

# **How To Configure named To Respond For An Internet Domain**

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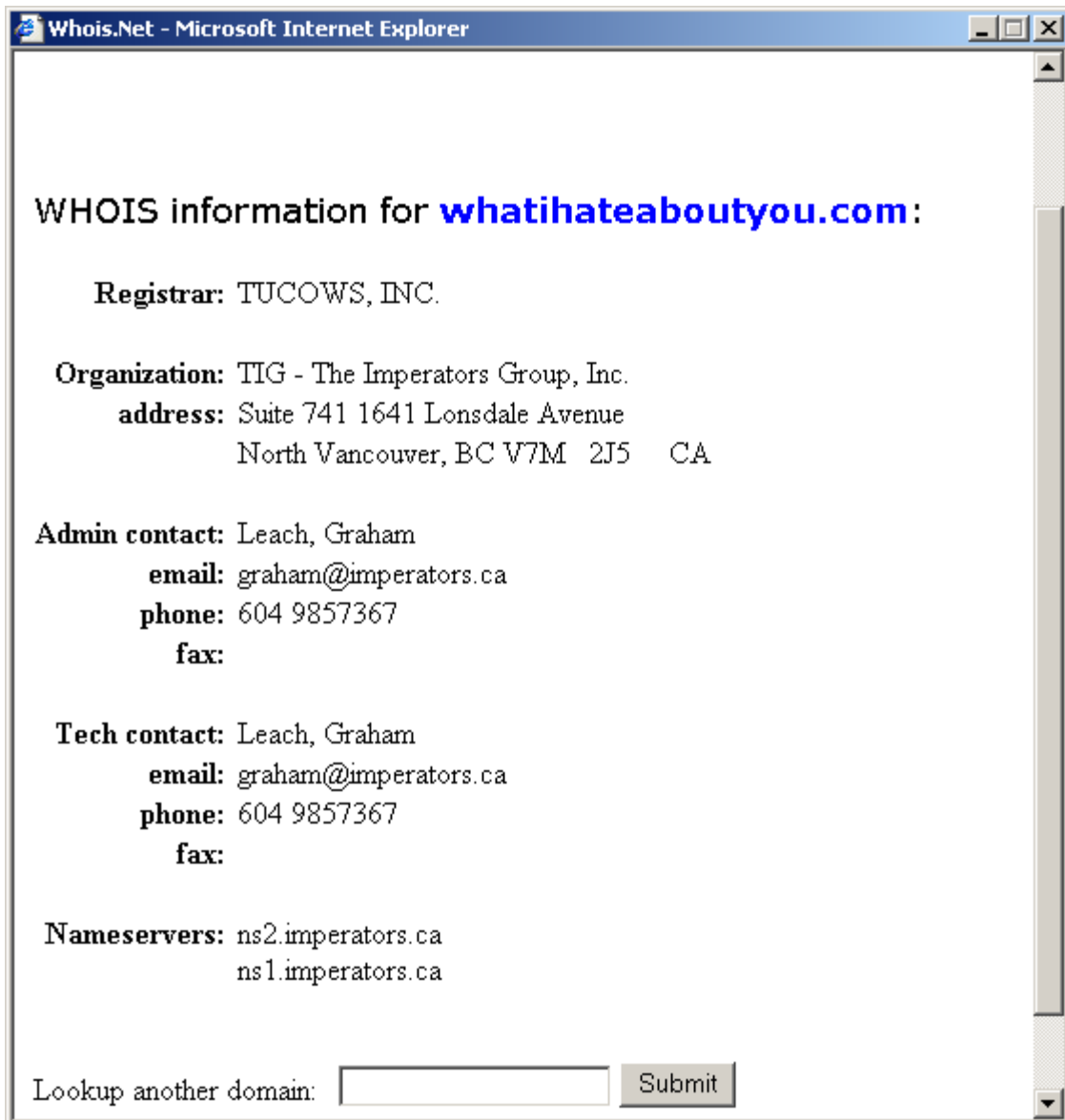
# Table Of Contents

An Example: whatihateaboutyou.com.....	3
The Activation: A High Level Overview .....	4
DNS Hosting Tasks .....	5
Changes to resolv.conf .....	5
The Authorities Directory Stanza.....	5
The Domain Stanza .....	5
The Authority File.....	6
Forcing named To Reload Its Data .....	7
IP Address Provisioning .....	8
Testing The IP Address .....	8
Activating The IP Address .....	9
Testing the DNS Installation .....	10

## An Example: whatihateaboutyou.com

Our example uses a domain called **whatihateaboutyou.com**. This domain name has already registered with an **Internet Registrar** called Tucows.

Consider the following.



The image shows a screenshot of a Microsoft Internet Explorer browser window titled "Whois.Net - Microsoft Internet Explorer". The main content area displays the following WHOIS information for the domain **whatihateaboutyou.com**:

**WHOIS information for [whatihateaboutyou.com](http://whatihateaboutyou.com):**

**Registrar:** TUCOWS, INC.

**Organization:** TIG - The Imperators Group, Inc.  
**address:** Suite 741 1641 Lonsdale Avenue  
North Vancouver, BC V7M 2J5 CA

**Admin contact:** Leach, Graham  
**email:** graham@imperators.ca  
**phone:** 604 9857367  
**fax:**

**Tech contact:** Leach, Graham  
**email:** graham@imperators.ca  
**phone:** 604 9857367  
**fax:**

**Nameservers:** ns2.imperators.ca  
ns1.imperators.ca

At the bottom of the window, there is a form labeled "Lookup another domain:" with an empty text input field and a "Submit" button.

In the example above appears a WHOIS record for the domain **whatihateaboutyou.com**.

The **DNS hosting** for this domain has been configured to use **name servers** provided by **imperators.ca**.

## The Activation: A High Level Overview

It has been decided that the website **www.whatihateaboutyou.com** will be created and hosted at the server with the IP address **203.80.245.2**.

Bringing **www.whatihateaboutyou.com** online requires that several tasks be completed:

1. Configure the DNS hosting
  - a. Determine the IP address mapping to **www.whatihateaboutyou.com**
  - b. Configure the DNS servers to supply the IP address on demand
2. Assign the IP address for **www.whatihateaboutyou.com** to a computer
  - a. Verify that an Internet-connected host responds to requests issued to that IP address

## DNS Hosting Tasks

At the hosting DNS machine, two important changes must be done to activate the domain **whatihateaboutyou.com** and the website located at **www.whatihateaboutyou.com**:

1. The DNS server must be informed that it is responsible for a new domain.
2. A DNS database file must be created with an entry to support the domain and website.

To activate the **whatihateaboutyou.com** domain, an entry in **/etc/resolv.conf** must be created that indicates to the **named** daemon (which responds to DNS requests on **port 53**) that it is an **authority** for the domain **whatihateaboutyou.com**.

After that, a domain database file must be created in the **/var/named** subdirectory to define the entities that will exist in the **whatihateaboutyou.com**, particularly the entity named **www**.

### *Changes to resolv.conf*

There are two entries of interest in the **/etc/named.conf** file, one tells **named** where to look for the **authority** information, the other is specific to the new **whatihateaboutyou.com** domain.

### The Authorities Directory Stanza

```
options {  
    directory "/var/named";  
}
```

The above entry tells **named** to look for **authorities** in the **/var/named** directory. The next entry to look for is the actual entry for the domain:

### The Domain Stanza

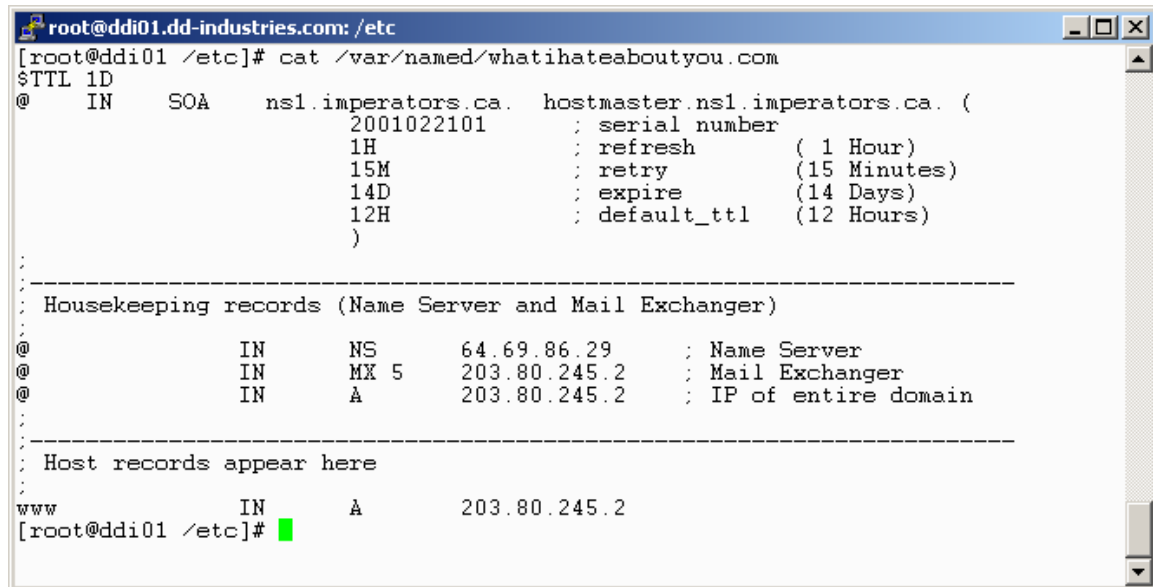
```
zone "whatihateaboutyou.com" in {  
    type master;  
    file "whatihateaboutyou.com";  
};
```

The above entry tells **named** that it is responsible for responding for requests regarding the **whatihateaboutyou.com** domain and the information for that domain is contained in a file named **whatihateaboutyou.com**.

## The Authority File

Information about Internet domains is contained in specially formatted text files called **authorities**. The DNS server, **named**, reads these files into memory and then responds to resolution requests for entities within those domains on **port 53**. Here is the contents of the authority for **whatihateaboutyou.com**, contained in **/var/named/whatihateaboutyou.com**:

Consider the following:



```
root@ddi01.dd-industries.com: /etc
[root@ddi01 /etc]# cat /var/named/whatihateaboutyou.com
$TTL 1D
@      IN      SOA      ns1.imperators.ca.  hostmaster.ns1.imperators.ca. (
                                2001022101      ; serial number
                                1H              ; refresh      ( 1 Hour)
                                15M             ; retry       (15 Minutes)
                                14D             ; expire      (14 Days)
                                12H             ; default_ttl (12 Hours)
                                )
;
;-----
; Housekeeping records (Name Server and Mail Exchanger)
;
@      IN      NS       64.69.86.29      ; Name Server
@      IN      MX       5      203.80.245.2    ; Mail Exchanger
@      IN      A        203.80.245.2    ; IP of entire domain
;
;-----
; Host records appear here
;
www    IN      A        203.80.245.2
[root@ddi01 /etc]#
```

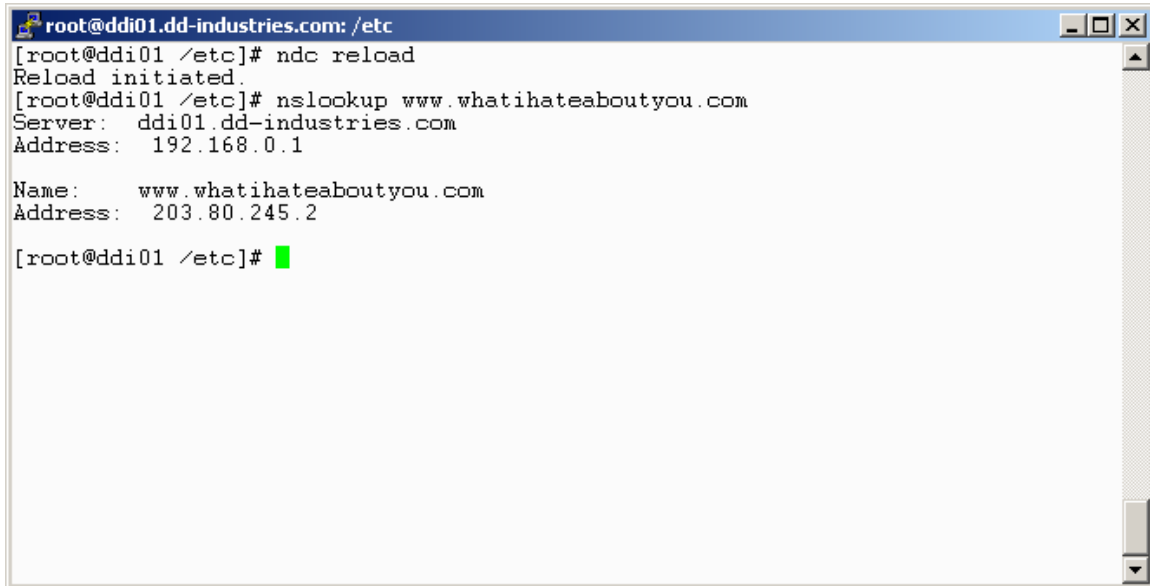
In the above example the **cat** command was used to output the contents of the authority for **whatihateaboutyou.com** to the screen. The file containing the authority for the domain is located at **/var/named/whatihateaboutyou.com**.

Authorities are complex documents. For more information about authorities, use **man named**.

### *Forcing named To Reload Its Data*

Once the **/etc/resolv.conf** file and the **/var/named/whatihateaboutyou.com** file have been properly configured, the **named** daemon must be instructed to reload its configuration data.

Consider the following:

A terminal window titled 'root@ddi01.dd-industries.com: /etc' showing the following commands and output:

```
[root@ddi01 /etc]# ndc reload
Reload initiated.
[root@ddi01 /etc]# nslookup www.whatihateaboutyou.com
Server: ddi01.dd-industries.com
Address: 192.168.0.1

Name: www.whatihateaboutyou.com
Address: 203.80.245.2

[root@ddi01 /etc]# █
```

In the above example, the **ndc reload** command was issued to **named** to instruct it to reload its configuration, then the IP resolution for **www.whatihateaboutyou.com** was tested with the **nslookup** command, which consults **named** to resolve FQDN names to IP addresses.

The output of the **nslookup** command indicates (correctly) that the IP address of the Internet entity **www.whatihateaboutyou.com** is **203.80.245.2**.

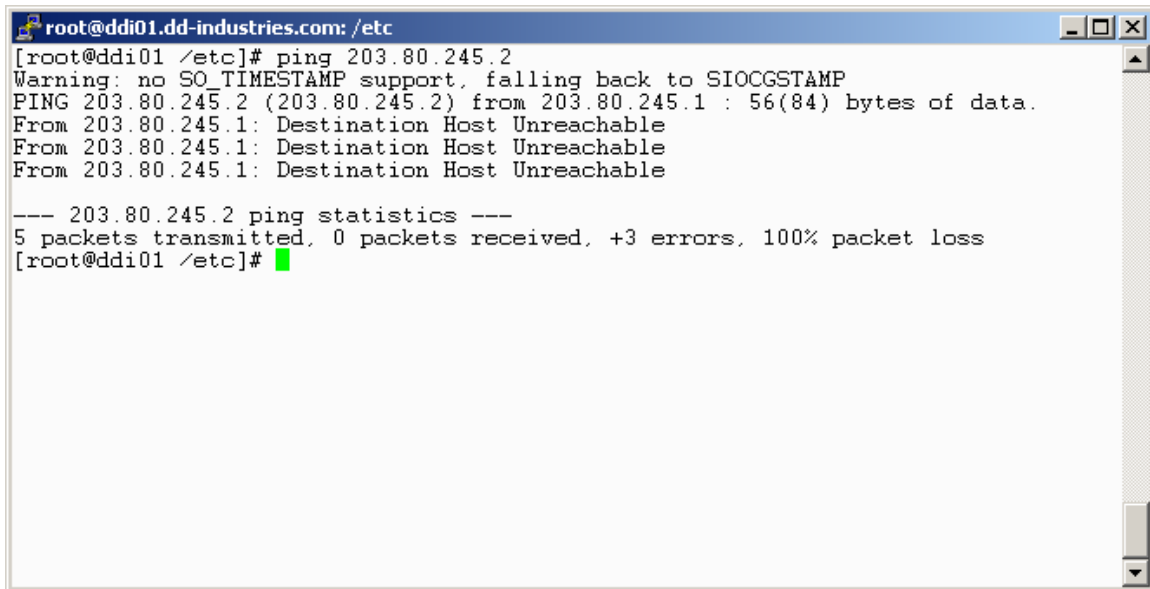
## IP Address Provisioning

If the IP address assigned to the Internet entity is not already active on the Internet, it must be assigned to a physical host and that host configured to respond to that IP address.

### *Testing The IP Address*

In our example, **www.whatihateaboutyou.com** has been assigned via DNS to the IP address **203.80.245.2**. It is prudent to test whether that IP address is currently active.

Consider the following:

A terminal window titled "root@ddi01.dd-industries.com: /etc" showing the execution of a ping command. The output indicates that the destination host is unreachable, resulting in a 100% packet loss.

```
root@ddi01.dd-industries.com: /etc
[root@ddi01 /etc]# ping 203.80.245.2
Warning: no SO_TIMESTAMP support, falling back to SIOCGSTAMP
PING 203.80.245.2 (203.80.245.2) from 203.80.245.1 : 56(84) bytes of data.
From 203.80.245.1: Destination Host Unreachable
From 203.80.245.1: Destination Host Unreachable
From 203.80.245.1: Destination Host Unreachable

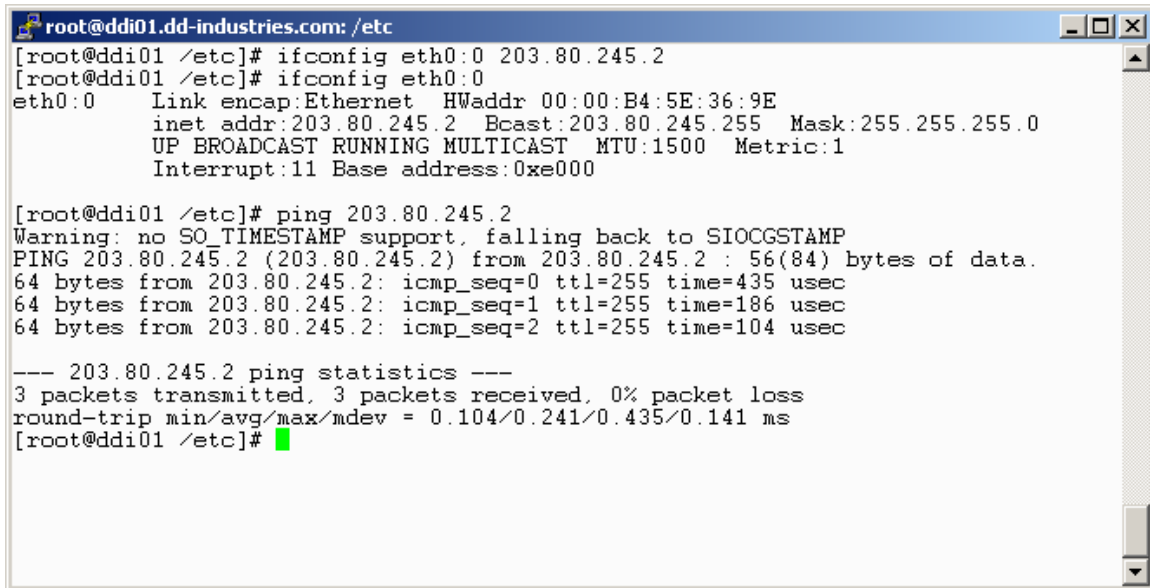
--- 203.80.245.2 ping statistics ---
5 packets transmitted, 0 packets received, +3 errors, 100% packet loss
[root@ddi01 /etc]#
```

In the above example the IP address 203.80.245.2 is demonstrated to be inactive.



## Activating The IP Address

Consider the following:

A terminal window titled 'root@ddi01.dd-industries.com: /etc' showing the execution of network configuration commands. The user runs 'ifconfig eth0:0 203.80.245.2', followed by 'ifconfig eth0:0' to display interface details. Then, they run 'ping 203.80.245.2' to test connectivity, which shows three successful pings with decreasing response times. Finally, they run 'ping 203.80.245.2' again to see statistics, showing 3 packets transmitted and received with 0% loss.

```
root@ddi01 /etc]# ifconfig eth0:0 203.80.245.2
[root@ddi01 /etc]# ifconfig eth0:0
eth0:0    Link encap:Ethernet  HWaddr 00:00:B4:5E:36:9E
          inet addr:203.80.245.2  Bcast:203.80.245.255  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          Interrupt:11  Base address:0xe000

[root@ddi01 /etc]# ping 203.80.245.2
Warning: no SO_TIMESTAMP support, falling back to SIOCGSTAMP
PING 203.80.245.2 (203.80.245.2) from 203.80.245.2 : 56(84) bytes of data.
64 bytes from 203.80.245.2: icmp_seq=0 ttl=255 time=435 usec
64 bytes from 203.80.245.2: icmp_seq=1 ttl=255 time=186 usec
64 bytes from 203.80.245.2: icmp_seq=2 ttl=255 time=104 usec

--- 203.80.245.2 ping statistics ---
3 packets transmitted, 3 packets received, 0% packet loss
round-trip min/avg/max/mdev = 0.104/0.241/0.435/0.141 ms
[root@ddi01 /etc]#
```

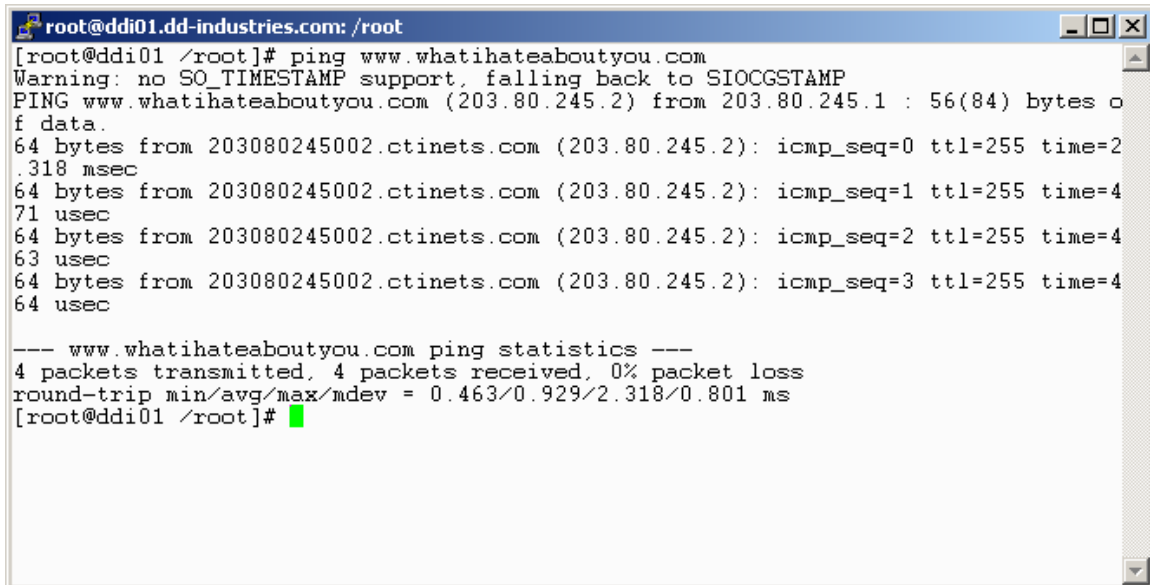
In the example, the IP address **203.80.25.2** was assigned to the **eth0:0** interface of a host already connected to the Internet.

Full interface information was then obtained with the **ifconfig eth0:0** command and the functionality tested with the **ping 203.80.245.2** command.

## Testing the DNS Installation

The final step is to see if the Internet entity is available by its Fully Qualified Domain Name (FQDN)

Consider the following:



```
root@ddi01.dd-industries.com: /root
[root@ddi01 /root]# ping www.whatihateaboutyou.com
Warning: no SO_TIMESTAMP support, falling back to SIOCGSTAMP
PING www.whatihateaboutyou.com (203.80.245.2) from 203.80.245.1 : 56(84) bytes of data.
64 bytes from 203080245002.ctinets.com (203.80.245.2): icmp_seq=0 ttl=255 time=2.318 msec
64 bytes from 203080245002.ctinets.com (203.80.245.2): icmp_seq=1 ttl=255 time=471 usec
64 bytes from 203080245002.ctinets.com (203.80.245.2): icmp_seq=2 ttl=255 time=463 usec
64 bytes from 203080245002.ctinets.com (203.80.245.2): icmp_seq=3 ttl=255 time=464 usec

--- www.whatihateaboutyou.com ping statistics ---
4 packets transmitted, 4 packets received, 0% packet loss
round-trip min/avg/max/mdev = 0.463/0.929/2.318/0.801 ms
[root@ddi01 /root]#
```

In the above the Internet entity **www.whatihateaboutyou.com** was probed using the **ping** command. As can be seen, there was a response to the **ping** from the host 203.80.245.1.

This means that from a DNS perspective the Internet site has been properly provisioned.