

*A Scientific Network for Earthquake, Landslide and
Flood Hazard Prevention - SciNetNatHazPrev*

Online monitoring of accelerometer stations



*Kiriaki Konstantinidou
IT Operations
Institute of Engineering Seismology
and Earthquake Engineering*

In a nutshell

- ❖ A web tool for monitoring the status of online accelerometer stations (network health)
- ❖ A database backend with information about online accelerometer stations, current network health and health history
- ❖ A set of utilities for applying maintenance operations

Network Health

- ❖ Station status is updated in the database daily by using an automated script (can run as often as we wish)
- ❖ A web interface gives us insight into this information

Status		Static info		Log								
Station	Status	Latest Pole	Last Status Changed	Sensor	Scream Blocks	Gcf Blocks	GPS	Storage	Data Free Space	System Free Space	Load	Uptime
AGN1	OK	2015-05-08 10:53:34	None	2015-05-08T10:47:56.000Z	129	130	OK!	OK!	12.2%	27.3%	0.58	213.99
AGR2	OK	2015-05-08 10:53:38	None	2015-05-08T10:47:55.000Z	95	94	OK!	OK!	12.1%	27.0%	0.8	21.04
AIG2	GPS error	2015-05-08 10:53:39	None	2015-05-08T10:48:04.000Z	163	169	Error!	OK!	12.2%	23.7%	0.56	216.85
AKR1	GPS error	2015-05-08 10:53:41	None	2015-05-08T10:47:59.000Z	133	136	Error!	OK!	12.0%	27.4%	0.48	213.95
ALX1	Storage error	2015-05-08 10:53:42	None	2015-05-08T10:48:03.000Z	147	149	OK!	Error accessing storage	Unknown	22.5%	0.65	108.48
AOL1	No communication	2015-05-07 05:00:12	None	2015-05-07T04:54:27.000Z	90	93	OK!	OK!	5.0%	27.4%	0.47	85.64

Detailed View

- ❖ A detailed view gives details on station status and other useful administrative information

Detailed View

Station Code	IP	last update	last status changed	Eam serial	Digitizer serial	Trigger setting
AGR2	84.205.208.154	2015-05-08 10:53:38	None	3137	5U50	0.05g 60 sec 90 sec

Edit station

Network Information

Network Provider	External IP	SYZEFXIS IP	Internal IP	Subnet Mask
ΣΥΖΕΥΞΙΣ	84.205.208.154	10.168.144.240	10.168.144.240	255.255.255.0 /24

Installation Information

Installation Order	Location	Region	Building	Coordinates	Installat date
94	Αγρίνιο	Δυτική Ελλάδα	Παλιό Νοσοκομείο	[38.631867N, 21.413717E]	ΑΥΓΟΥΣ 2012

Scream

Clients connected Blocks sent in last 5 minutes

3

GPS

Status Estimated error

true 5.2e-05

Storage

State Size Last accessed Free space

Inactive Unknown Never Unknown

System

Uptime Load Root free space Repo label Build machine EAM Firmware Digitizer Firmware

2.89 0.61 15.7% platinum-stable CMG-DCM-mk4-eabi 14645 v.106 build 57s

History Log

- ❖ Changes in the status of a station are kept in a history log for future reference

History SFIR

Date	Status	Blocks out	Blocks received	Clients	Scream Blocks	GCF last blocks	GCF last samples	Ntp status	EAM Firmware	Storage	Free Space
2015-05-07 05:04:32	OK	None	127	2	117	118	92228	true	14645	Inactive	Unknown
2015-05-06 05:03:54	GPS error	None	119	2	109	108	89800	false	14645	Inactive	Unknown
2015-05-05 13:05:58	OK	None	152	2	132	133	90500	true	14645	Inactive	100.0%
2015-03-30 05:03:19	No communication	None	None	None	None	None	None	false	13722	None	None
2015-03-27 06:02:33	Storage error	120	120	2	110	110	90700	false	13722	Powering on storage	Unknown
2015-03-26 12:19:17	Storage error	136	136	2	122	124	91028	true	13722	Error accessing storage	Unknown
2015-03-21 06:01:27	Storage error	106	106	2	100	101	88800	false	13722	Error accessing storage	Unknown

Network Health Log

- ❖ ... and also the general network health is recorded daily in a log

Status	Static info	Log
Ημερομηνία	Failed	Μόνιμη Βλάβη
2015-05-08 10:53:33	None,AOL1,ARK1,FRS1,KOZ2,NMA1	None,AIA1,CH03,HER4,IGM2,KIS1,KNO1,KRI1,LAR5,PLA1,PLC1,PYR3,SFK1,VRO1
2015-05-07 05:00:03	None,ARK1,FRS1,KOZ2,NMA1	None,AIA1,CH03,HER4,IGM2,KIS1,KNO1,KRI1,LAR5,PLA1,PLC1,PYR3,SFK1,VRO1
2015-05-06 05:00:02	None,ARK1,FRS1,NMA1	None,AIA1,CH03,HER4,IGM2,KIS1,KNO1,KRI1,LAR5,PLA1,PLC1,PYR3,SFK1,VRO1
2015-05-05 05:00:02	None,ARK1,FRS1,KNS1,SFIR	None,AIA1,CH03,HER4,IGM2,KIS1,KNO1,KRI1,LAR5,PLA1,PLC1,PYR3,SFK1,VRO1
2015-05-03 05:00:02	None,ARK1,FRS1,SFIR	None,AIA1,CH03,HER4,IGM2,KIS1,KNO1,KRI1,LAR5,PLA1,PLC1,PYR3,SFK1,VRO1
2015-05-02 05:00:04	None,ARK1,FRS1,SFIR	None,AIA1,CH03,HER4,IGM2,KIS1,KNO1,KRI1,LAR5,PLA1,PLC1,PYR3,SFK1,VRO1
2015-05-01 05:00:04	None,ARK1,FRS1,SFIR	None,AIA1,CH03,HER4,IGM2,KIS1,KNO1,KRI1,LAR5,PLA1,PLC1,PYR3,SFK1,VRO1
2015-04-30 05:00:02	None,ARK1,FRS1,HER3,SFIR	None,AIA1,CH03,HER4,IGM2,KIS1,KNO1,KRI1,LAR5,PLA1,PLC1,PYR3,SFK1,VRO1
2015-04-29 05:00:02	None,ARK1,FRS1,SFIR	None,AIA1,CH03,HER4,IGM2,KIS1,KNO1,KRI1,LAR5,PLA1,PLC1,PYR3,SFK1,VRO1

Network Maintenance

- ❖ A set of command line utilities has been developed for network maintenance
 - ◆ Backup of system files and customisation settings
 - ◆ Remote reboot
 - ◆ Firmware upgrade
 - ◆ Poll station status

Status Polling

- ❖ A command line script is used for polling stations daily either automatically or on demand

```
kiriaki — ssh — 100x36
Getting XML...
Reading XML...
parsing sensor
parsing GPS
parsing scream
parsing storage
parsing system
parsing gcf
- parsing saved for: ARE2
history latest entry for ARE2 last timestamp 2015-05-08 05:00:02
history latest entry status No communication current status OK
Found changes. Saved new history entry
=====
Fetching latest entry for ARG2 with date 2015-05-07 05:00:14
Beginning Parsing of:ARG2 84.205.208.142 http://84.205.208.142
=====
Forming URL...
Getting XML...
Reading XML...
parsing sensor
parsing GPS
parsing scream
parsing storage
parsing system
parsing gcf
- parsing saved for: ARG2
history latest entry for ARG2 last timestamp 2015-05-08 05:00:03
history latest entry status No communication current status OK
Found changes. Saved new history entry
=====
Fetching latest entry for ARK1 with date 2015-03-12 06:00:31
Beginning Parsing of:ARK1 77.69.13.244 https://77.69.13.244
=====
Forming URL...
Getting XML...
```

Thank you

Thank you for your attention!

Kiriaki Konstantinidou

IT Operations - ITSAK

kiriaki@itsak.gr