Getting Started With Open Source Telephony

A Beginners Guide to Asterisk

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Agenda

- **Summary of Asterisk and Distributions**
  - Asterisk is a toolkit
  - Distros are more complete package with GUI
- **Getting started using Asterisk**
  - Architecture - Linux + Asterisk
  - Difference between CLI and GUI
  - Versioning
  - Basics
  - Resources
  - Training classes
- **Digium and Asterisk**
- **AstriCon 2016**

Getting Started with Asterisk

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Getting Started with Asterisk

- Find it
- Install it
- Configure it

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What is Asterisk?

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An **Open Source** Communications Platform

- Software, written in C, that you put on an ordinary operating system—transforming that system into a communications engine.

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Software – A communications platform

A system through which **communications** flow, from one endpoint to another.

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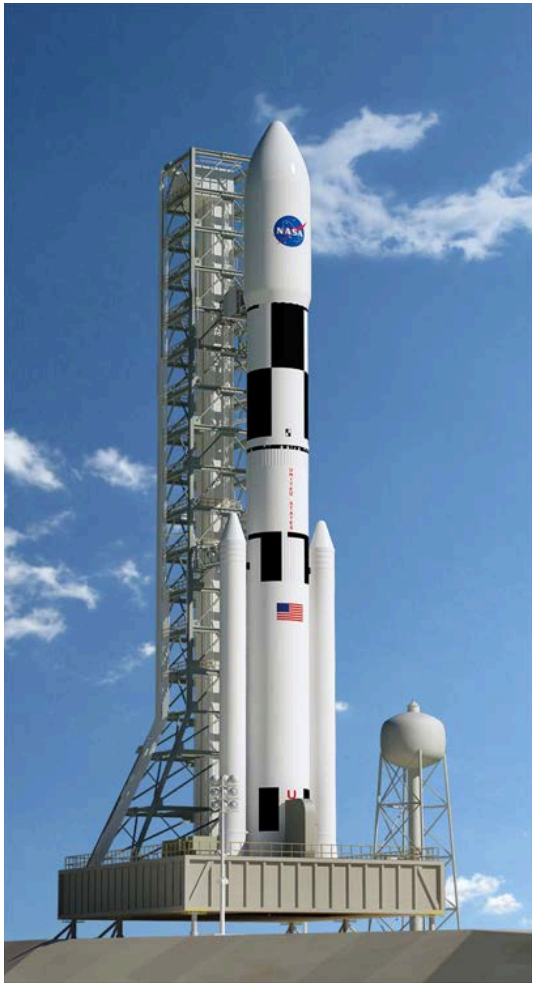
Open Source Communications **Platform**



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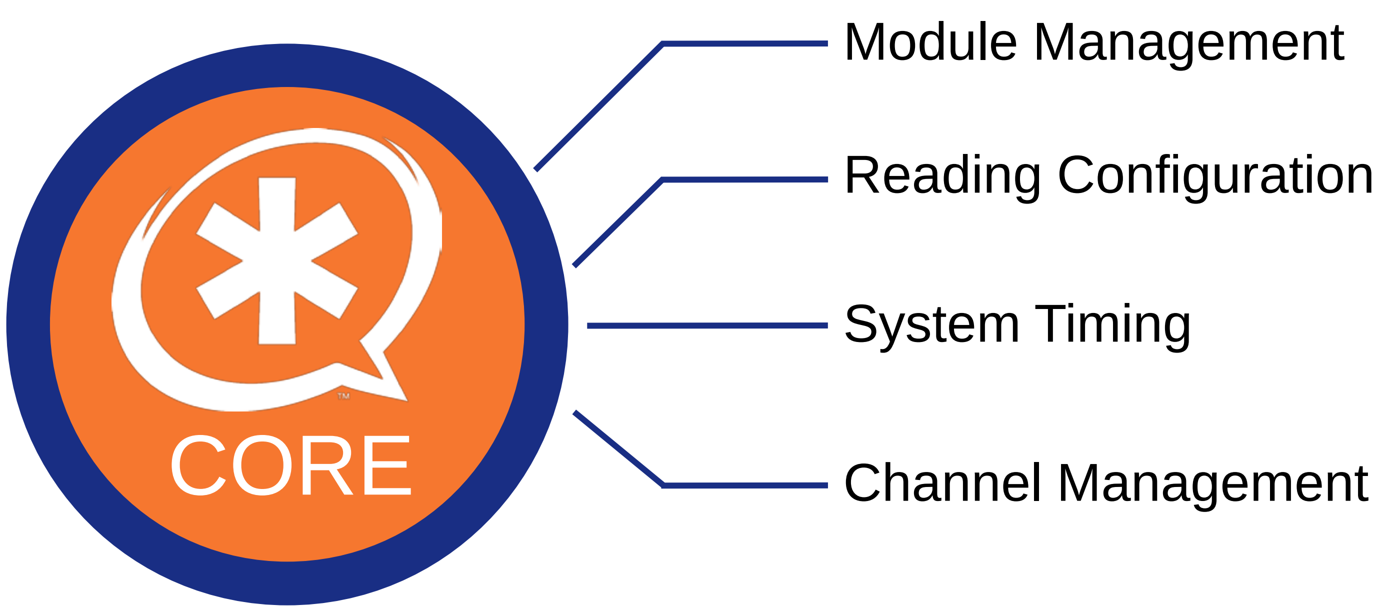
Software - Extensible Architecture

A simple core with only a few responsibilities



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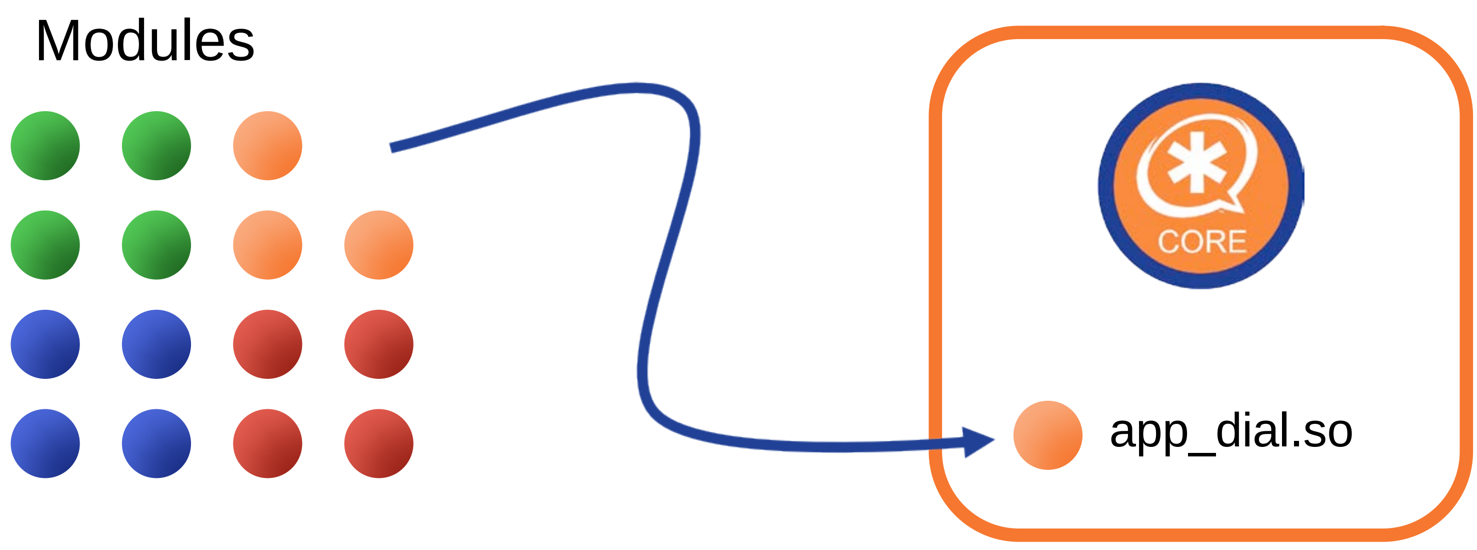
Software – Modular Architecture



- Use the native modules
- Use Asterisk's APIs to control and extend Asterisk – AMI, AGI, and ARI

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Preparing for Asterisk – Set up a host machine

- Old physical hardware
  - Laptop, rackmount or tower system
- Virtual machine
  - e.g. VirtualBox (on your Mac, Windows or Linux laptop!) www.virtualbox.org
- Cloud server
  - e.g. www.digitalocean.com or aws.amazon.com

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Finding Asterisk – Choose your path

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Asterisk Downloads

Download the currently supported versions of Asterisk and various Asterisk-related open source projects.

Asterisk Communications Framework • AsteriskNOW Software PBX • DAHDI • libpri

'Source' or
'Plain Vanilla'

Asterisk Communications Framework

Asterisk is an open source toolkit for building communications applications. For a more detailed explanation, check out the Get Started section. For more information on how to use Asterisk, see the Configuration and Operation sections of the wiki.

Download Asterisk

Latest Version - 13.3.2

ChangeLog All Asterisk Versions

AsteriskNOW,
a PBX 'distro'.

AsteriskNOW Software PBX

AsteriskNOW is the premier, ready-to-run distribution of open source Asterisk. AsteriskNOW is an ISO image that installs Linux, Asterisk and the FreePBX GUI in a single, simple install. For more information, including installation instructions, check out the AsteriskNOW page.

AsteriskNOW 6.12 32-bit   AsteriskNOW 6.12 64-bit

Version 6.12.65-26

www.asterisk.org/downloads

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Choosing Asterisk - Source

- Install a Linux operating system
- Set up networking
- Configure software repositories
- Install Asterisk dependencies
- Download and install Asterisk, DAHDI, LibPRI from provided scripts.

And you will have an unconfigured, pristine, ready to configure “Asterisk Configuration Framework”.

But it is not a PBX, or much of anything yet. . .

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Source – a glance at configuration

```
     Aor:  <Aor..............................................>  <MaxContact>
   Contact:  <Aor/ContactUri................................>  <Status....>  <
RTT(ms)..>
 ===============================================================================
==========

     Aor:  6001                                                          1

 ParameterName         : ParameterValue
 ======================================
 authenticate_qualify : false
 contact              :
 default_expiration   : 3600
 mailboxes            : 6001@default
 max_contacts         : 1
 maximum_expiration   : 7200
 minimum_expiration   : 60
 outbound_proxy       :
 qualify_frequency    : 0
 remove_existing      : false
 support_path         : false

asterisk13*CLI> pjsip show endpoints_
```

```
[dpma_endpoint]
type=endpoint

;=============TRANSPORTS====================
;
[transport-udp]
type=transport
protocol=udp
bind=0.0.0.0
;==============ENDPOINT PHONES======================
;

[endpoint_defaults](!)
type=endpoint
context=localphones
disallow=all
allow=ulaw,gsm

[6001]
type=aor
max_contacts=1
mailboxes=6001@default
```

- Configure phones, endpoints, services by editing text files in Linux, or you can set up databases.
- Manage Asterisk through the “Asterisk CLI”.

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Source – example of configuring a phone

extensions.conf

[localphones]

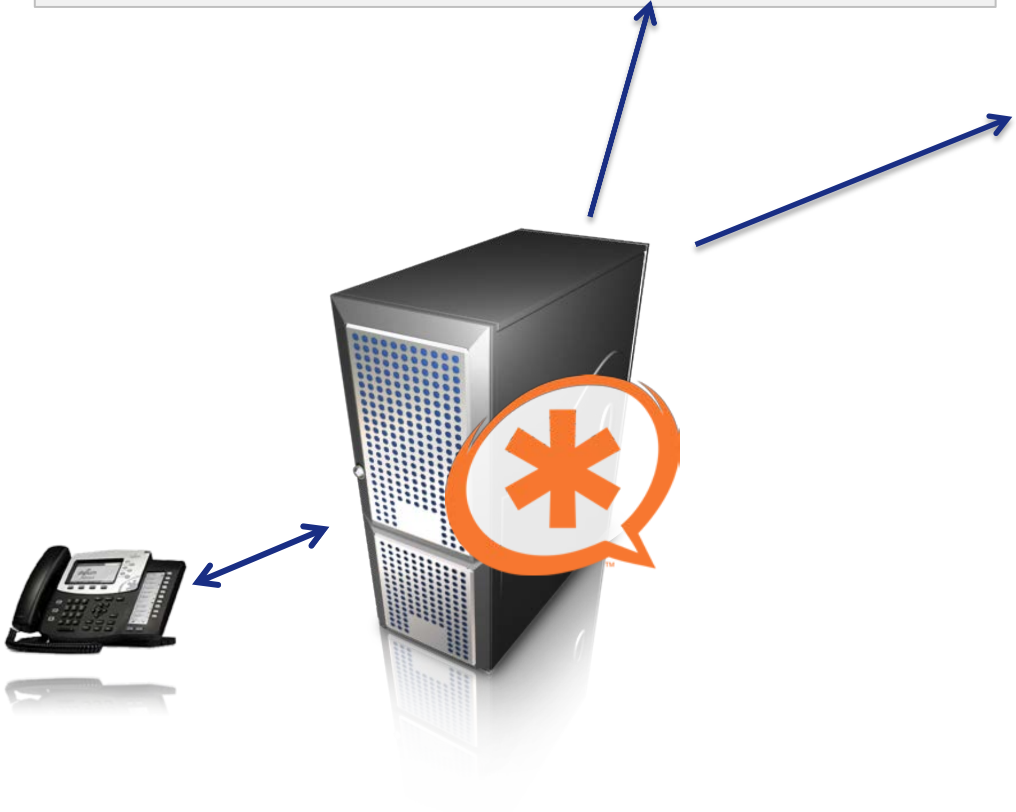
exten => **6001**,1,Dial(PJSIP/6001,30)
 same => n,Voicemail(6001@default)
 same => n,Hangup()

pjsip.conf

[6001]
type=endpoint
context=default
disallow=all
allow=ulaw
transport=simpletrans
auth=auth6001
aors=6001

[auth6001]
type=auth
auth_type=userpass
Password=MyP@ssw0rd
username=6001

[6001]
type=aor
contact=sip:6001@192.0.2.1:5060



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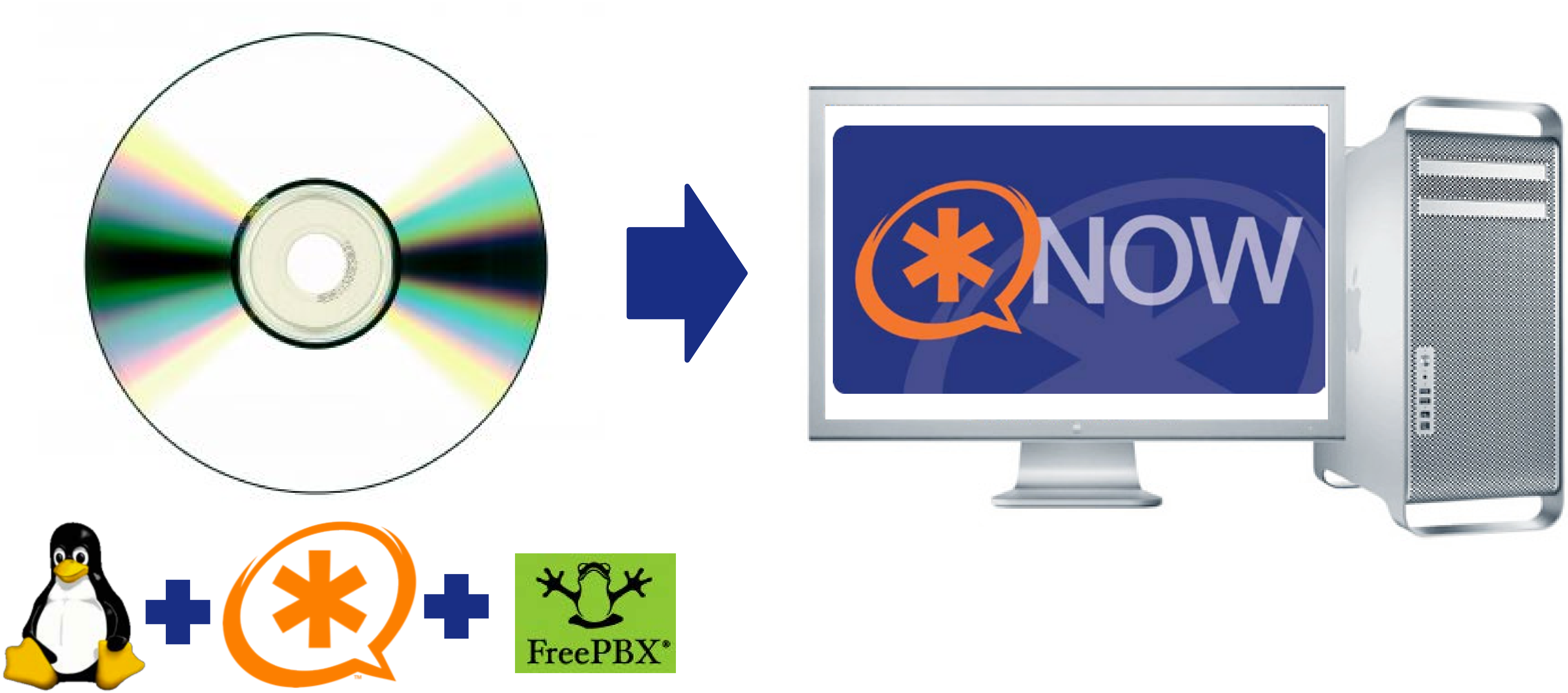
Choosing Asterisk – a distribution



- Download and install the AsteriskNOW .iso
- You'll have a PBX system for configuration.

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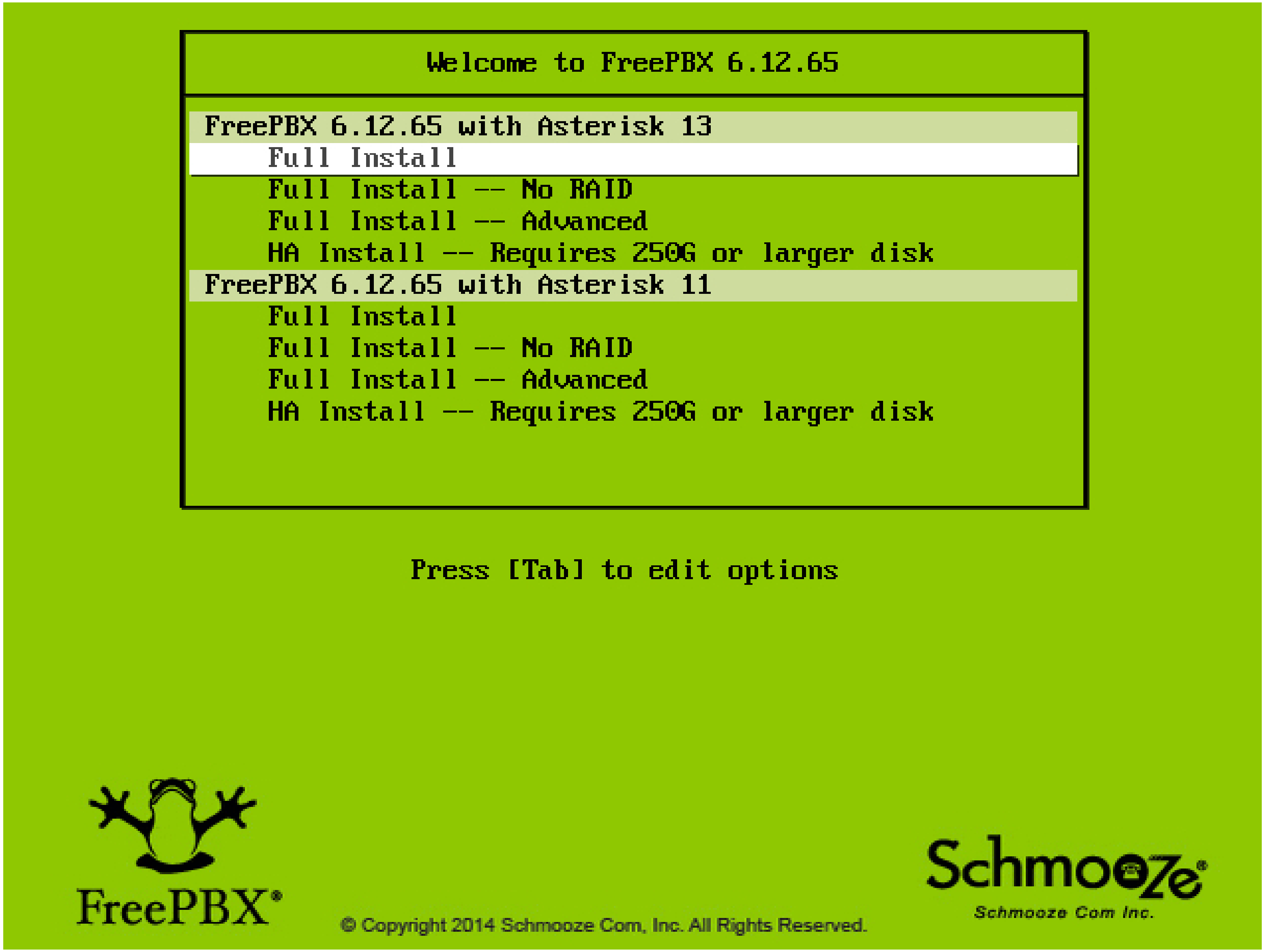
AsteriskNOW



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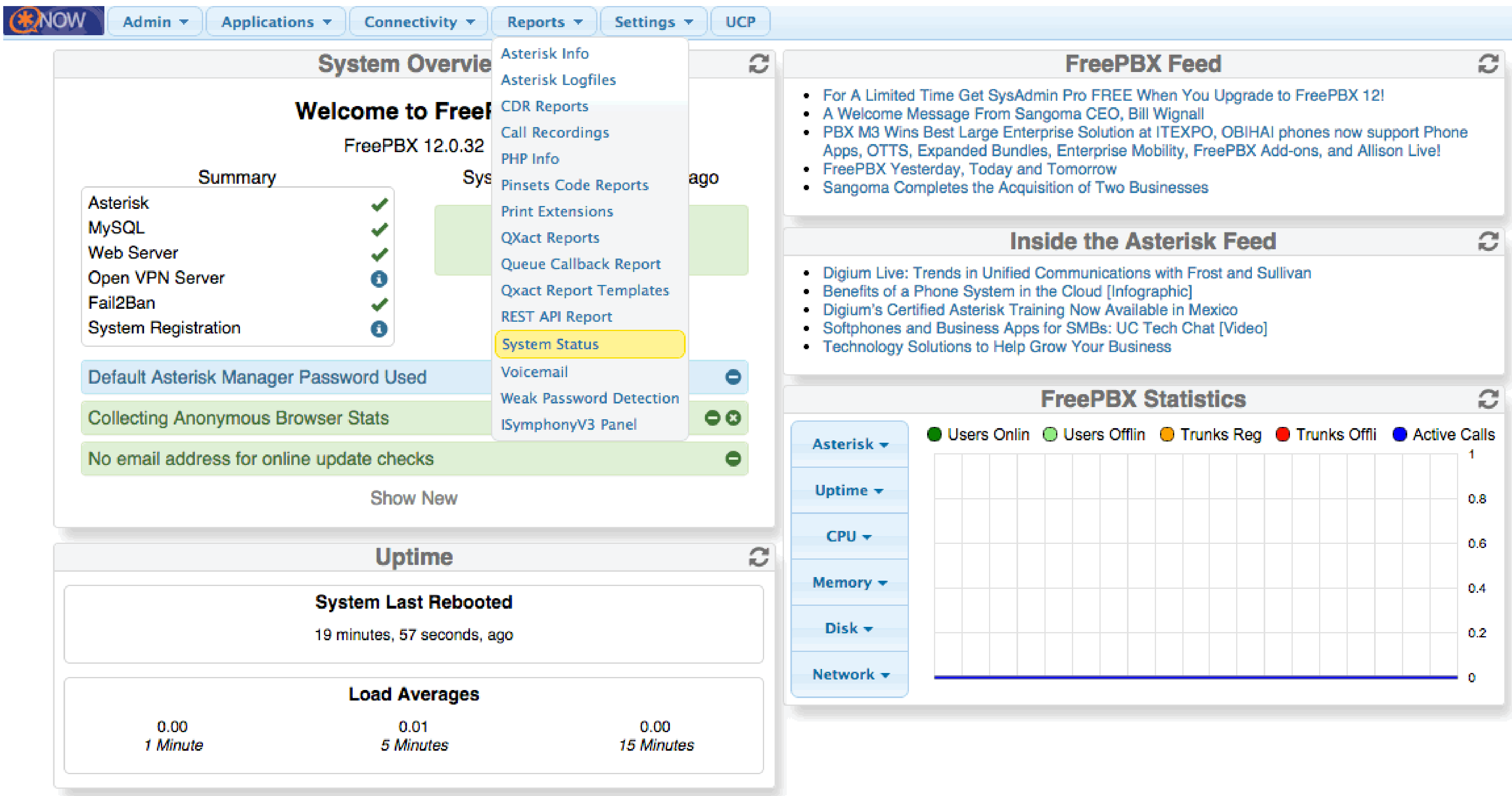
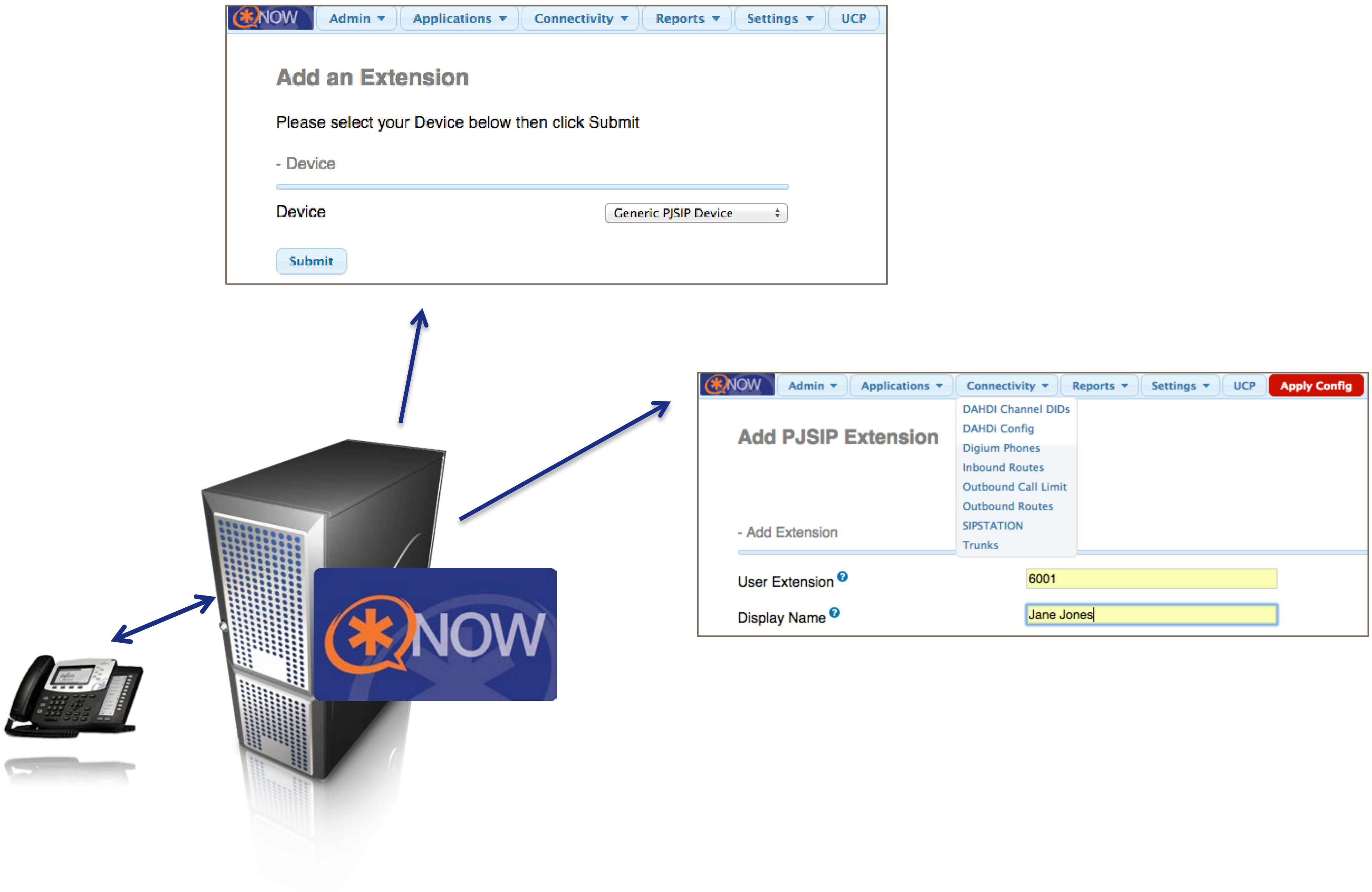
Distribution – a glance at configuration



Distribution – example of configuring phone



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Asterisk – Find it.

http://www.asterisk.org/downloads

Source

Distribution

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Asterisk – Install it.

Source

https://wiki.asterisk.org/wiki/display/AST/Beginning+Asterisk

http://blogs.digium.com/2015/02/24/install-asterisk-13-pjsip-centos-6/

Distribution

https://wiki.asterisk.org/wiki/display/AST/Installing+AsteriskNOW

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Asterisk – Configure it.

Documentation & best practices

https://wiki.asterisk.org/wiki/display/AST/Home

https://wiki.freepbx.org/display/FPG/Configuring+your+PBX

Training

https://www.digium.com/en/training/asterisk

User lists and Forums (both asterisk and freepbx)

https://community.asterisk.org/

http://community.freepbx.org/

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Community

http://www.asterisk.org/community

http://www.asterisk.org/community/astricon-user-conference

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Digium and Asterisk

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AstriCon 2016

- AstriCon is the annual Asterisk users conference
- Attendees will learn about
  - Trends in Asterisk use
  - The growing Asterisk ecosystem
  - The newest applications and a wide range of technical topics from Asterisk developers, users and entrepreneurs.

Digium SIP Trunking

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digium Cloud Services

- ## Metered Rate Plan
  - Works well for businesses that may need more flexibility in their communications week to week.
  - Priced on set rate per minute of usage.
  - Dynamically increase call capacity.
  - Built to 10 channels by default
- ## Channelized Rate Plan
  - Perfect for businesses that prefer a set, predictable monthly phone bill.
  - Unlimited inbound and outbound local and long distance calls on a per channel per call basis.
  - Channels can always be added for more capacity.

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Introducing

Digium® Phones

Changing the way the world communicates. *Again.*

Digium Phone Models

	D40/D45 Entry-level	D50 Mid-level	D70 Executive-level
	Digium's entry-level phone with 2 line keys. This is Digium's best value phone designed for any employee in the company.	Digium's mid-level phone with 4 line keys and 10 rapid dial/busy lamp field keys for your most important contacts.	Digium's executive-level phone with 6 line keys designed for administrators and executives who need to manage up to 100 contacts.
Line Keys	2	4	6
Feature Keys	4	6	10
Rapid Dial/ Busy Lamp Field Keys	0	10 keys	10 keys - 100 contacts
Ethernet LAN and PC Port	10/100Base-T (D40) 10/100/1000Base-T (D45)	10/100Base-T	10/100/1000Base-T

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Digium VoIP Gateways

G800 Octal T1/E1/PRI appliance

G400 Quad T1/E1/PRI appliance

G200 Dual T1/E1/PRI appliance

G100 Single T1/E1/PRI appliance

- Digital TDM (T1/E1/PRI) to SIP Appliances
- Designed and built by Digium
- No moving parts
- Field proven reliable design

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Digium Telephony Cards

- **Full line of PCI-E and PCI cards for your Asterisk Install**
  - Analog Telephony Devices – Connect to traditional telephony lines and phones
  - Digital Telephony Devices – Selectable E1/T1/J1 PRI ideal for creating high density solutions
  - BRI –European Basic Rate Interface Card
  - Voice Processing – G.729/G.723 Transcoding card

Asterisk Add-Ons

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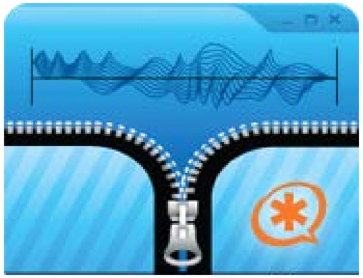

- G.729 - Reduces the network bandwidth used by each VoIP call, without sacrificing call quality
- Digium Phone Module for Asterisk - The DPMA is a binary Asterisk module that provides a secure communications channel between Digium phones and Asterisk which manage the phones and provides direct access to Asterisk's internal applications.
- High Performance Echo Cancellation - Digium's High Performance Echo Cancellation (HPEC) module can help eliminate the most common types of echo heard on PSTN connections.

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The Series Continues

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Please join us for the next webinar in the series covering the Asterisk REST Interface

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Thank you!

Q&A

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