

Running asterisk on embedded
systems

Why embedded?

Why embedded?

low cost

Why embedded?

small size

Why embedded?

low power

Why embedded?

quiet

Why embedded?

reliable

What do you get?

What do you get?

Control over telephony features like:

Caller ID

What do you get?

Control over telephony features like:

Voicemail and Message Waiting Indicator

What do you get?

Control over telephony features like:

Call Forward

What do you get?

Control over telephony features like:

Call Waiting

What do you get?

Control over telephony features like:

Call Transfer

What do you get?

Control over telephony features like:

Call Pickup

What do you get?

Control over telephony features like:

Call Parking

What do you get?

Control over telephony features like:

Music On Hold

What do you get?

Control over telephony features like:

Interactive Voice Response

What do you get?

Control over telephony features like:

Click to Dial

What's missing?

What's missing?

support for CPU intensive codecs (G.729)

What's missing?

support for Text to Speech

What's missing?

support for Voice Recognition

How to?

How to?

The hard way:

How to?

The hard way:

build the toolchain for the target platform

How to?

The hard way:

create a makefile for cross compilation

How to?

The hard way:

fix your cross compile issues

How to?

The hard way:

build the asterisk package(s)

How to?

The hard way:

build the asterisk package(s)

- asterisk 1.4.7 (first release with proper support for cross compilation)

How to?

The hard way:

install the asterisk package(s)

How to?

The hard way:

configure asterisk

How to?

The easy way:

How to?

The easy way:

find a platform that is already supported by
the open source community

How to?

The easy way:

install the appropriate firmware

How to?

The easy way:

install the asterisk package(s)

How to?

The easy way:

configure asterisk

Specifics

Specifics

Low memory

Specifics

Low memory

slim the config: `modules.conf`

Specifics

Low memory

slim the config: modules.conf

```
[modules]
```

```
autoload=yes
```

```
noload => whatever_you_don't_need.so
```

Specifics

Low memory

```
slim the config: modules.conf  
[modules]  
autoload=no  
load => whatever_you_need.so
```

Specifics

Running from flash

Specifics

Running from flash

mount the fs with noatime option

Specifics

Running from flash

mount /var/run in memory

Specifics

Running from flash

mount /var/log in memory

Specifics

Running from flash

mount /var/log in memory
- properly configure logrotate

Specifics

Running from flash

mount /var/log in memory
- configure remote syslog

Specifics

Running from flash

keep `.asterisk_history` in memory

Specifics

Running from flash

keep astdb in memory?

Practical example

Practical example

* on slug

Practical example

* on slug



Practical example

* on slug



Practical example

* on slug



Practical example

* on slug

Practical example

* on slug

step 1 – install alternative firmware

Practical example

* on slug

step 1 – install alternative firmware
- unslung

Practical example

* on slug

- step 1 – install alternative firmware
- unslung
 - openslug

Practical example

* on slug

step 1 – install alternative firmware

- unslung
- openslug
- debian

Practical example

* on slug

step 1 – install alternative firmware

- unslung
- openslug
- debian
- openwrt

Practical example

* on slug

step 1 – install alternative firmware

www.nslu2-linux.org/wiki/Main/HomePage

Practical example

* on slug

step 2 – perform an update/upgrade

Practical example

* on slug

step 2 – perform an update/upgrade
- ipkg update

Practical example

* on slug

- step 2 – perform an update/upgrade
- ipkg update
 - ipkg upgrade

Practical example

* on slug

step 3 – install asterisk

Practical example

* on slug

step 3 – install asterisk

- ipkg install asterisk(14)

Practical example

* on slug

step 4 – configure asterisk

Practical example

* on slug

step 4 – configure asterisk
- asterisk.conf

Practical example

* on slug

step 4 – configure asterisk

- asterisk.conf

- astrundir => pid file location

Practical example

* on slug

step 4 – configure asterisk

- asterisk.conf

- astrundir => pid file location

- astlogdir => logs location

Practical example

* on slug

step 4 – configure asterisk
- logger.conf

Practical example

* on slug

step 4 – configure asterisk

- logger.conf

- messages => logging level

Practical example

* on slug

step 4 – configure asterisk
- configure VoIP protocols

Practical example

* on slug

done

Practical example

* on slug

more info:

Practical example

* on slug

more info:

www.nslu2-linux.org

Practical example

* on slug

more info:

www.nslu2-linux.org

tech.groups.yahoo.com/group/nslu2-asterisk

Demo and Q&A

Demo and Q&A

Thank you
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