

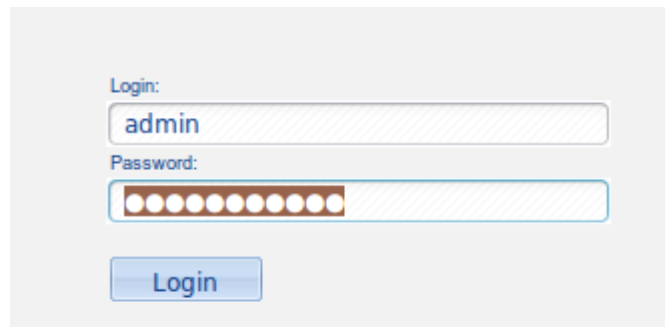
Quick Guide to Asterisk VQM

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This is a quick guide to show functionality of and graphical user interface of Asterisk Voice Quality Monitoring solution (Asterisk VQM 0.2-beta)

Login to the system

Typically we distribute Asterisk VQM as a VirtualBox VM image. After you have started VM in VirtualBox you just need to wait till the system boots and then it's ready to work. Start your browser and enter <http://192.168.0.107/vqm/> Please note that sometimes VM may assign a different IP address to the server, which you can check by logging into the system with user **root** and password **asteriskvqm** and then invoking **ifconfig** command. In most of the cases your browser will immediately show you this screen:

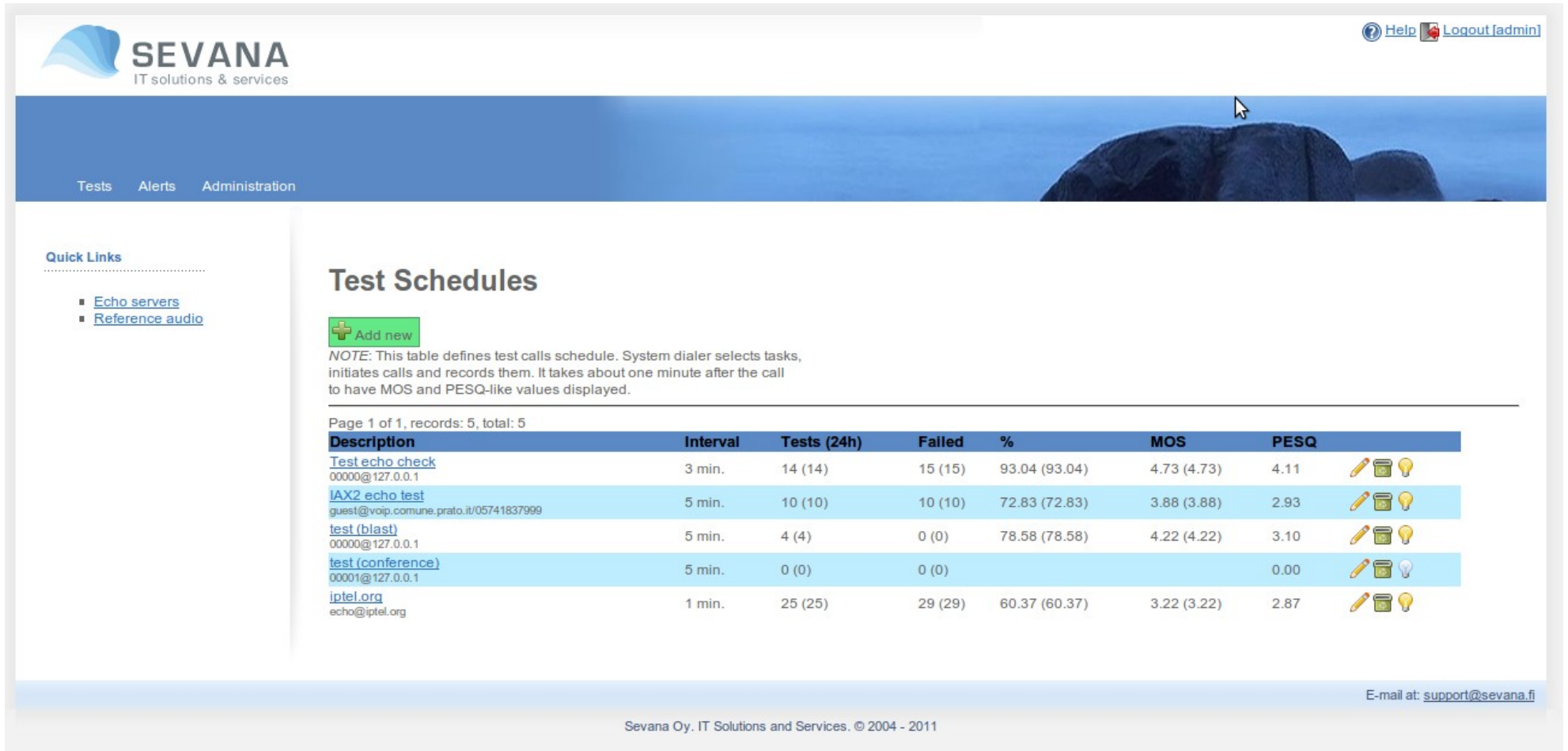


The screenshot displays a web-based login form. It consists of two input fields and a button. The first field is labeled 'Login:' and contains the text 'admin'. The second field is labeled 'Password:' and is filled with 12 dots. Below these fields is a blue button labeled 'Login'.

Enter **admin** as login name and **asteriskvqm** as your password.

Main screen

You will enter the main screen of the system listing all tests available:



The screenshot shows the main interface of the SEVANA system. At the top left is the SEVANA logo with the tagline "IT solutions & services". At the top right are links for "Help" and "Logout [admin]". Below the logo is a navigation bar with "Tests", "Alerts", and "Administration". On the left side, there is a "Quick Links" section with "Echo servers" and "Reference audio". The main content area is titled "Test Schedules" and includes an "Add new" button. A note explains that the table defines test call schedules. Below the note is a table with 5 records, showing columns for Description, Interval, Tests (24h), Failed, %, MOS, and PESQ. Each row also contains three icons: a pencil (edit), a trash can (delete), and a lightbulb (start/stop).

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Help Logout [admin]

Tests Alerts Administration

Quick Links
















- Echo servers
- Reference audio

Test Schedules

[+ Add new](#)

NOTE: This table defines test calls schedule. System dialer selects tasks, initiates calls and records them. It takes about one minute after the call to have MOS and PESQ-like values displayed.

Page 1 of 1, records: 5, total: 5

Description	Interval	Tests (24h)	Failed	%	MOS	PESQ	
Test echo check 00000@127.0.0.1	3 min.	14 (14)	15 (15)	93.04 (93.04)	4.73 (4.73)	4.11	  
IAX2 echo test guest@voip.comune.prato.it/05741837999	5 min.	10 (10)	10 (10)	72.83 (72.83)	3.88 (3.88)	2.93	  
test (blast) 00000@127.0.0.1	5 min.	4 (4)	0 (0)	78.58 (78.58)	4.22 (4.22)	3.10	  
test (conference) 00001@127.0.0.1	5 min.	0 (0)	0 (0)			0.00	  
iptel.org echo@iptel.org	1 min.	25 (25)	29 (29)	60.37 (60.37)	3.22 (3.22)	2.87	  

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You can Edit, Delete and Start/Stop (lamp-like icon) any test by clicking on correspondent icon.

Echo servers

One of the simplest call quality test is calling an echo server. When you click “Echo servers” link you can manage list of available echo servers:

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Quick Links

- [Echo servers](#)
- [Reference audio](#)

Protocol	Number
SIP	904@mouselike.org
SIP	05741837999@voip.comune.prato.it
IAX2	guest@voip.comune.prato.it/05741837999
SIP	*010600@ekiga.net
SIP	*031600@ekiga.net
SIP	*061600@ekiga.net
SIP	*248333@ekiga.net
SIP	*266301@ekiga.net
SIP	*318613@ekiga.net
SIP	18004664411@tf.voipmich.com
SIP	00000@195.162.49.23
SIP	4151595@services.sip.is
SIP	00000@127.0.0.1
SIP	00001@127.0.0.1
SIP	00002@127.0.0.1
SIP	echo@iptel.org

Add a new server:

Protocol:

Server:

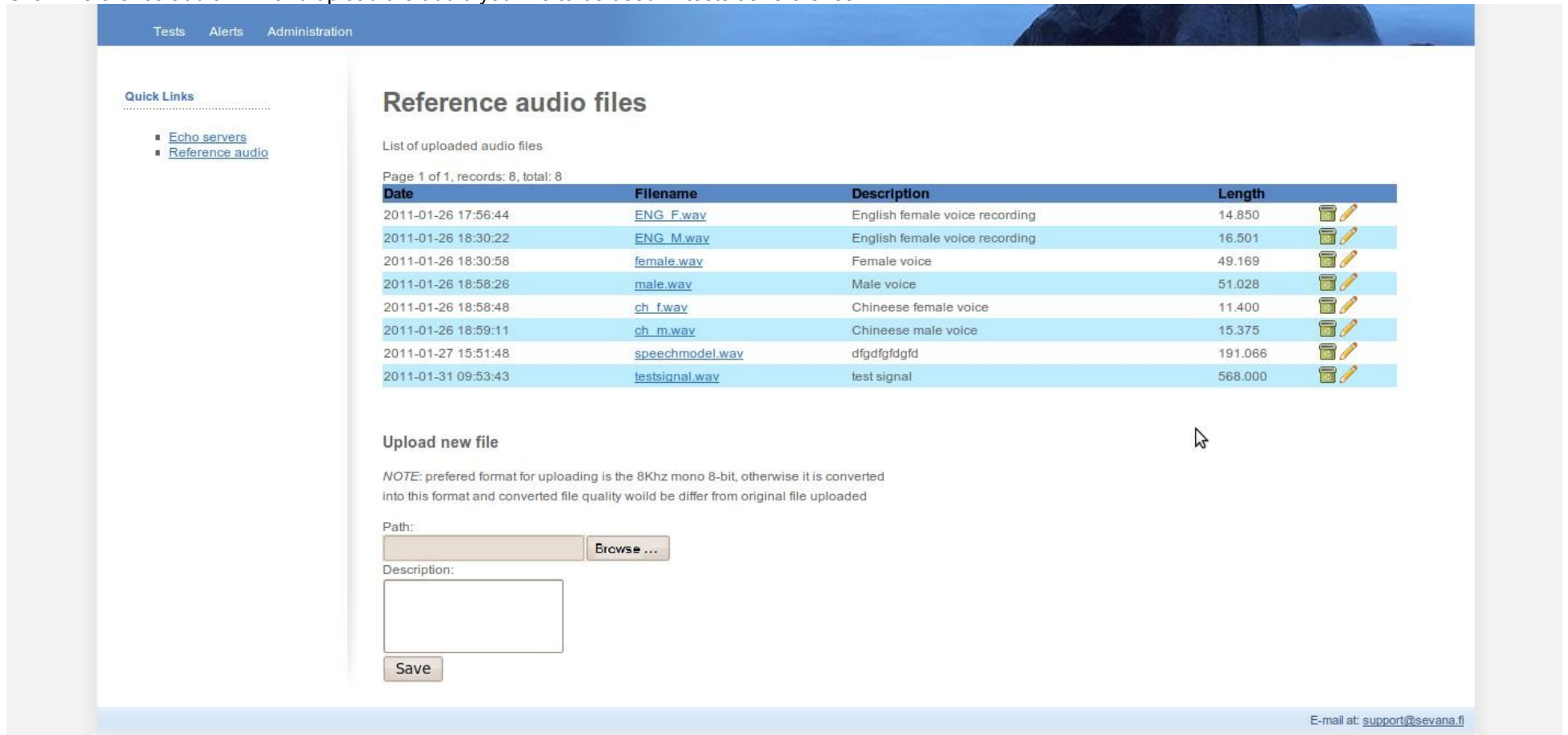
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If your Asterisk server is configured correctly and has appropriate hardware you can use a PSTN number to dial into an echo server as well.

Selecting reference audio

Click "Reference audio" link and upload the audio you like to be used in tests as reference:



Tests Alerts Administration

















Quick Links

- Echo servers
- Reference audio

Reference audio files

List of uploaded audio files

Page 1 of 1, records: 8, total: 8

Date	Filename	Description	Length	
2011-01-26 17:56:44	ENG_F.wav	English female voice recording	14.850	 
2011-01-26 18:30:22	ENG_M.wav	English female voice recording	16.501	 
2011-01-26 18:30:58	female.wav	Female voice	49.169	 
2011-01-26 18:58:26	male.wav	Male voice	51.028	 
2011-01-26 18:58:48	ch_f.wav	Chinese female voice	11.400	 
2011-01-26 18:59:11	ch_m.wav	Chinese male voice	15.375	 
2011-01-27 15:51:48	speechmodel.wav	dfgdfgfdgfd	191.066	 
2011-01-31 09:53:43	testsignal.wav	test signal	568.000	 

Upload new file

NOTE: preferred format for uploading is the 8Khz mono 8-bit, otherwise it is converted into this format and converted file quality would be differ from original file uploaded

Path:

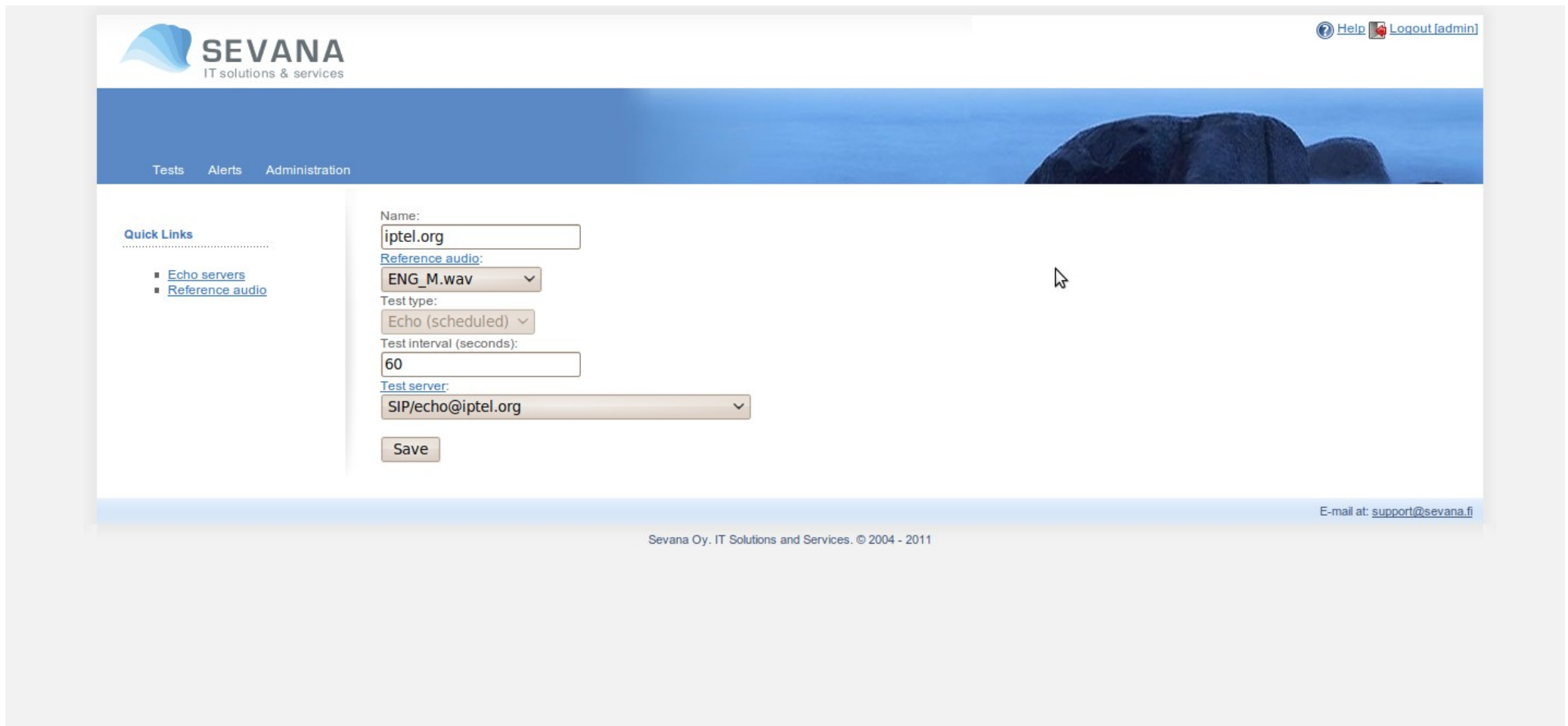
Description:

E-mail at: support@sevana.fi

Click Save button.

Echo server test setup

To setup an echo server test click "Add new" button on the main screen:



The screenshot displays the SEVANA web interface for setting up an echo server test. The page features a blue header with the SEVANA logo and navigation links for 'Tests', 'Alerts', and 'Administration'. A 'Quick Links' sidebar on the left contains links for 'Echo servers' and 'Reference audio'. The main content area contains a form with the following fields:

- Name:** iptel.org
- Reference audio:** ENG_M.wav
- Test type:** Echo (scheduled)
- Test interval (seconds):** 60
- Test server:** SIP/echo@iptel.org

A 'Save' button is located below the form. The footer includes the text 'Sevana Oy. IT Solutions and Services. © 2004 - 2011' and an email address 'support@sevana.fi'.

Then enter correspondent parameters, for example:

Name:

[Reference audio:](#)

Test type:

Test interval (seconds):

[Test server:](#)

and click Save button.

Conference bridge test setup

To setup a conference bridge test click "Add new" button on the main screen:



The screenshot displays the SEVANA web application interface. At the top left is the SEVANA logo with the tagline "IT solutions & services". At the top right are links for "Help" and "Logout [admin]". Below the logo is a navigation bar with "Tests", "Alerts", and "Administration". On the left side, there is a "Quick Links" section with a list containing "Echo servers" and "Reference audio". The main content area is a form for adding a new test. The form fields are as follows:

- Name:
- Reference audio:
- Test type:
- Test interval (seconds):
- Test server:
- Test server (slave):
- Conference pin (master):
- Conference pin (slave):

At the bottom of the form is a "Save" button. The footer of the page contains the text "Sevana Oy. IT Solutions and Services. © 2004 - 2011" and "E-mail at: support@sevana.fi".

Then enter correspondent parameters, for example:

Name:

[Reference audio:](#)

Test type:

Test interval (seconds):

[Test server:](#)

[Test server \(slave\):](#)

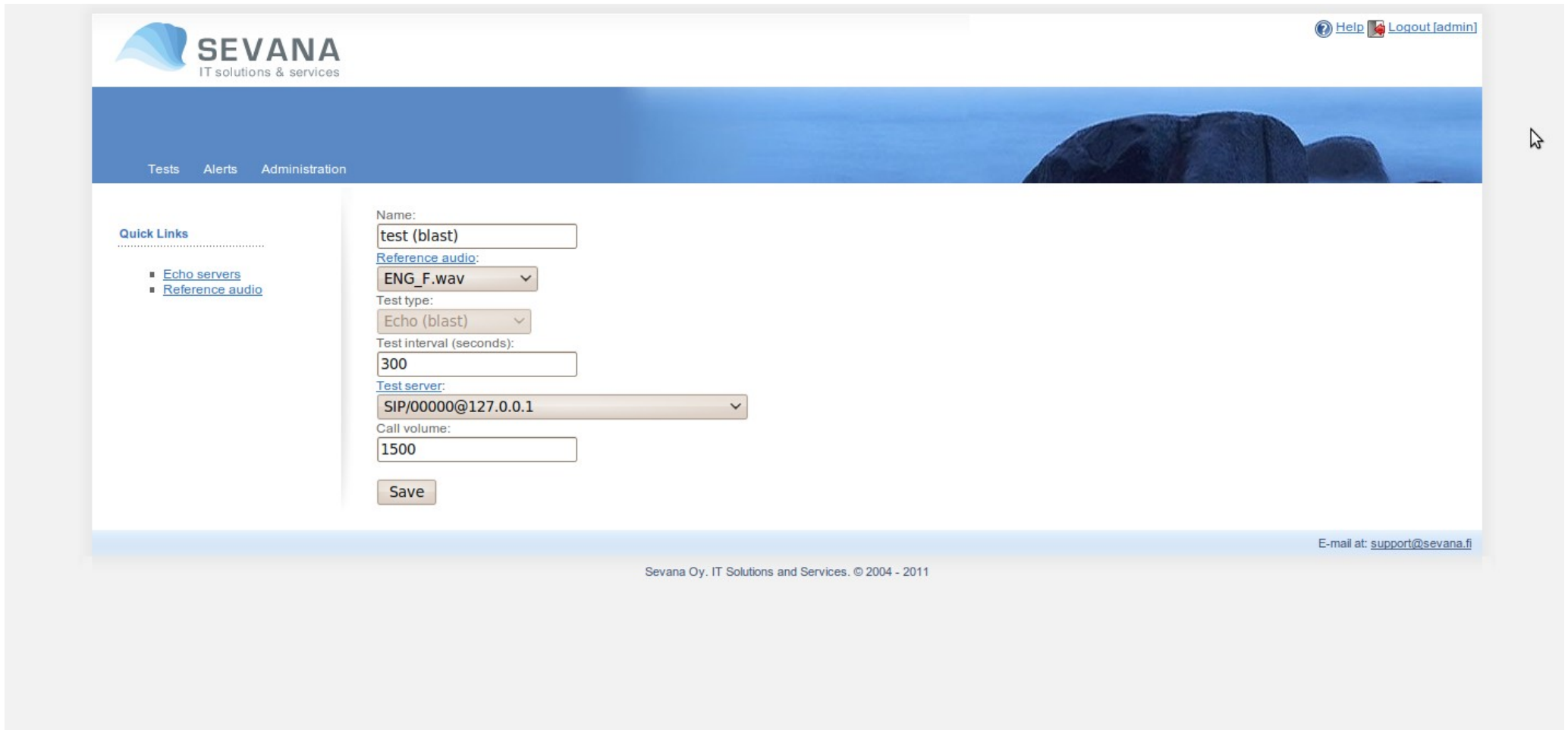
Conference pin (master):

Conference pin (slave):

And click Save.

Load test setup

To setup a load test click “Add new” button on the main screen:



The screenshot displays the SEVANA web application interface. At the top left is the SEVANA logo with the tagline "IT solutions & services". At the top right are links for "Help" and "Logout [admin]". Below the logo is a navigation bar with "Tests", "Alerts", and "Administration" options. On the left side, there is a "Quick Links" section with a list containing "Echo servers" and "Reference audio". The main content area is a form for adding a new load test. The form fields are: "Name:" with the value "test (blast)"; "Reference audio:" with a dropdown menu showing "ENG_F.wav"; "Test type:" with a dropdown menu showing "Echo (blast)"; "Test interval (seconds):" with the value "300"; "Test server:" with a dropdown menu showing "SIP/00000@127.0.0.1"; and "Call volume:" with the value "1500". A "Save" button is located at the bottom of the form. At the bottom right of the page, there is a footer with the text "E-mail at: support@sevana.fi". At the bottom center, there is a copyright notice: "Sevana Oy. IT Solutions and Services. © 2004 - 2011".

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- Echo servers
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Name:
test (blast)

Reference audio:
ENG_F.wav

Test type:
Echo (blast)

Test interval (seconds):
300

Test server:
SIP/00000@127.0.0.1

Call volume:
1500

Save

E-mail at: support@sevana.fi

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Then enter correspondent parameters, for example:

Name:

[Reference audio:](#)

Test type:

Test interval (seconds):

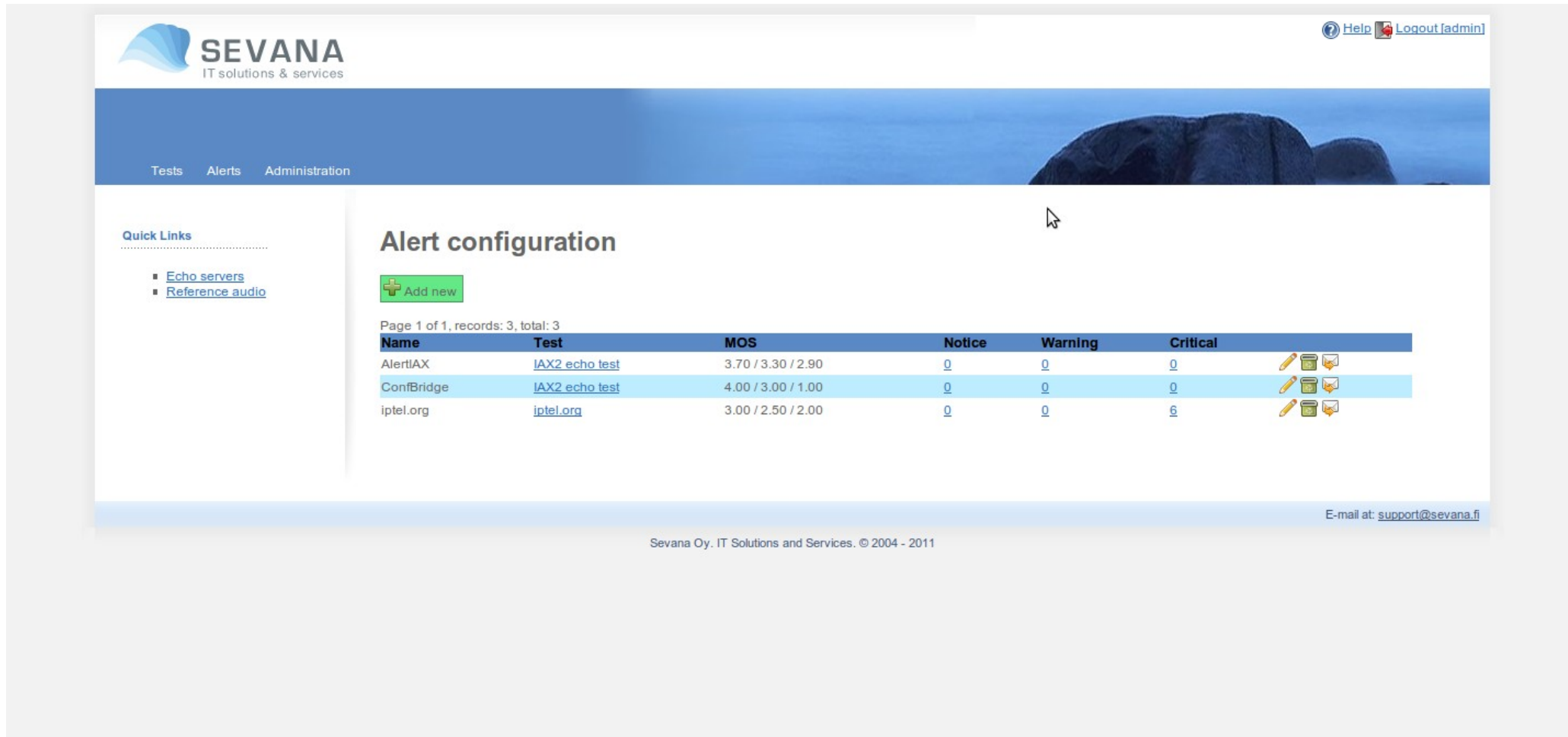
[Test server:](#)

Call volume:

And click Save

Alerts

Asterisk VQM has built-in alerting system that records all call failures and notifies network administrator by email when call quality decreases:



The screenshot displays the SEVANA web interface for alert configuration. The header includes the SEVANA logo and navigation links for Tests, Alerts, and Administration. A sidebar on the left provides quick links to Echo servers and Reference audio. The main content area is titled 'Alert configuration' and features a table with three records. Each record includes a Name, Test, MOS score, and three alert levels: Notice, Warning, and Critical. The table also includes icons for editing, deleting, and adding new configurations.

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Help Logout [admin]

Tests Alerts Administration










Quick Links

- Echo servers
- Reference audio

Alert configuration

+ Add new

Page 1 of 1, records: 3, total: 3

Name	Test	MOS	Notice	Warning	Critical	
AlertIAX	IAX2 echo test	3.70 / 3.30 / 2.90	0	0	0	  
ConfBridge	IAX2 echo test	4.00 / 3.00 / 1.00	0	0	0	  
iptel.org	iptel.org	3.00 / 2.50 / 2.00	0	0	6	  

E-mail at: support@sevana.fi










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To expand alerts and see what tests and calls had problems click the number indicating amount of problematic (Notice, Warning, Critical) tests:








The screenshot shows the SEVANA web application interface. At the top left is the SEVANA logo with the tagline "IT solutions & services". At the top right are links for "Help" and "Logout [admin]". Below the logo is a navigation bar with "Tests", "Alerts", and "Administration" tabs. On the left side, there is a "Quick Links" section with "Echo servers" and "Reference audio" links. The main content area is titled "Alert configuration" and includes an "Add new" button. Below this is a table showing alert configurations for "AlertiAX", "ConfBridge", and "iptel.org". Each row shows MOS values and counts for Notice, Warning, and Critical tests. The "iptel.org" row has a "6" in the Critical column, which is highlighted by a mouse cursor. Below the alert configuration table is a section for "Alerted tests:" with a table listing individual test events with columns for Time, Duration (PDD), Q.931, %, MOS, and PESQ. At the bottom right, there is an "E-mail at: support@sevana.fi" link. At the bottom center, the copyright notice reads "Sevana Oy. IT Solutions and Services. © 2004 - 2011".

Alert configuration

Page 1 of 1, records: 3, total: 3

Name	Test	MOS	Notice	Warning	Critical	
AlertiAX	IAX2 echo test	3.70 / 3.30 / 2.90	0	0	0	  
ConfBridge	IAX2 echo test	4.00 / 3.00 / 1.00	0	0	0	  
iptel.org	iptel.org	3.00 / 2.50 / 2.00	0	0	6	  

Alerted tests:

Time	Duration (PDD)	Q.931	%	MOS	PESQ	
2011-02-11 16:24:02	27 (0)	16	0.00	0.00	0.00	
2011-02-11 16:19:02	26 (0)	16	0.00	0.00	0.00	
2011-02-11 16:08:02	27 (0)	16	0.00	0.00	0.00	
2011-02-11 16:07:01	42 (0)	16	0.00	0.00	0.00	
2011-02-11 15:54:02	26 (0)	16	0.00	0.00	0.00	
2011-02-11 15:47:02	27 (0)	16	0.00	0.00	0.00	
2011-02-11 02:25:03	27 (0)	16	0.00	0.00	0.00	

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To setup your own alert click "Add new" button on the Alerts screen and fill in alert parameters, for example:

Name:

[Select test:](#)

MOS threshold (0-5):
Notice: Warn: Crit:

Count:

Email:

In the above example system will send alert email to admin@sevana.fi when either of IAX2 echo test calls (count=1) will reach MOS score lower than 3 (Notice), or 2.50 (Warning), or 2 (Critical). Alert will also be registered in the system, so one can review test call results and analyze the reasons for voice quality degradation.

Test Results

Click on any test presented on the main screen and the system will display you a list of test calls associated with the test, their parameters and graph of quality scores within the entire test:

Tests Alerts Administration

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- [Echo servers](#)
- [Reference audio](#)

Original audio - ENG_M.wav Size: 257.87 Kb [download](#)

0:16

Tests / failed: 26 / 29
Average MOS: 3.22
Average %: 60.37
Average PESQ: 2.87
Best result: 3.81
Worst result:
Last test:

Results received done:
 Page 1 of 2, records: 30, total: 55

Time	Duration (PDD)	Q.931	%	MOS	PESQ	
2011-02-11 16:28:01	27 (0)	16	60.35	3.22	2.87	■
2011-02-11 16:26:02	26 (0)	16	58.38	3.12	2.87	■
2011-02-11 16:24:02	27 (0)	16	0.00	0.00	0.00	■
2011-02-11 16:23:01	27 (0)	16	59.99	3.20	2.87	■
2011-02-11 16:21:01	26 (1)	16	59.40	3.17	2.87	■
2011-02-11 16:19:02	26 (0)	16	0.00	0.00	0.00	■
2011-02-11 16:17:01	27 (0)	16	57.89	3.10	2.87	■
2011-02-11 16:15:02	27 (0)	16	59.16	3.16	2.87	■
2011-02-11 16:13:02	27 (0)	16	58.42	3.12	2.87	■
2011-02-11 16:11:02	27 (0)	16	59.10	3.16	2.87	■
2011-02-11 16:10:01	27 (0)	16	58.54	3.13	2.87	■
2011-02-11 16:08:02	27 (0)	16	0.00	0.00	0.00	■
2011-02-11 16:07:01	42 (0)	16	0.00	0.00	0.00	■
2011-02-11 16:05:01	26 (1)	16	60.77	3.24	2.88	■
2011-02-11 16:03:02	26 (0)	16	71.68	3.81	2.92	■
2011-02-11 16:02:01	27 (0)	16	59.51	3.18	2.87	■

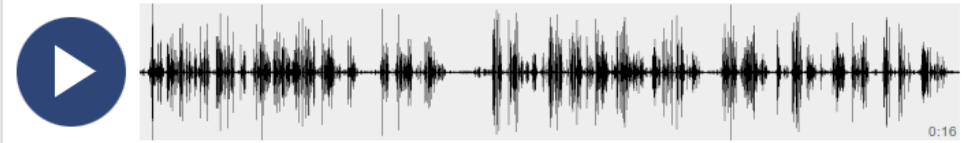
The system also displays wave form of the reference audio that was used within the chosen test. One can play the audio to listen to it and see average values for the

whole test. Click on the test time stamp and the system will show you information about the test call:

Quick Links

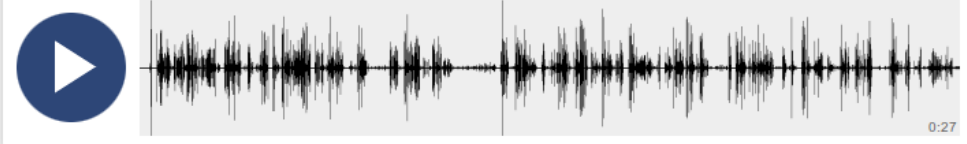
- [Echo servers](#)
- [Reference audio](#)

Original audio - ENG_M.wav Size: 257.87 Kb [download](#)



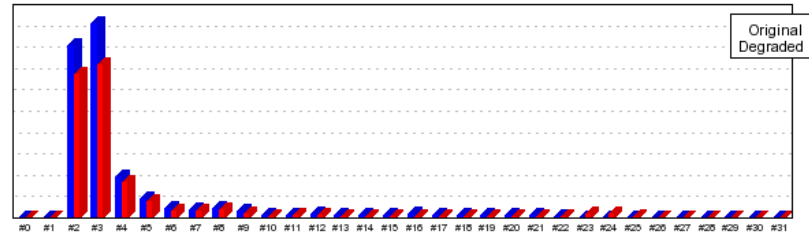
0:16

Degraded audio - 1297697822-31-in.wav Size: 261.29 Kb [download](#)



0:27

Signal spectrums comparison



Original
Degraded

MOS: 2.99;
PESQ: 2.85;
Percent: 55.65;

Source SNR : 40.534868.
Degradated SNR : 75.072668.
Delay of audio signal activity.
Signal delayed by 130.000000 ms.

Audio signal activity mistiming (unsynchronization) is 4.81 percent.

You can listen to the audio that was used as reference for this test and compare to what was recorded from the system under test by listening to both file, analyzing differences in signal spectrum represented on the diagram, check MOS score, SNR (signal/noise ratio) and check additional information about reasons for voice quality change in the test. Detailed description of reasons for voice quality degradation is given in AQuA Manual. Please contact us for further information: <http://www.sevana.fi>