Smart Proxy - Bug #17387

Speed up Proxy::DHCP::SubnetService#find_subnet

11/17/2016 12:02 PM - Anonymous

Status:	Closed		
Priority:	Normal		
Assignee:	Dominic Cleal		
Category:	DHCP		
Target version:	1.13.2		
Difficulty:		**Fixed in Releases:**	
Triaged:		**Found in Releases:**	
Bugzilla link:		**Red Hat JIRA:**	
Pull request:	https://github.com/theforeman/smart-proxy/pull/476, https://github.com/theforeman/smart-proxy/pull/477		

Description

Current implementation is O(n), it can be made O(log n).

Related issues:

Related to Smart Proxy - Bug #17373: ISC dhcp provider is unable to handle ve...   **New**

Associated revisions

Revision c16b176d - 11/22/2016 07:44 AM - Dominic Cleal

fixes #17387 - SubnetService#find_subnet has constant time lookup

find_subnet is now approximately constant with the number of subnets
configured, using hash lookups of possible network prefixes for the
given IP address until the most specific prefix is found. Benchmark
results:

```
find_subnet (1 subnets, 200 hosts)
                              1.665k (± 9.5%) i/s -     16.437k in   9.991955s
    find_subnet (5 subnets, 1000 hosts)
                              331.898  (± 7.5%) i/s -      3.298k in   9.999109s
    find_subnet (50 subnets, 10000 hosts)
                              31.363  (± 6.4%) i/s -    313.000  in  10.005986s
    find_subnet (500 subnets, 100000 hosts)
                              3.078  (± 0.0%) i/s -     31.000  in  10.072384s
    find_subnet (5000 subnets, 1000000 hosts)
                              0.301  (± 0.0%) i/s -      4.000  in  13.298996s
```

add_subnet only checks for an identical network prefix instead of
overlapping prefixes with #find_subnet, speeding it up considerably.
Benchmark results:

```
add_subnet (1)      41.389k (±17.4%) i/s -    378.638k in   9.792687s
        add_subnet (5)    10.278k (±11.2%) i/s -     99.588k in   9.931308s
        add_subnet (50)    1.062k (± 9.3%) i/s -     10.470k in   9.991114s
     add_subnet (500)   105.161  (± 9.5%) i/s -      1.042k in  10.007969s
    add_subnet (1000)    53.826  (± 7.4%) i/s -    536.000  in  10.012055s
   add_subnet (15000)     3.424  (± 0.0%) i/s -     35.000  in  10.241879s
```

History

#1 - 11/17/2016 12:02 PM - Anonymous

- Related to Bug #17373: ISC dhcp provider is unable to handle very big networks added

#2 - 11/17/2016 12:04 PM - The Foreman Bot

- Status changed from Assigned to Ready For Testing

- Pull request https://github.com/theforeman/smart-proxy/pull/476 added

#3 - 11/22/2016 06:28 AM - The Foreman Bot

- Pull request https://github.com/theforeman/smart-proxy/pull/477 added

#4 - 11/22/2016 08:02 AM - Dominic Cleal

- Status changed from Ready For Testing to Closed

- % Done changed from 0 to 100

Applied in changeset [c16b176dd1e258188e7bc158247b3319c80e6576](#).

#5 - 11/22/2016 09:33 AM - Dominic Cleal

- translation missing: en.field_release set to 203

- Assignee changed from Anonymous to Dominic Cleal