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Single A records, multiple IP addresses

by RowanBarker on May 15, 2013 at 5:54 PM

DNS

We're in the process of moving service providers for our main internet connection. We will be running the 2 circuits in parallel as we start migrating web facing servers on to the new IP range we have been assigned.

Can we ask our net names provider to register the new IP addresses with the current FQDNs to make the transfer process more seamless? For example:

Old IP 1.2.3.4 ftp.ourdomain.com

AND 4.3.2.1 ftp.ourdomain.com

Someone said we can't have multiple A-records for the same FQDN but I'm not so sure if this is true. Could cause problems if the DNS acts in a round robin fashion before we get the NAT'ing ported to the new addresses.

Is there another way to do this? My concern is that sometimes these changes can take 24-hours to become usable. If the new IP and DNS was ready to use in conjunction with the original IP, that would make the changeover a lot smoother.

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7 Replies

Mace

Gary D Williams May 15, 2013 at 5:58 PM

You can have multiple A records for the same FQDN. That's how DNS round-robin works.

for example - nslookup www.google.com

Non-authoritative answer:
Name: www.google.com
Addresses: 2a00:1450:400b:c02::63
74.125.24.147
74.125.24.99
74.125.24.103
74.125.24.104
74.125.24.105
74.125.24.106

Pimiento

Einangen May 15, 2013 at 6:20 PM
1st Post

An FQDN can have a lot of A records, as already stated.

My tip for this process is:

1. Make sure both IPs are routed.
2. Add the second A record.
3. Do whatever needs to be done, if anything.
4. Remove old A record.
5. Remove old route.

However, you might run into routing or firewall problems if the return-path is not the same as the incoming connection.

Chipotle

Nitroz May 15, 2013 at 6:30 PM

Yes you can have multiple IP's for the same A record.

There's a few problems with this if used for redundancy purposes... DNS servers and DNS resolvers randomly choose the order of the list of IPs - even though you might configure it a certain way on your DNS Server hosting the zone, resolvers will flip it. So you can't force all connections to go through a certain link and use the 2nd link for failover. It will however work if you simply wish to distribute clients randomly across both IPs.

Clients/browsers typically use the first IP in the list. If that times out after about 30secs, they will try to connect to the 2nd IP. There's no way to hurry up this process because it's hardcoded in the browsers (IE, chrome etc).

If you plan to have both links active and are using a firewall that supports load balancing so that connections are returned on the same link they are initiated on, this solution should work well for you.

Note: DNS round robin is different to having the same A record configured twice with two IP addresses - that normally results in the client receiving a single IP address (decided by the server) not two (as would be the case here).

Serrano

RowanBarker May 15, 2013 at 6:36 PM

Thanks everyone. I was hoping we could have a sort of weighted preference like MX records but I guess that's not possible. We don't really want clients randomly resolving the new addresses until we've got them NAT'd to our internal servers. I guess the only way we can do it is get all the firewall rules changed to have matching entries for the new addresses, then request the A-record is changed to the new IP and switch the NAT'ting over one weekend. It would have been nice to be able to do them all one at a time and test without worrying about end users seeing a problem.

It's never a simple fix! :-)

Chipotle

Nitroz May 15, 2013 at 6:53 PM

Yeah it's unfortunately there's no MX style preference for www records.

Just make sure you lower the TTL in preparation, that way you'll have less issues with old cached entries.

Be aware some DNS servers ignore TTLs and set their own cache time to 1 hour or so.

Best of luck!

Mace

Gary D Williams May 15, 2013 at 7:11 PM

> RowanBarker wrote:
>
> Thanks everyone. I was hoping we could have a sort of weighted preference like MX records but I guess that's not possible. We don't really want clients randomly resolving the new addresses until we've got them NAT'd to our internal servers. I guess the only way we can do it is get all the firewall rules changed to have matching entries for the new addresses, then request the A-record is changed to the new IP and switch the NAT'ting over one weekend. It would have been nice to be able to do them all one at a time and test without worrying about end users seeing a problem.
>
> It's never a simple fix! :-)

It's not possible to have a weighted preference with A records. What you could do is use a load balance style appliance and give it the IP addresses then configure it for a weighted preference but that's going to mean some messing around and testing.

Serrano

Tekk Noir May 15, 2013 at 7:50 PM

What Nitroz said: any time I've moved servers in the past, I've handled it by setting the TTL really low, like 5 minutes. As said, some DNS servers will cache for longer than they should, and you can't control that, but I've never had problems with a low TTL and changing the record in off-peak hours. I set the TTLs to 5 minutes. I'm not sure where I heard it, but my understanding was that your lookup request might go through 4 DNS server hops before it gets resolved, so your total time to change over should be 4 times your TTL, not factoring for servers that cache excessively. But like I said, I have no idea where I heard that :P

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Pimiento

Audun Einangen

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