Scaling Out FusionPBX With Kamailio

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About Me

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Education & VoIP Background:

- BS & MS in Computer Science
- 10 years

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How Did I Get Started in Telephony

- Dad bought me a Commodore Vic 20, which was the predecessor to the Commodore 64
- I convinced him to purchase me a 300 baud modem
- Started a 1 line BBS (Bulletin Board Service) in my bedroom with 2mb of storage online

- -

Dependency Graph
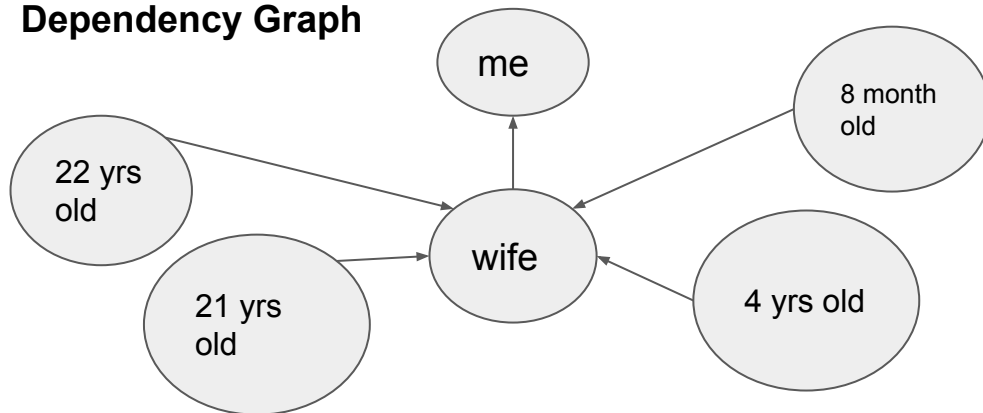
Agenda

- Intro to dSIPRouter (2 minutes)
- Problems we are trying to solve (2 minutes)
- Architecture (5 minutes)
- Demo (10 minutes)
- Roadmap (2 minutes)
- Questions (7 minutes)

  Total: 28 minutes

Intro to dSIPRouter

- **What**
    - GUI Interface for implementing Kamailio to provide SIP Trunking Services and PBX Hosting
- **Core Components**
    - Python (GUI)
    - Kamailio
    - RTPEngine (optional)
    - Bash Scripts
    - Nginx (optional)
    - Docker (optional)
- **Project Started**
    - V0.2 was released on Sept 2017

P1

P2

P3

P4

GUI

Kamailio

RTPEngine (optional)

Nginx (optional)

Docker

C1

C2

C3

C4
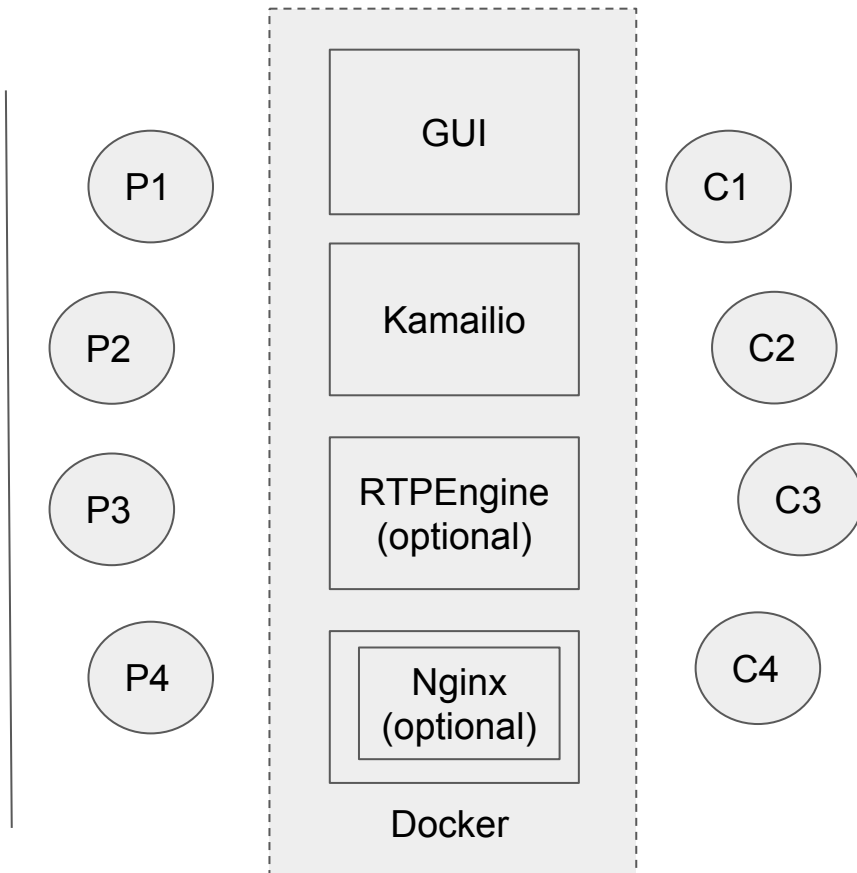
Intro to dSIPRouter

- **Sponsors**
 - Skyetel (Gold)
  - dOpenSource

Intro to dSIPRouter

- **Design Principles**
    - Stay true to Kamailio trunk (use standard modules)
    - Help increase the adoption of Kamailio
    - Ability to start routing traffic between a carrier and endpoint within 10 minutes
    - Minimum database interaction during runtime
    - Push back on feature overload
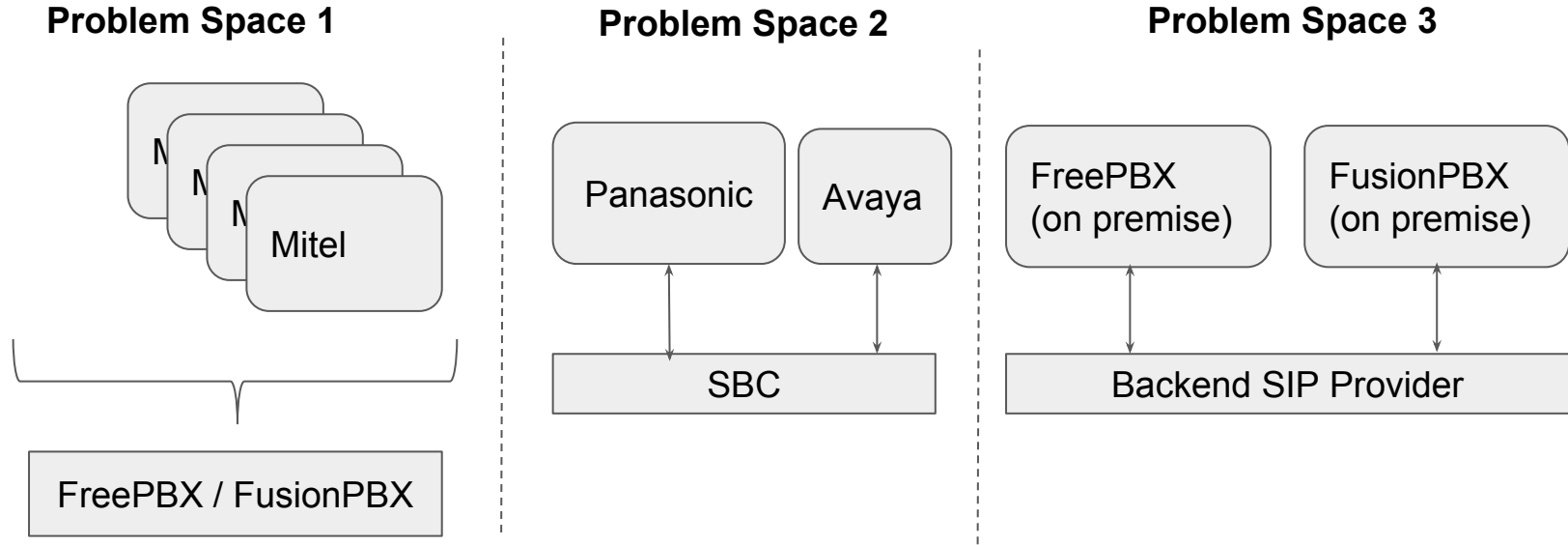   - Provide a pipeline towards more feature rich Kamailio based proxies

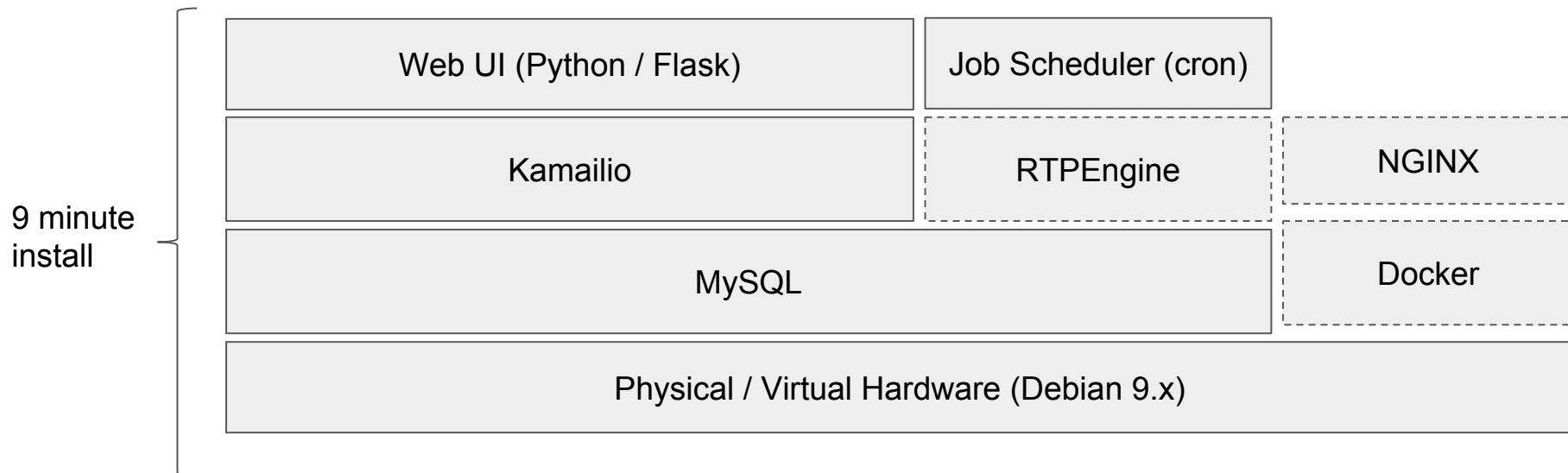# Problems we are trying to solve (PBX Hosting)
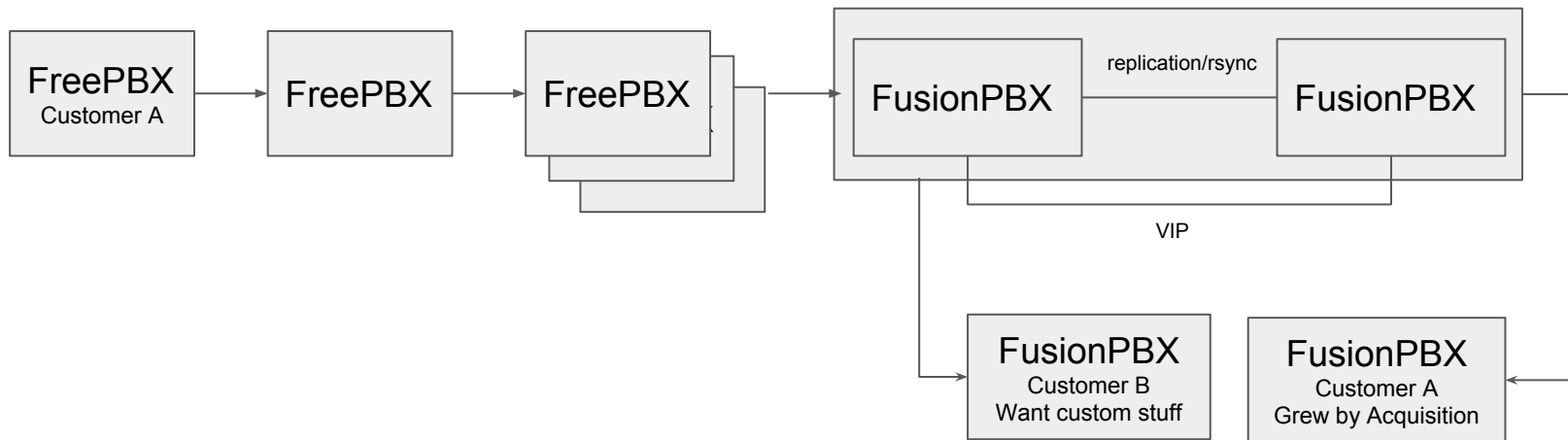
Issues:

➔ Can't easily help a customer grow - endpoints would need to change
➔ No central phone provisioning server

➔ Can't take the standalone FusionPBX's out of service for maintenance or hardware upgrade without causing an outage
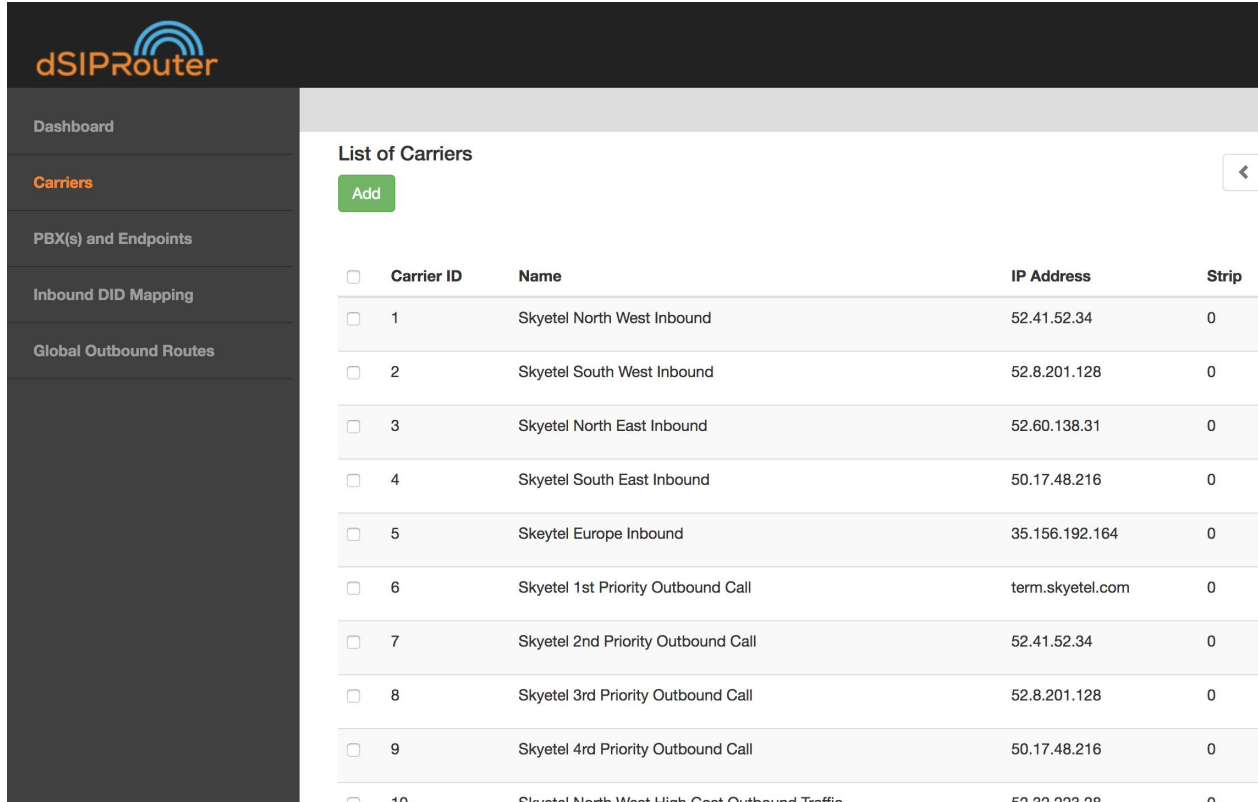➔ No central DID management

Problems we are trying to solve (SIP Trunking)

Problem Space 1

Mitel

Mitel

Mitel

Mitel

FreePBX / FusionPBX

Problem Space 2

Panasonic

Avaya

SBC

Problem Space 3

FreePBX
(on premise)

FusionPBX
(on premise)

Backend SIP Provider

Architecture

9 minute install

Web UI (Python / Flask)	Job Scheduler (cron)	
Kamailio	RTPEngine	NGINX
MySQL		Docker
Physical / Virtual Hardware (Debian 9.x)		

Demo (UI Walk-thru)

Demo

FusionPBX Domain Routing

FusionPBX Provisioning

Demo (FusionPBX Domain Routing)

Demo (FusionPBX Provisioning)

http://dsiprouter.org/app/provision/8c8590990a08

http://fusionpbx1/app/provision/8c8590990a08

http://fusionpbx2/app/provision/8c8590990a08

UA

UA

UA

dSIPRouter

FusionPBX1
domainA.com
domainB.com

FusionPBX2
domainC.com
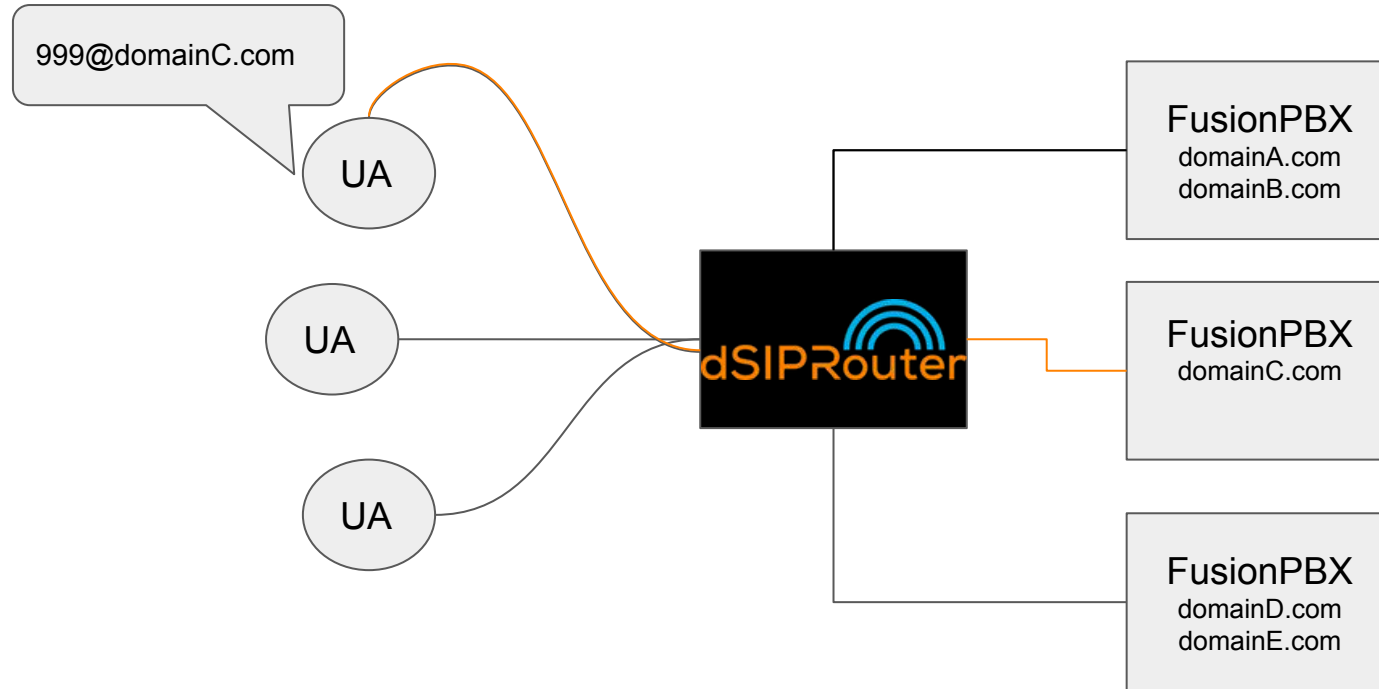
FusionPBX3
domainD.com
domainE.com
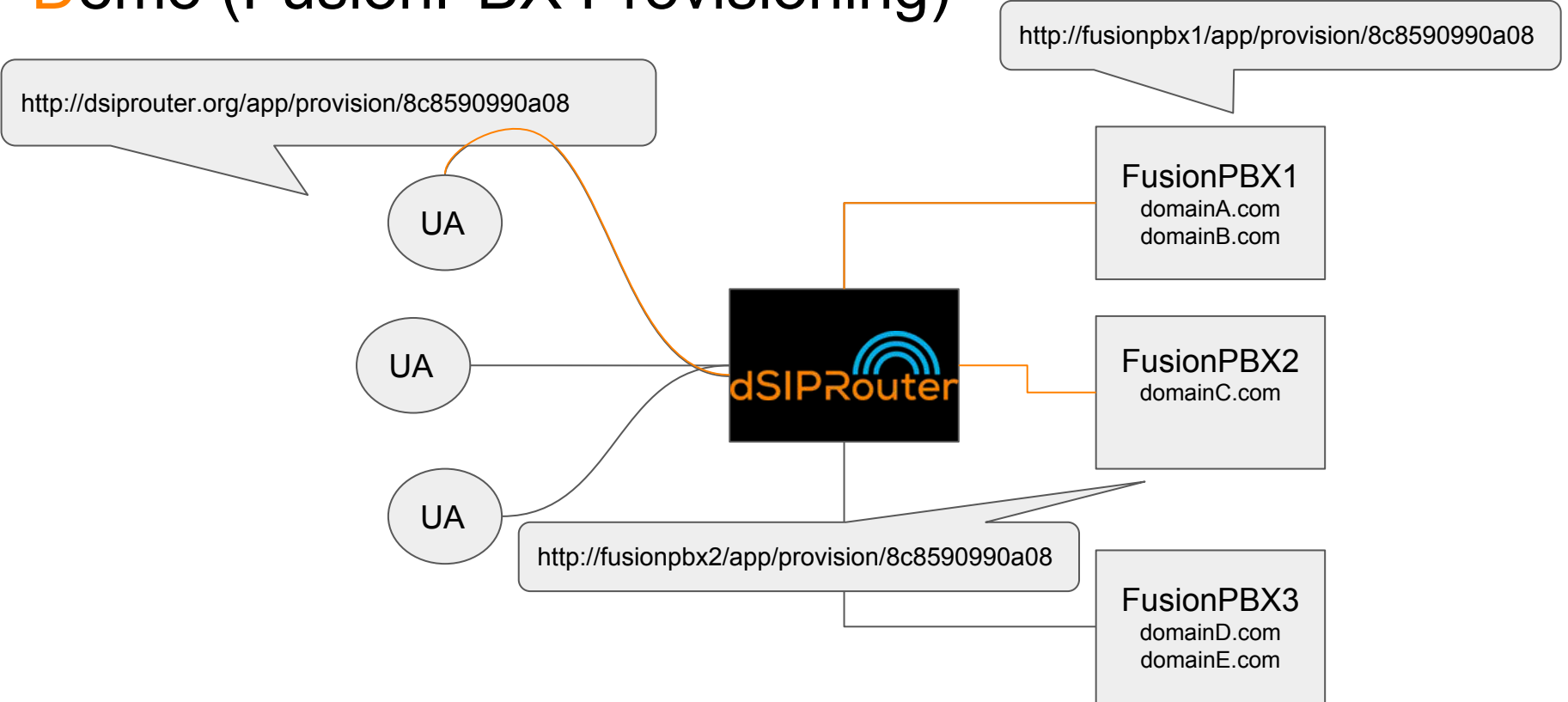
Roadmap

Features	v0.40 (Will Release Today)	V0.50 (August)
Installation	● Added support for Docker	Debian 9.next support
Docker Support & Orchestration	NGINX is provisioned or HTTP Proxy Provisioning	● UI, Kamailio and RTPProxy will be containerized ● Ability to deploy to Kubernetes
UI	Added new logo and fixed UI bugs	● New UI Framework ● RestFul Interface
SIP Trunking	● Allow UA Registration	● Ability to limit concurrent calls
PBX Hosting	● FusionPBX HTTP Provisioning	UI Monitoring of Domain Syncing

Questions

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t: @dsiprouter
w: dsiprouter.org

github: https://github.com/dOpensource/dsiprouter