ANIMA DNS-SD compatible services auto configuration

draft-eckert-anima-grasp-dnsssd-04
draft-eckert-anima-services-dns-autoconfig-02

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Summary

- Only Refresher
- Documents quite stable
  - Content/functionality, not necessarily text quality
- Please read the documents
draft-eckert-anima-services-dns-autoconfig

• How to get towards a completely autoconfigured ANI network
  • ANI: BRSKI + ACP
  • RFC8368: Up to the point that a controller can configure network via ANI

• Not too difficult:
  • Just a couple of central services:
  • NOC operator starts services. ANI networks learns them via GRASP
  • Syslog, NTP, Radius/Diameter, SSH (for NetConf/CLI). More ?
  • Should work without DNS – but DNS server often convenience
Draft does describe this model

Want to allow redundant servers for reliability

On every router: services Syslog, NTP, Radius/Diameter, SSH
  - Started and using GRASP information to auto-configure their NOC service side.

Do not reinvent the wheel:
  - Service announcements from NOC should use DNS-SD
  - Only carried over GRASP because it fits better
    - This is subject of second draft.
In DNS data for a single service is split across 4++ messages ("Resource Records")
-AAAA, CNAME, PTR, SRV, TXT, ...
Unicast DNS discovering service requires multiple round-trips (when no cache)
mDNS somewhat better, but still request/reply round-trips involved
In GRASP, all service instance parameters are just one GRASP objective message
-Can easily add standard/custom parameters as well.
-If Objective name is SRV.<name>, then <name> must be an IANA registered service name. Aka: reuse existing registry!

```
[M_FLOOD, 12340815, h'fd89b714f3db000020000064000001', 210000, 
"SRV.syslog", 4, 255, 
{ rfcXXXX: { 
  &(sender-loop-count:1) => 255, 
  &(srv-element:2) => { 
    &(msg-type:1) => &(describe: 0), 
    &(service:2) => "syslog", 
    &(instance:3) => "east-coast-primary", 
    &(priority:5) => 0, 
    &(weight:6) => 65535, 
    &(kvpairs:7) => { "replicate" => 2 }, 
    &(range:8) => 2, 
  } 

  } 
} 
], 
[O_IPv6_LOCATOR, 
 h'fd89b714f3db000020000064000001', TLS12, 514] 
]```
Not only useful for ANI. Also for non-ANI network!

Example IoT networks that do not yet use mDNS
  • Define services to be discovered via DNS-SD
  • Example: “pledge”, “registrar” discovery for BRSKI-PRM
  • Later decide in some network not to use mDNS, but GRASP as transport !!!

Benefit of GRASP over mDNS
  • Much simpler message format/exchanges than mDNS
  • Single Message format for a service (mDNS: multiple Resource Records)
  • Can easily work across L3 domain (mDNS only easily across L2 domain)
Ask

- Would like to see adoption call for these two drafts