

Dynamic DNS Updates in Debian

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Latest version always available at <http://www.realmtech.net>

Introduction

There's not a lot of information on the web on how to get DHCP to automatically update your DNS server.

Most of this information relates to "Dynamic DNS" services, such as Monolith etc, or people asking questions on mailing lists.

First of all, I know no-one reads introductions, so I'll put this in bold.

Dynamic DNS updates will NOT work with the default dhcp server!

If you did `apt-get install dhcp`, you have DHCP 2. From experience, and some of my readings, you need **DHCP 3** and **BIND 9**.

Upgrading is fairly simple:

```
# apt-get remove dhcp
# apt-get install dhcp3-server
```

Note that your DHCP 2 conf file was in `/etc/dhcpd.conf`. DHCP 3 keeps it's at `/etc/dhcpd/dhcpd.conf`. (i.e., you'll either need to copy your old one there, or start from scratch).

The Conf Files - Cutting to the chase

I know many of you are only reading this document to look at my Conf files, so here they are.

I've decided to use the domain 'foobar' instead of the typical 'example.com'.

/etc/dhcp3/dhcpd.conf

```
server-identifier saturn;
authoritative;

# How to connect to the DNS server and update it.
ddns-update-style interim;

key FOO {
    algorithm HMAC-MD5.SIG-ALG.REG.INT;
    secret blah;
};

# Use what key in what zone
zone foobar. {
    primary 127.0.0.1;
    key FOO;
}

# Subnet definition w/ accompanying options
subnet 10.1.1.0 netmask 255.255.255.0 {
    range 10.1.1.32 10.1.1.128;
    option subnet-mask 255.255.255.0;
    option broadcast-address 10.1.1.255;
    option domain-name "foobar";
    one-lease-per-client on;
    default-lease-time 604800;
    max-lease-time 604800;

    # Gateways and DNS servers
    option routers 10.1.1.3;
    option domain-name-servers 10.1.1.3;
}

## Static Host Mappings ##
host static1 {
    hardware ethernet 00:00:00:00:00:00;
    fixed-address 10.1.1.7;
}
```

/etc/bind/named.conf

```
// Much of the content in here has been snipped
// because it's irrelevant

key FOO {
    algorithm HMAC-MD5.SIG-ALG.REG.INT;
    secret blah;
};

options {
    directory "/var/cache/bind";

    ## Put in your (internet) nameservers here
    forwarders {
        203.1.1.1;
        203.1.1.2;
    };

    auth-nxdomain no;
};

// Tells the nameserver who to allow updates from, with what keys
controls {
    inet 127.0.0.1 allow { localhost; } keys { FOO; };
};

// I've snipped all the useless crap you already have in your
named.conf
// Such as the "." zone, and the "localhost" zone.

zone "foobar" {
    type master;
    file "/etc/bind/db.foobar";
    allow-update { key FOO; };
};

zone "10.in-addr.arpa" {
    type master;
    file "/etc/bind/db.10";
    allow-update { key FOO; };
};
```

/etc/bind/rndc.key

```
key "rndc-key" {
    algorithm hmac-md5;
    secret blah;
};
```

Notes

You'll notice I've put a couple of things in **bold** in the conf files above.

1. algorithm **HMAC-MD5.SIG-ALG.REG.INT**

In almost all of the examples you see online, you'll notice they use the 'hmac-md5' algorithm in their conf files. For some reason, my dhcp server was refusing to start up, spitting out some 'Base64' error to the syslog. This

seemed to fix it. For all intents and purposes, `'HMAC-MD5.SIG-ALG.REG.INT'` is the same as `'hmac-md5'`.

2. `allow-update { key FOO; };`

Basically, make sure this line is in the correct zone in your `named.conf`. Didn't have any problems with it, just thought I'd emphasize it.

3. `/etc/bind/rndc.key`

Okay, apart from the `hmac-md5` problem, this one probably caused the most problems. None of the HOWTO's or Tutorials I came across on the net mentioned this file. As far as I can tell, it's the key the `rndc` service uses when it actually performs the update to BIND. Notice the `'algorithm hmac-md5'` line is not `'HMAC-MD5.SIG-ALG.REG.INT'`. The latter refused to work for some reason.

Bibliography

Almost all of the information contained within this document has been compiled from resources on the web and IRC.

"Dynamic DNS with DHCP and BIND9"

<http://www.mattfoster.clara.co.uk/ddns.htm>

– This is what got me started, although, as highlighted above, some of the lines in his conf files need altering.

"DHCP Server Mailing List Archive"

<http://www.isc.org/ml-archives/dhcp-server/2000/04/msg00193.html>

– Here's where I got the `'HMAC-MD5.SIG-ALG.REG.INT'` algorithm line from.

"Using rndc to Administer BIND"

<http://www.netadmintools.com/part25.html>

– And where I got all the `rndc` info from.