A Seamless Evolution: SAM’s Journey with prpl

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A Seamless Evolution
SAM’s Journey with prpl

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• **SAM** joined prpl foundation in **2019**

• **Platform Vision** brought us to prpl to support applications on CPE

• **Initial involvement** focused on Security Application requirements

• **Long journey** started with concept and now in working demo stage

• **Significant opportunity** seen with adoption interest for prpl
Application without a platform approach

- **Time and Resource intensive** integration for each CPE model
- Potential constraints **limiting user experience** between CPE models
- **Multi-party coordination** required
- **Container or Native**
Moving towards prpl

- **Privileged Container** within LCM framework
- **Required APIs** are not fully built to needs (yet), native access where still needed
- **Data Sharing** between applications is enabled
Applications on prplOS

- **Portable** integration
- **Focus on** App and **Consumer Experience**
- **App store** like - build once, run many places
- **Unprivileged** mode

Containers for Applications

- **SAM Security**
- **SAM Observability**
- **Wi-Fi Sensing**
- **Sample App**

High Level API

- **prplOS**
- **prplMesh Wi-Fi**
- **LCM Agent**

Low Level API

- **UBUS**

Hardware
SAM Provides
End-to-end solutions & Stand-alone products

Cybersecurity
- VITA
  Security Suite for Home
- OPUS
  Security Suite for SMB/SOHO

Observability
- LIGO
  Device Identification
- LUXO
  Service Identification

SAM Enables
Customers integrate SAM’s data & capabilities within their solution

Enablers
- rAPIId
  Device Identification and Enrichment API
  More coming soon.

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Observability

- What devices are connected to the network?
- What services is each device consuming?

- Data available for other app consumption
  - Cloud
  - CPE

Aggregated stats from the cloud:
- Operator planning with anonymized data
- Digital Wellness / Usage Dashboards
- Proactive Care
- Troubleshooting
- Service Recommendation
- And many more....

Real time use on CPE:
- Improved User Experience across Applications
- Security
- Parental Control
- Quality of Service
- Quality of Experience
- And many more....

Containers for Applications

Sample App
SAM Observability

High Level API

prplOS
prplMesh Wi-Fi
LCM Agent

Low Level API

Hardware

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Cybersecurity

Router Protection
- Router Hardening
- Virtual Hot Patching
- Deception

Network Protection
- Anti DoS/DDoS
- Brute Force & Port Scan Protection
- Safe Browsing

Device Protection
- Virtual Hot Patching
- Dynamic Firewall
- DPI Engine

Creating holistic solutions protecting against:
- Malware
- Brute Force
- Port Scanning
- DoS/DDoS
- Service Blockage
- Connection Abuse
- Multi-level Router Attacks
- And more...
SAM Demo

- **Security** within a container on LCM framework
- **Observability** data available to other applications

Experience it here
and at **Network X - F27, Hall 7.3**

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**SAM Containerized Application**

- Data Collection
- Packet Processing

**Sample App**

**High Level API**
- prpIOS
- prpIMesh
- Wi-Fi
- LCM Agent

**Low Level API**
- UBUS

**Hardware**

- **Firmware**
  - User-space: dhcpd, d-bus, TR069
  - Kernel: ebtables, ppca_cmd
- **Firmware User-space**
  - Raw Socket (NFQueue, NFLOG, Connbytes, Mark, Limit, IPset)
- **Firmware Kernel**
  - ARP Table
- **xtables-Multi Extensions**
  - VLAN Configuration (ebtables, ppca_cmd)
  - Hardware (prpIOS, prpIMesh, Wi-Fi, LCM Agent, UBUS)
THANK YOU

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