-addr.arpa/IN: loaded serial 1
Sep 6 09:39:00 ns1 named[3996]: zone 127.in-addr.arpa/IN: loaded serial 1
Sep 6 09:39:00 ns1 named[3996]: zone localhost/IN: loaded serial 2
Sep 6 09:39:00 ns1 named[3996]: zone thegummibear.com/IN: loaded serial 2016090601
Sep 6 09:39:00 ns1 named[3996]: all zones loaded
Sep 6 09:39:00 ns1 named[3996]: running
Sep 6 09:39:00 ns1 named[3996]: zone thegummibear.com/IN: sending notifies (serial 2016090601)
Sep 6 09:39:00 ns1 named[3996]: network unreachable resolving './DNSKEY/IN': 2001:503:ba3e::2:30#53
Sep 6 09:39:00 ns1 named[3996]: network unreachable resolving './NS/IN': 2001:503:ba3e::2:30#53
Sep 6 09:39:00 ns1 named[3996]: network unreachable resolving './DNSKEY/IN': 2001:500:2::c#53
Sep 6 09:39:00 ns1 named[3996]: network unreachable resolving './DNSKEY/IN': 2001:500:2f::f#53
Sep 6 09:39:00 ns1 named[3996]: network unreachable resolving './DNSKEY/IN': 2001:500:84::b#53
Sep 6 09:39:00 ns1 named[3996]: network unreachable resolving './DNSKEY/IN': 2001:dc3::35#53
Sep 6 09:39:00 ns1 named[3996]: network unreachable resolving './DNSKEY/IN': 2001:500:2d::d#53
```

⌵ ⌵ ⌵ joe@ns1-thegummibear: /etc/bind

```
joe@ns1-thegummibear:/etc/bind$ echo "Yay, it is sending notifies"
```

```
Yay, it is sending notifies
```

```
joe@ns1-thegummibear:/etc/bind$ echo "Now let's test actual DNS functionality. Using the DIG command"
```

```
Now let's test actual DNS functionality. Using the DIG command
```

```
joe@ns1-thegummibear:/etc/bind$ █
```

joe@ns1-thegummibear: /etc/bind

```
joe@ns1-thegummibear:/etc/bind$ dig @localhost www.thegummibear.com A
```

```
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 17906
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 2, ADDITIONAL: 3

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 4096
;; QUESTION SECTION:
;www.thegummibear.com.      IN      A

;; ANSWER SECTION:
www.thegummibear.com.      3600    IN      A      144.38.199.165

;; AUTHORITY SECTION:
thegummibear.com.         3600    IN      NS     ns1.thegummibear.com.
thegummibear.com.         3600    IN      NS     ns2.thegummibear.com.

;; ADDITIONAL SECTION:
ns1.thegummibear.com.     3600    IN      A      144.38.199.162
ns2.thegummibear.com.     3600    IN      A      144.38.199.163

;; Query time: 0 msec
;; SERVER: ::1#53(::1)
;; WHEN: Tue Sep 06 09:40:57 MDT 2016
;; MSG SIZE rcvd: 133
```

⌵ ⌵ ⌵ joe@ns1-thegummibear: /etc/bind

joe@ns1-thegummibear: /etc/bind\$ dig @144.38.199.162 www.thegummibear.com A

```
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 18894
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 2, ADDITIONAL: 3

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 4096
;; QUESTION SECTION:
;www.thegummibear.com.      IN      A

;; ANSWER SECTION:
www.thegummibear.com.     3600    IN      A      144.38.199.165

;; AUTHORITY SECTION:
thegummibear.com.        3600    IN      NS     ns2.thegummibear.com.
thegummibear.com.        3600    IN      NS     ns1.thegummibear.com.

;; ADDITIONAL SECTION:
ns1.thegummibear.com.    3600    IN      A      144.38.199.162
ns2.thegummibear.com.    3600    IN      A      144.38.199.163

;; Query time: 0 msec
;; SERVER: 144.38.199.162#53(144.38.199.162)
;; WHEN: Tue Sep 06 09:41:32 MDT 2016
;; MSG SIZE rcvd: 133
```


⌵ ⌵ ⌵ joe@ns1-thegummibear: /etc/bind

```
joe@ns1-thegummibear:/etc/bind$ echo "test all of your A records to make sure they resolve correctly"  
test all of your A records to make sure they resolve correctly
```

```
joe@ns1-thegummibear:/etc/bind$ █
```

joe@ns1-thegummibear: /etc/bind

```
joe@ns1-thegummibear:/etc/bind$ echo "Could also test for other record types"
```

Could also test for other record types

```
joe@ns1-thegummibear:/etc/bind$ dig @144.38.199.162 thegummibear.com SOA
```

```
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 58335
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 2, ADDITIONAL: 3

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 4096
;; QUESTION SECTION:
;thegummibear.com.          IN      SOA

;; ANSWER SECTION:
thegummibear.com.          3600    IN      SOA      ns1.thegummibear.com. root.ns1.thegummibear.com. 2016090601 3600 300 241920 60

;; AUTHORITY SECTION:
thegummibear.com.          3600    IN      NS       ns2.thegummibear.com.
thegummibear.com.          3600    IN      NS       ns1.thegummibear.com.

;; ADDITIONAL SECTION:
ns1.thegummibear.com.      3600    IN      A        144.38.199.162
ns2.thegummibear.com.      3600    IN      A        144.38.199.163

;; Query time: 0 msec
;; SERVER: 144.38.199.162#53(144.38.199.162)
;; WHEN: Tue Sep 06 09:42:42 MDT 2016
;; MSG SIZE rcvd: 154
```

⌵ ⌵ ⌵ joe@ns1-thegummibear: /etc/bind

```
joe@ns1-thegummibear:/etc/bind$ echo "The only 2 files that you should be editing for now are the named.conf.local file or the zone file. Check these if you have errors"
```

```
The only 2 files that you should be editing for now are the named.conf.local file or the zone file. Check these if you have errors
```

```
joe@ns1-thegummibear:/etc/bind$ █
```

⌵ ⌵ ⌵ joe@ns1-thegummibear: /etc/bind

```
joe@ns1-thegummibear:/etc/bind$ echo "The only 2 files that you should be editing for now are the named.conf.local file or the zone file. Check these if you have errors"
```

The only 2 files that you should be editing for now are the named.conf.local file or the zone file. Check these if you have errors

```
joe@ns1-thegummibear:/etc/bind$ echo "When you edit the zone file, you MUST increment the serial number or notify will not happen"
```

When you edit the zone file, you MUST increment the serial number or notify will not happen

```
joe@ns1-thegummibear:/etc/bind$ echo "You must also restart bind whenever you make changes"
```

You must also restart bind whenever you make changes

```
joe@ns1-thegummibear:/etc/bind$ echo "tests with dig after you change something"
```

tests with dig after you change something

```
joe@ns1-thegummibear:/etc/bind$ █
```