

Intra-domain SAVNET OAM

draft-cheng-savnet-intra-domain-oam-01

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Introduction

This document explores the implementation of OAM (Operations, Administration, and Maintenance) for intra-domain SAVNET.

- Fault detection
- Falut isolation
- Configuration
- Notify
- Count --Updated
- Performance --Updated

Performance

- latency
- Loss
- Action

performance	
latency	Performance management allows the measurement of packet forwarding transmission performance within a domain, including latency and packet loss.
loss	
Action	A tool like savnet-ping can be used for simple performance testing to initially locate network faults.

Inter-domain Source Address Validation (SAVNET) OAM

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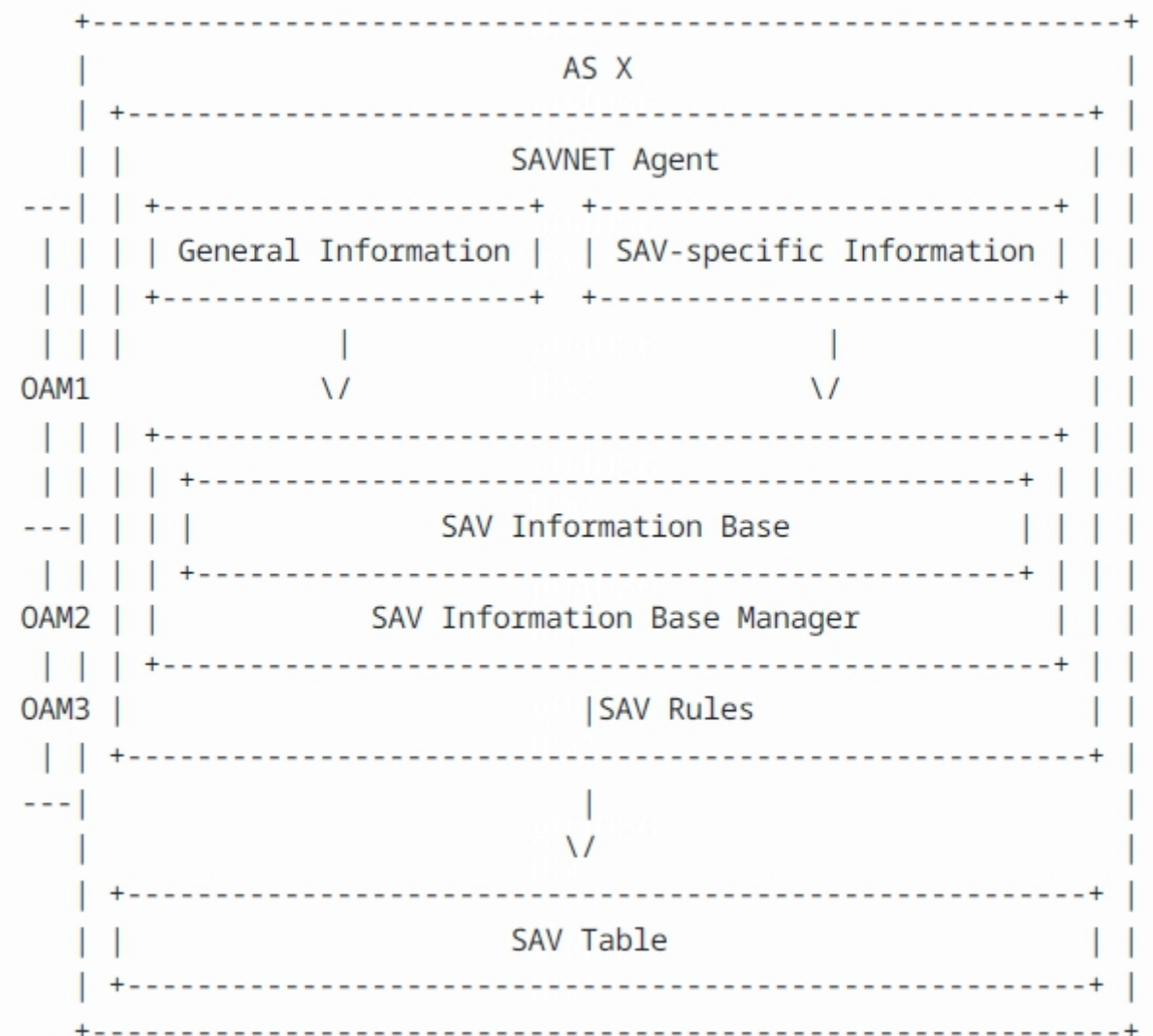
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Inter-domain OAM

- OAM1: Source information OAM
 - Configuration for different data sources, including RPKI, Local Routing, IRR Data, BGP Update, and SAV-Specific Information .
- OAM2: SAV Information OAM
 - Based on the source information from the different data sources in OAM1, provide the functionality to view source information by AS number.
- OAM3: SAV Rule OAM
 - Based on the source information from different origins, optimize to generate SAV Rules, and maintain Permit Rules and Block Rules.



OAM1: Source Information Configuration

- Configuration for RPKI
- Configuration for Local Routing
- Configuration for IRR Data
- Configuration for BGP Update
- Configuration for SAV-Specific.

RPKI Configuration	
Enable	Enable/Disable
Priority	Priority of RPKI
Capacity	Maximum capacity for prefix origin information via RPKI
Cache time:	For source information of RPKI, its cache time

Local Routing Configuration	
...	...

IRR Configuration	
...	...

BGP Update Configuration	
...	...

SAV-Specific Configuration	
...	...

OAM2: Source Information Entry

Source Entry	
Source Type	RPKI/Local Route/IRR/BGP Update
Prefix	Prefix and Length
InAs	Ingress AS
InInterface	Ingress Interface List
InPeer	Ingress Peer
UpdateTime	Update Time

OAM2: Source information Notification & Count

Notification	
CacheExceed	When cache count exceeds specifications, a notification needs to be sent.
SecurityError	Logged security incidents pertaining to the OAM Message Channel.
Protocol errors	Protocol errors like misconfiguration

Count	
RpkiCount/Local RouteCount/BGP UpdateCount/Irr Count/SAVSepecifyCount	Source Information entry Count by type
AddCount/DelCount/ModifyCount	Source Information entry Add/Del/modify count

OAM3: SAV Rule Entry

SAV Rule Entry	
Type	Allow-list Rule/ Block-list Rule
SourceAS	Ingress AS
Prefix	Prefix and Length
InAs	Ingress AS
InInterface	Ingress Interface
InPeer	Ingress Peer

OAM3: Fault

SAV Rule Fault Detect

Real-time Monitoring

Alert System

Automated Diagnostic Tools

Routing Protocol Analysis

SAV Rule Fault Isolation

Isolate Interface:
disable that interface to prevent the spread of abnormal traffic

Isolate Device:
isolate the faulty device

Adjust Routing:
Modify the BGP routing table

OAM3: SAV Rule Performance & Count

SAV Rule Performance	
Forwarding Delay	
Forwarding Packet Loss Rate	
Time Spent on Calculating Table Items	

SAV Rule Count	
Global Count	Count the SAV Source information by type. Count the SAV Source information by Source AS.
AS-based Statistics	Prefix and Length
Count of SAV Rule modified	

Next Steps

- Any questions or comments are Welcomed
- Seeking for feedback

THANKS