



TRACE — Why Opensource Lets A Broadcaster Sleep At Night —
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What is TRACE

4 Pay TV linear Music channels



18 feeds
160 countries
38 satellites

1 sports entertainment channel



1 FM radio station



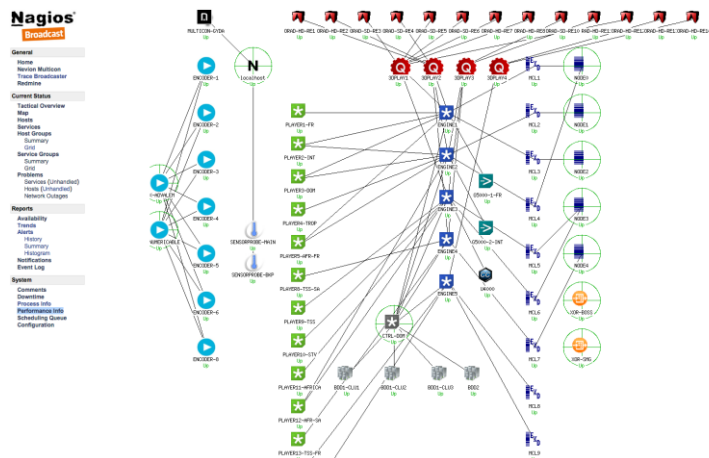
Why sleeping at night is difficult :

- **Emmanuel ALDEGUER, Technical Broadcast Manager since 2009.**
- **5 people in the broadcast team.**
- **70 servers to monitor and maintain provided by +20 different constructors.**
- **Hundreds of clients over each time zone : Daytime doesn't mean anything to us.**
- **No one is working on site at night, during the weekends and holidays.**

HOW TO PROCEED ?

Nagios applied to Broadcast Environment

- First server, Nagios V3.3.1. implemented in 2011 by Emmanuel ALDEGUER.
 - NSClient++ Agents tracking only.
 - First graphic overview of Trace's broadcasting system.
 - Basic email warnings configured
 - Perl scripts to monitor Ninsight and Seachange's applications
- Equipment update, Tactical view optimization, pre-diagnosis
- Current project manager : Jérémy DUPEU jdupeu@trace.tv



Nagios® Broadcast

- General
 - Home
 - Newton Multicon
 - Trace Broadcaster
 - Redmine
- Current Status
 - Tactical Overview
 - Map
 - Hosts
 - Services
 - Host Groups
 - Summary
 - Grid
 - Service Groups
 - Summary
 - Grid
 - Problems
 - Services (Unhandled)
 - Hosts (Unhandled)
 - Network Outages
- Reports
 - Availability
 - Trends
 - Alerts
 - History
 - Summary
 - Histogram
 - Notifications
 - Event Log
- System
 - Comments
 - Downtime
 - Process Info
 - Performance Info
 - Scheduling Queue
 - Configuration

Tactical Monitoring Overview
Last Updated: Thu Sep 4 18:27:25 CEST 2014
Updated every 10 seconds
Nagios® Core™ 4.0.7 - www.nagios.org
Logged in as jdupeu

Network Outages

0 Outages

Hosts

0 Down 0 Unreachable 73 Up 0 Pending

Services

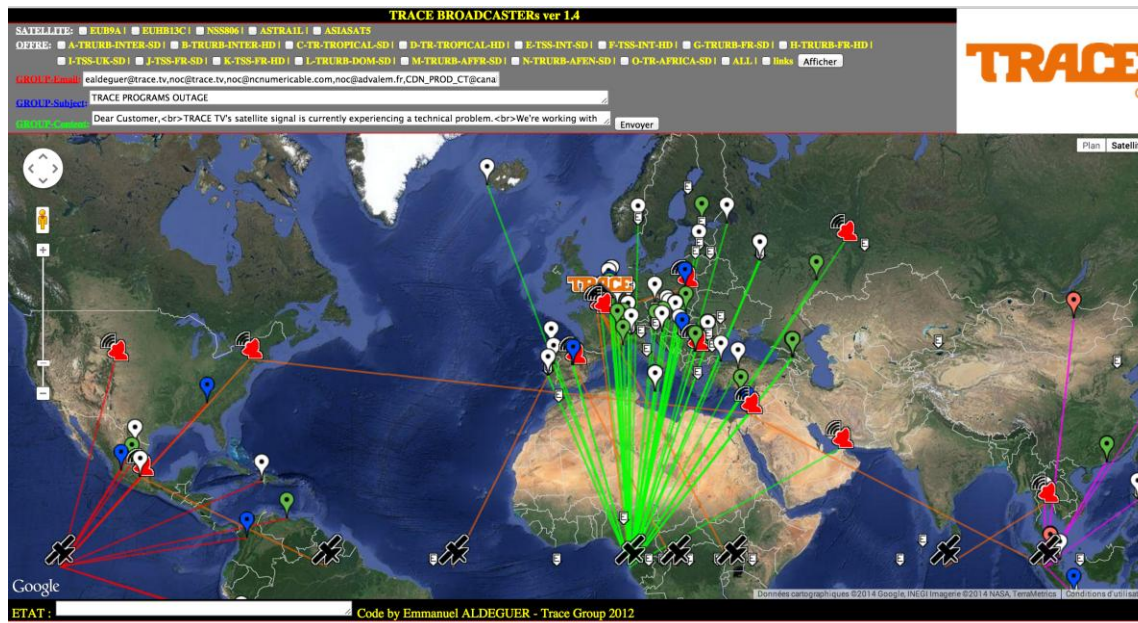
0 Critical 0 Warning 0 Unknown 206 Ok 0 Pending

Monitoring Features

Flap Detection	Notifications	Event Handlers	Active Checks	Passive Checks
✓ 1 Service Disabled	✓ All Services Enabled	✓ All Services Enabled	✓ 1 Service Disabled	✓ All Services Enabled
No Services Flapping	All Hosts Enabled	All Hosts Enabled	All Hosts Enabled	All Hosts Enabled
No Hosts Flapping				

Google Maps API

- Usage of Maps API to locate our clients and access to the turnarounds
- Pop-ups with contact informations of the client
- Group-mail fonction via sendmail to warn the clients
- Current Project Manager : Emmanuel ALDEGUER (éaldeguer@trace.tv)



Redmine and its benefits

- Technical issues management via ticketing
- Availability rate of each channel computed from data extracted from the MySQL core
- On-call Management
- Technical Documentation and Process PDF storage
- Current Project Manager : Emmanuel ALDEGUER (éaldeguer@trace.tv)

The screenshot displays the Redmine Gantt chart interface for a project titled "02-Projets en cours » Cleaning du Nodal (Câblage)". The main view is a Gantt chart showing task progress over time, with a calendar view for the month of May 2012. The left sidebar lists tasks under "002-Projets en cours", including "Cleaning du Nodal (Câblage lourd)" and its sub-tasks: "2-Carnet de câbles", "3-Opération de câblage", and "4-Finalisation". The right sidebar shows navigation options for "Demandes" and "ICalendar".

Trace Central – Example of Briefmaker

- Production interface
- Graphic visualisation of the processes
- Coded with Python, JQuery, Bootstrap, MongoDB
- Soon in production
- Current Project Managers : Emmanuel ALDEGUER (éaldeguer@trace.tv) and Rodolphe HURET (rhuret@trace.tv)

The screenshot shows the TRACE CENTRAL web interface. At the top, there is a navigation bar with links for 'CENTRAL', 'Trace Website', 'Portal', 'Tasks History', and 'You're logged in'. Below the navigation bar, there are two notification boxes: a green 'Success' box stating 'You have one Task approved' and a red 'Error' box stating 'You're not connected to the database'. The main heading is 'BRIEF MAKER v0.1' with the subtitle 'A web-based interface to create your briefs.' Below the heading is a horizontal menu with tabs: 'First Steps', 'General', 'Pictures and Graphics', 'Videos', 'Audios', 'Event Date', 'City/Venue', and 'Submit Task'. The 'First Steps' tab is selected, and the content area shows a form titled 'First Steps' with the subtitle 'First Steps in creating your Brief'. The form includes a 'Brief Name' field with the value 'TEST', a 'save' button, and a 'Program Type' dropdown menu with 'Agenda' selected. There are also three green circular indicators to the right of the form fields.

FFMPEG and JQuery

- Usage of ffmpeg bash scripts within a JQuery/PHP interface to convert video files to TRACE' s Ready to Broadcast standards : MXF XDCAM 1080i50
- User friendly
- To be combined to Central' s MongoDB
- Current Project Manager : Emmanuel ALDEGUER (éaldegue@trace.tv) and Jérémy DUPEU (jdupeu@trace.tv)

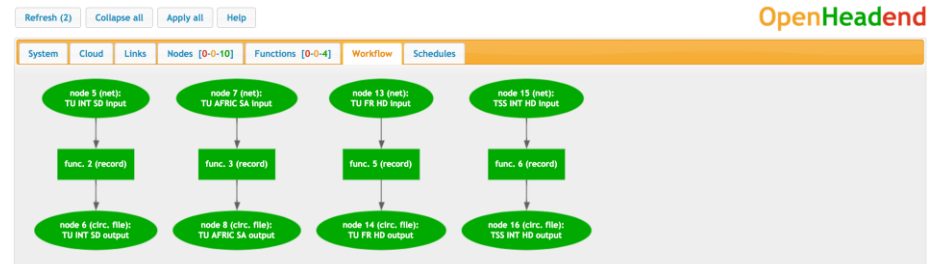
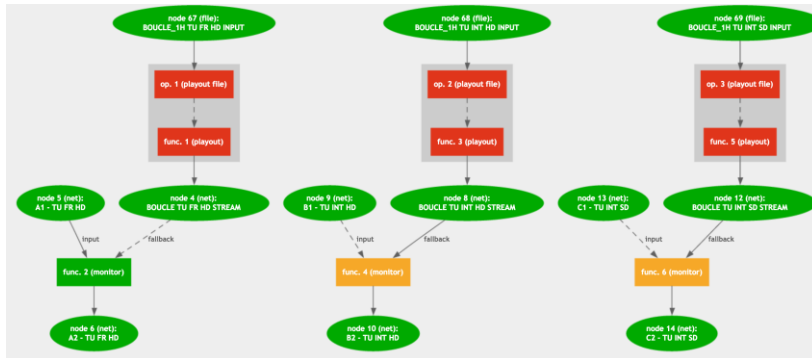
The screenshot shows the TRACE website interface. At the top, there is a navigation bar with 'CENTRAL', 'Trace Website', 'Portal', 'Tasks History', and 'You're logged in'. Below the navigation bar, there are tabs for 'URL Field', 'Name Field', 'Format Field', 'Submit Task', and 'Details'. The 'Format Field' tab is active. The main content area contains a form with the following elements:

- A text input field labeled 'Please enter here the videoup name' with the value 'TEST'.
- A 'File name:' label and a text input field containing 'TEST'.
- A 'Format Field' section with the heading 'Please select the format for your video'.
- Three rows of options for video format, audio bitrate, and censored version, each with a radio button and an error message:

Option	Radio Button	Error Message
The best resolution available for video is: 720p	Not selected	Error : No HD Version available.
The audio bitrate available is: 128k	Not selected	Error : No Audio available.
Censored version ? Yes	Not selected	Error : You must specify if the video needs to be censored.

Open Head End

- Usage of OHE products in Trace's broadcast environment
- Feeds 24h/24 7d/7 recording and sample extraction
- IP Change-Over System to be implemented very soon
- Internal IPTV Network
- Current Project Manager : Romain LAISNE (rlaisne@trace.tv)



Let's summarize

- Nagios : <http://www.nagios.org>
- Redmine : <http://www.redmine.org>
- FFMPEG : <http://www.ffmpeg.org>
- Google Maps API : <http://developers.google.com/maps/>
- Trace Central : <http://www.jquery.com> and <http://www.bootswatch.com/united> and <http://www.mongodb.org>
- OpenHeadEnd : <http://www.openheadend.tv>