



Mister House Meets Asterisk

Ed Guy

EMCSoftware
edguy@emcsw.com

10/14/05



“There will Come Soft Rains”

- ▶ “In the living room the voice-clock sang, Tick-tock, seven o'clock, time to get up, time to get up, seven o'clock! As if it were afraid that nobody would. The morning house lay empty. The clock ticked on, repeating and repeating its sounds into the emptiness. Seven-nine, breakfast time, seven-nine.
- ▶ In the kitchen the breakfast stove gave a hissing sigh and ejected from its warm interior eight pieces of perfectly browned toast, eight eggs sunny side up, sixteen slices of bacon, two coffees and two cool glasses of milk.
- ▶ "Today is August 4, 2026," said a second voice from the kitchen ceiling, "in the city of Allendale, California." It repeated the date three times for memory's sake. "Today is Mr. Featherstone's birthday. Today is the anniversary of Tilita's marriage. Insurance is payable, as are the water, gas, and light bills



Enablers





Components

- ◀ Mister House Program
 - Perl
- ◀ Festival Text to speech
 - A reasonable voice, e.g., *voice_cmu_us_slt_arctic_hts*
 - Text to wav
- ◀ Asterisk
 - `/var/spool/asterisk/outgoing`
- ◀ 7960, or any auto-answer speaker phone(s)
- ◀ X-10
 - Serial port to x-10 interface
 - Lamp Modules
 - Appliance Modules
 - Sensors



History

- ▶ Bruce Winter, Primary Author, December 1996
- ▶ 06/04 Code for Musica whole house audio, rss feeds, xAP Slimserver
- ▶ - 07/04 Code for ICQ, vocp, tivo, Alpha LED displays, xAP IR for RedRat, RoboSapien.
- ▶ - 08/04 Mailing list reaches 600 members.
- ▶ - 09/04 Support for SVG floorplans, mp3 ripping, ebay monitoring, siteplayer, irc.
- ▶ - 11/04 Support for servo motors, the ESRA robot, cell phone minutes monitoring, motherboard monitoring.
- ▶ - 03/05 Support for serving multimedia files, cell phone minute monitors, shopping lists.
- ▶ - 05/05 Support for distributed xAP speech, bluetooth proximity detection.



Daily Schedule

◀ Morning (school days)

- 7:45 *"Breakfast, a good idea it would be"*
- 8:00 Weather
- 8:05 *"brush your teeth"*
- 8:10 *"pack your lunch" ... "remember your Gym Clothes"*
- 8:15 *"Time for school"*

◀ Mid Day

- Stock Watch
- Noon updated weather
- 5pm *"Time to go home"*

◀ Evening

- Sunset +12 minutes Living Room Light on
- Sunset +20 minutes Lamp Post
- 8:30 *"Time for bed"*



Yesterday's Log

- ▶ 10/13/05 07:30:00 AM normal: *Please remember to take out the garbage*
- ▶ 10/13/05 07:50:00 AM normal: A good idea breakfast would be
- ▶ 10/13/05 08:00:00 AM normal: good morning. Mister house says It is eight o clock. Temperature is . Sunset is at 6:20 PM0.0/ 53/ 53 0% 95%
- ▶ 10/13/05 08:05:00 AM normal: `cat /misterhouse/mh/data/web/weather_conditions.txt`
Temperarure is now 53.7
- ▶ 10/13/05 08:07:00 AM normal: mister house says did you brush your teeth
- ▶ 10/13/05 08:12:00 AM normal: mister house says did remember your lunch, flute, and gym clothes
- ▶ 10/13/05 08:15:00 AM normal: mister house says It is time for school. Ring Ring goes the bell.



Yesterday's Log(2)

- ▶ 10/13/05 11:15:00 AM normal: mister house says it is almost time to get tommy
- ▶ 10/13/05 12:00:00 PM normal: good afternoon. Mister house says It is eight o clock. Temperature is . Sunset is at 6:20 PM0.0/ 54/ 54 0% 93%
- ▶ 10/13/05 12:05:02 PM normal: Market alert: Owens corning has fallen 11.94 percent to 2.95.
- ▶ 10/13/05 01:05:02 PM normal: Market alert: Owens corning has fallen 13.43 percent to 2.90.
- ▶ 10/13/05 05:00:00 PM normal: Time to go home. Yeah right
- ▶ 10/13/05 08:30:00 PM normal: it is bedtime
- ▶



Configuration Data

- latitude=40.4423
- longitude=-74.2552
- time_zone=-5
- default_temp=98.6
- city=MORRISTOWN
- zone=MORRIS NJ
- stocks_names=MSFT:Microsoft CSCO:Cisco_Systems
OWENQ.OB:Owens_corning DORL:doral_financial HC:Hanover
- tracking_callsign=kc2rlm-1
- asterisk_phones=default=>i202, kitchen=>i202, office=>i201, stu=>207,
stu2=>285, edcell=>16316457292@sphone.vopr.vonage.net,

```
Latitude: 40.4423, Longitude: -74.2552, Time Zone: -5
sunrise=7:07 AM sunset=6:19 PM
sunrise twilight=6:39 AM sunset twilight=6:46 PM
The moon is Three-Quarter Waxing, 84% bright, and 10 days old
The next full moon is on Monday, October 17th
10/14/05 12:38:41 AM Read 24 trigger entries
Reading alarm clock data (Fri, Oct 14 12:38 AM):
- 5/27/98 8:15 AM | Remember dentist appointment!
- 12/25 10 am | Ho, Ho, Ho, Merry Christmas
- 50 7 * 1-6,9-12 1-5 | A good idea breakfast would be
- 07 8 * 1-6,9-12 1-5 | mister house says did you brush your teeth
- 12 8 * 1-6,9-12 1-5 | mister house says did remember your lunch, flute, and gym clothes
- 15 8 * 1-6,9-12 1-5 | mister house says It is time for school. Ring Ring goes the bell.
- 30 7 * * 1,4 | Please remember to take out the garbage
- 0 10,14,18,22 25 12 * | Ho, Ho, Ho, Merry Christmas
- 0 10,12,14,18,22 1 1 * | Happy, happy, new year one and all
- 0 9,13,20 31,1 12,1 * | Yearly notice: Write down car mileage
- 30 8,13,20 1,7 1,4,6,9 * | Tax notice: Send in estimated tax payment.
11 alarms set.
10/14/05 12:38:41 AM Rereading .menu code files.
display call with -tk 0. Text=MisterHouse auto restarted: abend 0
10/14/05 12:38:41 AM Parsing pollen forecast
Running: ./get_weather -city MORRISTOWN -state NJ &

Getting the current weather for MORRISTOWN, NJ
Getting the forecast for MORRISTOWN, NJ

Current conditions: No data available













The forecast is As of :
```

MisterHouse







 MrHouse Home	 Mail Headlines News	 MrHouse Modes
 Lights Appliances	 HVAC Weather	 Security Cameras
 Phone Calls VoiceMail Msgs	 TV/Radio Guide MP3 Music	 Speech
 Comics Pictures	 Events Calendar Clock	 Statistics Logged Data

Praise: What you receive when you are no longer alive.
 00:42:16 up 42 min, 1 user, load average: 2.06, 0.95, 0.56 Page Views: 477

MisterHouse

[Back](#)
[My MH](#)
[Menus](#)
[Search](#)
[Admin](#)

- About MrHouse
- About 3Com Audrey
- Browse MrHouse
- Browse Categories
- Browse Groups
- Browse Items
- Browse Widgets
- Setup MrHouse

Delete Run	SunSet2	time_now '\$Time_Sunset + 0:09'	set SLKLight 'ON'	NoExpire	06:29PM
Copy Delete Run	SunSet3	time_now '\$Time_Sunset + 0:09'	set STVRoom 'ON'	NoExpire	Thu 06:29PM
Copy Delete Run	SunSet4	time_now '\$Time_Sunset + 0:09'	set SDnHallLight 'ON'	NoExpire	Thu 06:29PM
Copy Delete Run	SunSet5	time_now '\$Time_Sunset + 0:12'	set SLawn 'ON'	NoExpire	Thu 06:32PM
Copy Delete Run	bedtime	time_now '8:30 pm'	speak 'it is bedtime'	NoExpire	Thu 08:30PM
Copy Delete Run	bedtime 2	time_now '8:30 pm'	set SUpHallLight 'ON'	NoExpire	Thu 08:30PM
Copy Delete Run	clean comics	time_now '5 am' and net_connect	run voice cmd 'Clean the daily...'	NoExpire	Thu 05:00AM
Copy			speak 'mister house says		Thu

[Refresh Recently Spoken Text](#)

- ◆ 10/14/05 12:46:33 AM normal:
- ◆ 10/14/05 12:38:40 AM ----- Restart -----
- ◆ 10/13/05 08:30:00 PM normal: it is bedtime
- ◆ 10/13/05 06:01:02 PM ----- Restart -----
- ◆ 10/13/05 08:30:00 PM normal: it is bedtime



Arbitrary Code

```
sub cycle
{
  $tl = new X10_Item('A3');
  my $i = 1;
  while ($i++ < 5)
  {
    set $tl "-95";
    print_log "-95";
    set $tl "+95";
    print_log "+95";
  }
  print_log "done";
}
```



[MisterHouse] Context

[macro-MH]

exten => s,1,noop(\${ARG1},\${ARG2})

exten => s,2,SetVar(VAL=\${\${ARG1} % 2})

exten => s,3,SetVar(MASK=\${\${ARG1} / 2})

exten => s,4,gotoif(\${\${VAL} = 0 }?99)

exten => s,5,system(/misterhouse/mh/bin/mhsend -host 192.168.1.1 -password xxxx
-run 'set \${ARG3} '\${ARG2}')\')

exten => s,6,playback(beep)

exten => s,7,SayPhonetic(\${ARG3})

exten => s,99,noop(\${ARG1},\${ARG2})

[MisterHouse-sub1]

; CMD is set to ON or OFF

exten => _X,1,SetVar(MASK=\${EXTEN})

exten => _X.,2,Macro(MH,\${MASK},\${CMD},\\${LR}light)

exten => _X.,3,Macro(MH,\${MASK},\${CMD},\\${office})

exten => _X.,4,Macro(MH,\${MASK},\${CMD},\\${DnHall}Light)

exten => _X.,5,Macro(MH,\${MASK},\${CMD},\\${UpHall}Light)



speak_proxy.pl

◀ Play/speak hooks

- `&Speak_pre_add_hook(\&etg_proxy_speak_play, 0, 'speak')`
if \$Reload;
- `&Play_pre_add_hook (\&etg_proxy_speak_play, 0, 'play')`
if \$Reload;

◀ sub etg_proxy_speak_play {

- if (\$mode eq 'speak')
 - ▶ `system(" echo $parms{text} | /usr/bin/text2wave -eval '(voice_cmu_us_slt_arctic_hts)' -scale 1.5 -F 8000 -o /tmp/message.wav");`
- elsif (\$mode eq 'play')
 - ▶ `system(" cp $parms{file} /tmp/message.wav");`
- open (FH,'>/var/spool/asterisk/outgoing/message')
 - ▶ `print FH "Channel: SIP/$SIPLINE\n";`
 - ▶ `print FH "MaxRetries: 0\n";`
 - ▶ `print FH "Callerid: Mr House <999999999>\n";`
 - ▶ `print FH "Extension: 999999999\n";`



Challenges

- ◀ The Right Voice
- ◀ Perl
- ◀ Too many ways
- ◀ ...Time Sink
- ◀ New Neighbors?
- ◀ Missing that '7960 with auto answer
- ◀ Sensor, too sensitive



What's Next

- ◀ Smart Water
- ◀ Heat/ac
- ◀ Calendar Hookup
- ◀ Blue Tooth Presence



Resources

- ✦ <http://www.misterhouse.com/>
- ✦ <http://www.x10.com/>
- ✦ <http://linuxha.sourceforge.net>
- ✦ <http://www.speech.cs.cmu.edu/festival/>
- ✦ <http://www.eguy.org/mh/>