Cisco Service Advertisement Framework

Q. What is Cisco® Service Advertisement Framework (SAF)?

A. Cisco SAF is a Layer 4 communications framework built into Cisco IOS® Software that distributes service messages around the local and wide area network much like how routing protocols propagate routes. SAF uses Enhanced Interior Gateway Routing Protocol (EIGRP) as the transport protocol yet does not need to run EIGRP routing.

Q. What services are supported today?

A. Unified Communications 8.0 will be the first supported SAF application. Support includes Cisco Unified Communications Manager Express (CME), Cisco Unified Communications Manager, and Survivable Remote Site Telephony (SRST).

Q. Will SAF support other services? Who can I contact to suggest future service support or to participate in early field trials (EFTs)?

A. SAF will support other applications from Cisco in the near future and Cisco is looking at how we might enable SAF for third-party or open source development in the near future as well.

Q. Is SAF standards based?

A. SAF is not an open standard today, though Cisco will be considering and evaluating this further moving forward. There are plenty of standard and nonstandard service lookup options available in the market today to help those businesses requiring such software.

Q. I understand SAF can greatly simplify my voice-over-IP (VoIP) deployment. Where can I find more information on how to deploy SAF with my Unified Communications 8.0 application?

A. Please contact the Voice Technology Group through your account representative or reseller for more information or visit http://www.cisco.com/go/saf.

Q. What are the main components of SAF?

A. The main components include the SAF client nodes, forwarder nodes, and transparent nodes. The SAF clients reside in the applications themselves, while the SAF forwarder resides in the Cisco IOS Software, and the two communicate in a client/server fashion.

Q. Is SAF an IP routing protocol?

A. Not at all. SAF is a service advertisement protocol that runs independently of any IP routing protocol. SAF will initially use EIGRP for service message transport enablement, but no EIGRP IP routing needs to be running in the network. Any Interior Gateway Protocol (IGP), for example, Routing Information Protocol (RIP), IGRP, Open Shortest Path First (OSPF), or Intermediate System -to-Intermediate System (IS-IS) Protocol, can be used.

Q. Does SAF require EIGRP?

A. No. SAF uses the EIGRP “engine” and requires the EIGRP feature set, but does not require any EIGRP routing.

Q. How chatty is SAF?

A. SAF can be very quiet or very busy depending almost completely on the SAF clients and changes to the SAF network such as service updates or change messages. When items do not change too much, which is the more normal case, SAF can be very quiet.

Q. How are SAF services advertised and discovered across the network?

A. The SAF client, which must be part of some application, must advertise its application as a service to the SAF forwarder and then the SAF network propagates that service advertisement across the SAF network.

Q. Does SAF use unicast and multicast to distribute service advertisements?

A. SAF uses unicast messages to distribute service advertisements.

Q. How does SAF prevent advertisement loops in the network?

A. SAF prevents advertisement loops by utilizing the EIGRP Diffusing Update Algorithm (DUAL), split horizon.

Q. Does SAF utilize the metrics used by EIGRP (for example, bandwidth, delay, and so on)?

A. Not today. We are first looking to understand better how applications will integrate and utilize SAF before such in-depth enhancements can be supported.

Q. Is a software development kit (SDK) available for me to write my own API for an external SAF client so I can talk with my SAF-enabled network?

A. Not today. Please see the preceding question "Can SAF be used to support other types of services?" for more information.

Q. When will SAF be available?

A. SAF is shipping now (October 2009), starting in our first software release based on the 15.0(1)M Cisco IOS Software version.

Q. What platforms support SAF?

A. The first release, 15.0(1)M, is supported on the Cisco 7200, 3800, 2800, 1800, and 800 Series. Please consult Cisco IOS Software Feature Navigator for more information.

Q. Is there a minimum feature set required for SAF?

A. Yes. To keep it simple for our customers, the same feature sets that you already know include EIGRP will include SAF also.

Q. Does SAF have to be deployed everywhere in my network?

A. No. SAF only has to be deployed near the edges of your network close to the SAF clients that advertise or subscribe to the SAF messages. The SAF forwarders must have reachability to one another as well to route service advertisement messages.

Q. How secure is SAF?

A. SAF is as secure as EIGRP is today.

Q. Can SAF advertisements be filtered (for example, using access lists, route maps, or other means)?

A. Very likely the answer is yes, but we have not heard of any such use cases today since SAF is not, and likely is not to be, in mass deployment like EIGRP for some time yet.

Q. Is there a limit to the number of services SAF can support?

A. There will be a limit, just as there is a limit to the number of routes and peers EIGRP can support, but the limit is to be determined.

Q. Can I limit the size of the SAF database to protect against DoS attacks?

A. The SAF database is by design meant to be dynamic. Typically customers use access control lists (ACLs) and firewalls to control or limit DoS attacks in their networks. We recommend customers protect SAF just like they protect routing protocols.

Q. How do I identify SAF advertisements from regular EIGRP routing advertisements when using a packet analyzer or sniffer?

A. Just as with any IP protocol, the easiest way is through the IP source and destination port numbers.

Q. Can SAF be used with Network Address Translation (NAT) or across firewalls?

A. We have not heard any such use cases to date in our EFTs but would like to understand better any requirements for this. Typically SAF should be used just like any internal enterprise routing protocol.

Q. What packet formats does SAF use?

A. SAF has defined its own IP/UDP packet format just as any application service that must communicate between many hosts within the service.

Q. Can SAF prioritize among different service advertisements?

A. Not today, though we are evaluating such requirements for the future.

Q. What resources (memory, CPU, and so on) does SAF consume?

A. This will vary according to the platform and the Cisco IOS Software image. Please contact your Cisco account team to discuss your particular scenario.

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