



February 12<sup>th</sup> - 13<sup>th</sup> 2007



# PHP Phone Home

## An introduction to PHP & AGI

Sean Coates

Session Sponsored by:

**php** | architect  
The Magazine For PHP Professionals

# This talk is not...

- ... about REST
- ... about Web Services
- ... by Paul Reinheimer
- In fact, I am not Paul Reinheimer
- The REST talk is gone – this is the replacement
- The Zend Certification talk will be today at 4PM in Room 150

# About Me (the obligatory ego slide)

- Web Development for 9 years
- Full PHP for 7 years
- Documentation, Web, Other Infrastructure
- php|architect Editor-in-Chief (2 years)
- php|tek, php|works conferences (organization)
- First Zend PHP 5 Certified in Canada
- Other stuff (-:

# Phones

- Switch from community (party lines) to family
- Switch from family to personal (mobile)
- Universal
- Desk, Cell, Home -- lots of lines
- Many carry their own phone everywhere

# Email is broken

- spam is overwhelming
- filters don't work
- there is no assured delivery
- people don't answer emails

# Phone + Internet

- net2phone, Skype, Vonage, etc
- VOIP
- IVR (MTA = 1 877 630 6202)
- Soft Phone (x777)
- Multi-point ring: 514 907 0775

# VOIP is cheap

- Time of day discount a thing of the past
- 2¢/min in North America
- e.g. Spain = 2¢/min
- DIDs for 2.50/month
- PBX = CHEAP

# Interactive Voice Response

- “IVR”
- Proprietary
- Tellme: <http://studio.tellme.com/>
- VoiceXML

```
<vxml version="2.0">  
  <form id="hello">  
    <block>Hello World!</block>  
  </form>  
</vxml>
```



# Asterisk

- Open source
- “The Apache of Phones”
- Price: free.
- Compared: thousands of dollars, with no components
- Voicemail, Conferencing, Queueing



# Asterisk

- easy to install
- easy to configure
- trunk, extension config
- extension example:

```
exten => ${EXT_SEAN}, 1, Ringing  
exten => ${EXT_SEAN}, 2, Dial(${CLIENT_SEAN}, ${RINGTIMEOUT})  
exten => ${EXT_SEAN}, 3, VoiceMail(su${EXT_SEAN}@staff)  
exten => ${EXT_SEAN}, 4, Hangup
```

# Asterisk as IVR

- AGI = Asterisk Gateway Interface
- CGI (http)
- Like CGI, but for phone calls
- AGI, EAGI (audio), FastAGI (remote), DeadAGI

# AGI


- Asterisk Console
- Extension

```
exten => 500, 1, agi, firsttest.php  
exten => 500, 2, hangup
```

## Simple Script:

```
#!/usr/local/bin/php5  
<?php  
echo "SAY NUMBER 42 "\n";  
sleep(5);  
?>
```

# Why Sleep?



```
#!/usr/local/bin/php5
<?php
echo "SAY NUMBER 42 "\n";
sleep(5);
?>
```

- AGI is interactive
- Wait for return or
- Sound to stop playing

# A Better Script

- Actually read headers and input
- But ignore them

```
#!/usr/local/bin/php5
<?php
// read headers
while (fgets(STDIN) != "\n");
echo "SAY NUMBER 42 "\n";
$result = fgets(STDIN);
?>
```

# Headers

- Name: Value pairs
- like HTTP
- example:

```
Array (  
  [agi_request] => firsttest.php  
  [agi_channel] => IAX2/sean@sean/2  
  [agi_language] => en  
  [agi_type] => IAX2  
  [agi_uniqueid] => 1164592919.38  
  [agi_callerid] => "Sean" <777>  
  [agi_dnid] => 500  
  [agi_rdnis] => unknown  
  [agi_context] => internal  
  [agi_extension] => 500  
  [agi_priority] => 1  
  [agi_enhanced] => 0.0  
  [agi_accountcode] =>  
)
```

# Origination

- Asterisk Manager API
- Call files:
- Must be owned by asterisk user (utime)
- Must be moved into Asterisk's call files spool
- Sample:

```
Channel: SIP/777@mta.phparch.com
MaxRetries: 2
RetryTime: 60
WaitTime: 30
Context: staff
Extension: 200
Priority: 1
```

# PHP AGI

- Silly to try to do everything, yourself.
- PHP Handles CGI – PHPAGI handles AGI
- Handles headers
- Most AGI commands
- Wrappers (`text2wave == festival`)

# Simple PHP AGI Example

```
#!/usr/bin/php -q
<?php
set_time_limit(30);
require('phpagi.php');

$agi = new AGI();
$agi->answer();
$agi->text2wav("Hello. Let's enter some text.");
$text = $agi->text_input('NUMERIC');
$agi->text2wav("You entered $text");
$agi->text2wav('Goodbye');
$agi->hangup();
?>
```

## Related Links

- VOIP Wiki: <http://voip-info.org/wiki/>
- VoiceXML Spec: <http://www.w3.org/TR/voicexml20/>
- TellMe Studio: <http://studio.tellme.com>
- AGI Spec: <http://home.cogeco.ca/~camstuff/agi.html>
- PHPAGI: <http://phpagi.sf.net/>
- Email me at: [sean@php.net](mailto:sean@php.net)
- ...or call me: <sip:777@mta.phparch.com>