AIL - Framework for Analysis of information Leaks

An update

CIRCL
Computer Incident
Response Center
Luxembourg

Michael Hamm - *TLP:AMBER*

info@circl.lu

TF-CSIRT Meeting / FIRST Symposium; 23.-25. January 2017; Valencia

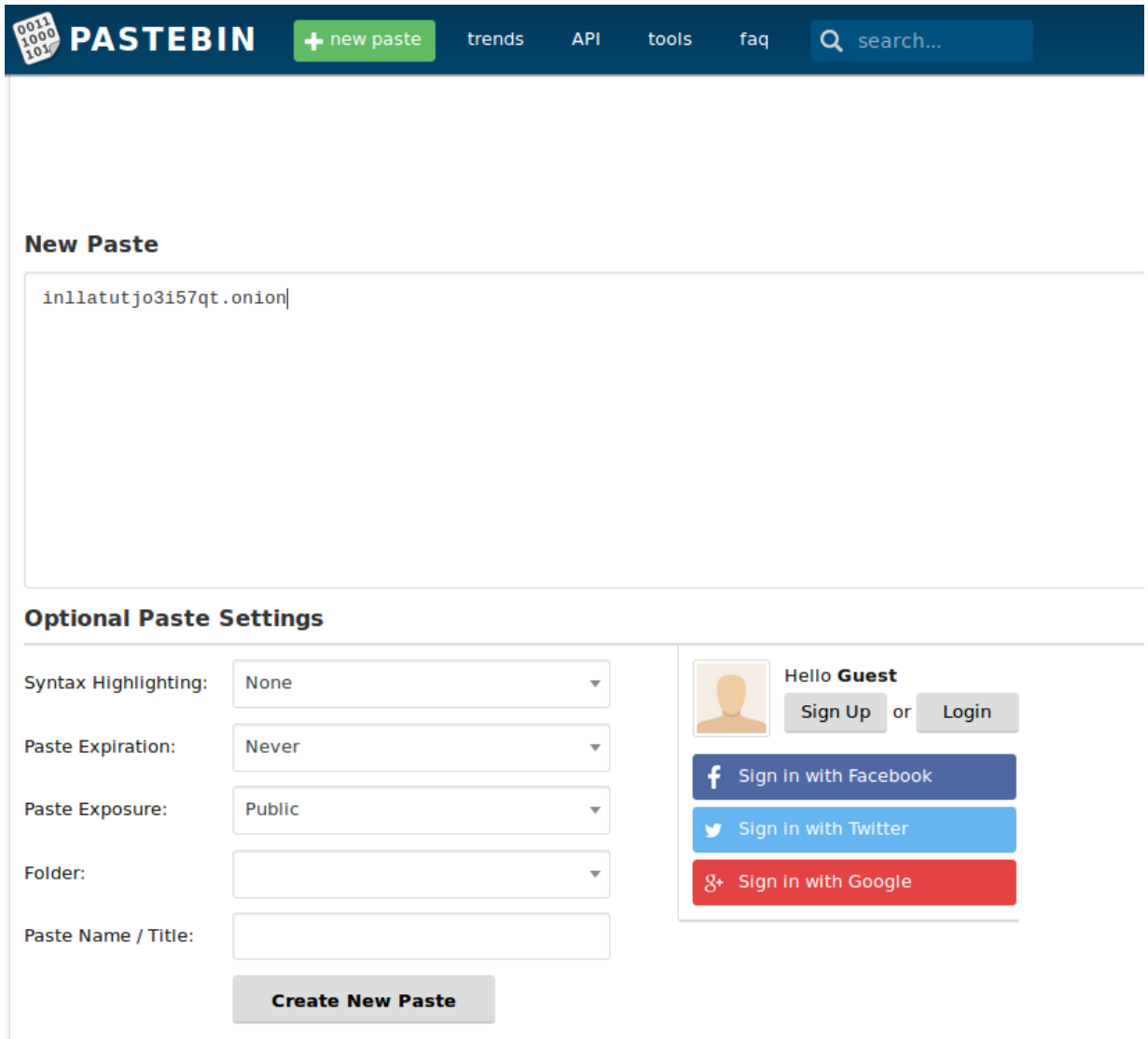
CIRCL
Computer Incident
Response Center
Luxembourg

- Paste monitoring

Paste monitoring

- Example: `http://pastebin.com/`
  - Easy storing and sharing text online
  - Used by programmers
    → Source code & configuration information
- Abused by attackers to store:
  - List of vulnerable sites
  - Exploit code
  - Database dumps
    → Users data
    → Credentials (3rd party)
    → Credit card details
  - ... more and more ...

Paste monitoring: Example creation



Paste monitoring: Key numbers

- Monitored paste sites: 27
- Keywords - Search terms: 420
- Keywords - Constituency related: 90
- Time for one ticket: 5 min - 1 hour

Table : Key numbers for 2016

Pastes 2016	Jan	Feb	Mar	Apr	Mai	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Fetched pastes	1 439 453	1 537 186	1 719 646	1 622 674	1 595 881	1 561 700	1 422 628	1 443 938	1 519 026	1 581 793	1 656 985	1 464 214
Keywords hits	5394	4407	4072	11 455	4722	4158	4083	3796	4235	3970	4155	4350
Constituency hits	1792	1402	741	1273	1146	795	598	644	717	953	736	643
Security related (TR-46)	30	22	28	19	15	13	16	8	13	22	38	28
Incidents & investigations	65	55	76	44	31	36	40	21	39	59	104	79

Paste monitoring: Statistics

Table : Statistics for 2016

Pastes 2016	Monthly averag	Total
Fetched pastes	1 547 094	18 565 124
Keywords hits	4900	58 797
Constituency hits	953	11 440
Security related (TR-46)	21	252
Incidents & investigations	54	649

Paste monitoring: TR-46 approach

`https://www.circl.lu/pub/tr-46`

circl.lu
Computer Incident Response Center LUXEMBOURG

About | Team | News | Services | Training | Publications | Projects | Contact

TR-46 - Information Leaks Affecting Luxembourg and Recommendations

Overview

Information leak: the publication (or trusted anouncement of possession) of stolen or otherwise aqcuired digital information like user profiles, credentials or other digital assets.

Information leaks have happened many times in the recent past. Sometimes, the number of affected people is quite small like in the leak of a customer database of a small web shop, where we probably would try to contact the few affected individuals or their employer's IT department. But most of the time we face leaks that contain several million people's private information.

From our experience as a CERT, it is difficult to inform individuals about the actual leak that happened. Too high is the suspicion the actual warning could be a phishing, and hence it is ignored. Testing services ("Is my email part of the leak") have legal implications and are also problematic from a security perspective.

This document is a new approach to deal with the mass of information leaks. It is our intention to demonstrate the associated risks and suggest appropriate reactions of users of the service that leaked the information by listing the service of an information leak and showing the number of affected users in Luxembourg - as far as we know them.

TR-46 is an always-updated document. All new information leaks are mentioned here, for the

TR-46 - Information Leaks Affecting Luxembourg and Recommendations

↑ Back to Publications and Presentations

Overview

How do I know if a service was affected?

Is CIRCL also informing me directly / my ISP / my company?

Vendor reactions

What are the risks of my information being stolen?

What should I do if the service I'm using

Paste monitoring: TR-46 approach

- Risks with stolen email addresses
- Risks with stolen (hashed) passwords
- How to mitigate the risks
- How to prevent collateral damage
- How do we find leaks
- Reference of leaks

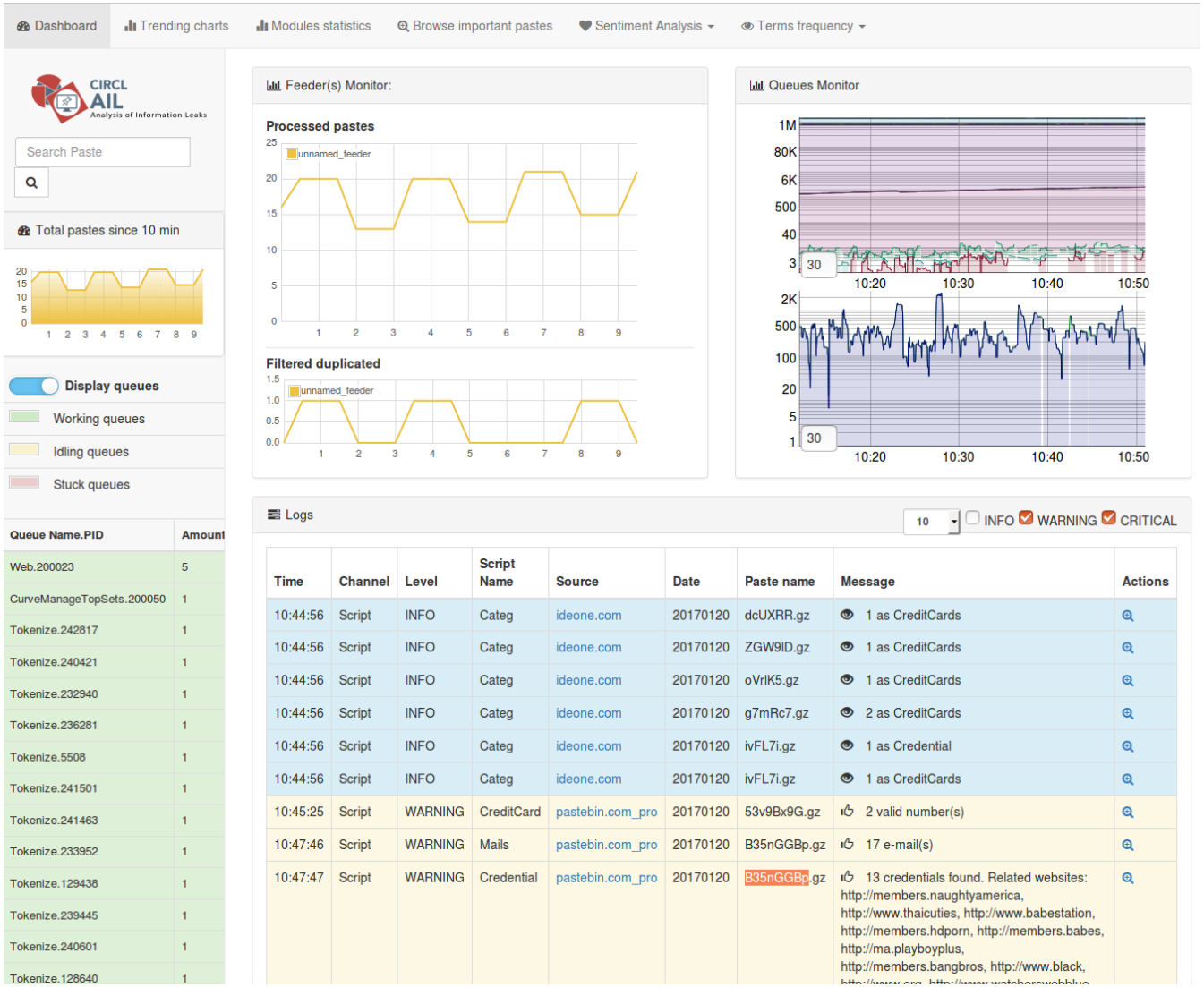
Paste monitoring: TR-46 approach

338904	2016-11-30	unknown	y	4	73	USER ID, PASSWORD, PHONE NUMBER, RECOVERY/ALTERNATIVE EMAIL, LOCATION
339220	2016-12-01	In relation with cardio & fitness	y	31	10952	email address, password clear
341894	2016-12-04	In relation with poster & posterfuchs	y	1	3211	email address, password clear
341994	2016-12-04	www.golfersfriend.co.za	y	6	9319	username, email, password hashed, salt
344326	2016-12-08	unknown	y	1	1258	email address, password clear
344816	2016-12-09	unknown	y	1	24	email address, password clear
346932	2016-12-13	unknown	y	1	87	email address, password clear
349931	2016-12-17	In relation with tunesoman.com	y	1	7374	email address, password clear
350106	2016-12-18	In relation with Motor, Car, Mini	y	2	5661	email address, password clear
350392	2016-12-19	www.1394store.com	y	21	1349	email address, password clear
352791	2016-12-23	unknown	y	2	1289	email address, password clear
352924	2016-12-24	unknown	y	6	3734	email address, password hashed, password clear
353000	2016-12-24	seaoflifeshop.com	y	13	2268	email address, password clear
353067	2016-12-25	In relation with gabon, adjaho	y	1	1543	email address, password clear
353961	2016-12-28	skillab.it	y	1	1410	user name, password hashed, email address
354507	2016-12-30	Mom-, Mommy- social community related	y	367	106187	email address, password clear
354802	2016-12-30	www.shoesontheweb.com	y	29	1863	email address, password clear
354821	2016-12-30	unknown	y	2	6910	email address, password clear
355785	2017-01-03	www.deezer.com	y	1	728	email address, password clear
355879	2017-01-03	Minecraft related	y	1	2812	email address, password clear
356313	2017-01-04	Netflix related	y	1	101	email address, password clear
357168	2017-01-07	unknown	y	1	1128	email address, password clear
357648	2017-01-09	bunkerindex.com	n	2	3985	email address
359040	2017-01-13	pile44.com, piles44.com	y	26	17472	email address, password clear
359306	2017-01-15	ludygames.com	y	3	2549	id, nom, pass, mail, passmd5, description

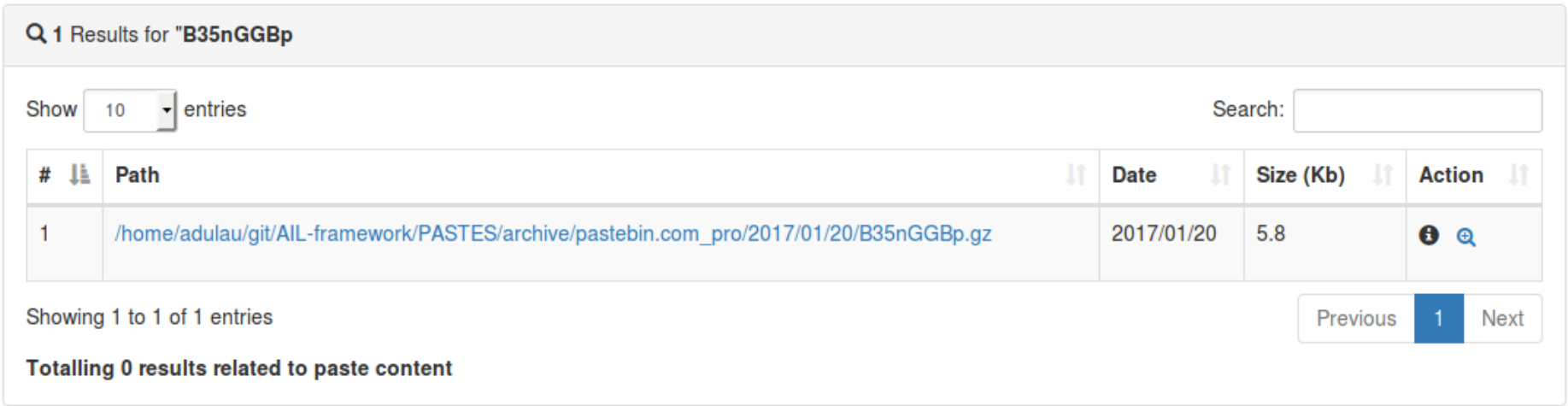
CIRCL
Computer Incident
Response Center
Luxembourg

- AIL

AIL


Dashboard
Trending charts
Modules statistics
Browse important pastes
Sentiment Analysis
Terms frequency
CIRCL AIL Analysis of Information Leaks
Search Paste
Total pastes since 10 min
Display queues
Working queues
Idling queues
Stuck queues
Queue Name.PID
Amount
Web.200023 5
CurveManageTopSets.200050 1
Tokenize.242817 1
Tokenize.240421 1
Tokenize.232940 1
Tokenize.236281 1
Tokenize.5508 1
Tokenize.241501 1
Tokenize.241463 1
Tokenize.233952 1
Tokenize.129438 1
Tokenize.239445 1
Tokenize.240601 1
Tokenize.128640 1
Feeder(s) Monitor:
Processed pastes
unnamed_feeder
Filtered duplicated
unnamed_feeder
Queues Monitor
Logs
INFO WARNING CRITICAL
Time Channel Level Script Name Source Date Paste name Message Actions
10:44:56 Script INFO Categ ideone.com 20170120 dcUXRR.gz 1 as CreditCards
10:44:56 Script INFO Categ ideone.com 20170120 ZGW9ID.gz 1 as CreditCards
10:44:56 Script INFO Categ ideone.com 20170120 oVrlK5.gz 1 as CreditCards
10:44:56 Script INFO Categ ideone.com 20170120 g7mRc7.gz 2 as CreditCards
10:44:56 Script INFO Categ ideone.com 20170120 ivFL7i.gz 1 as Credential
10:44:56 Script INFO Categ ideone.com 20170120 ivFL7i.gz 1 as CreditCards
10:45:25 Script WARNING CreditCard pastebin.com_pro 20170120 53v9Bx9G.gz 2 valid number(s)
10:47:46 Script WARNING Mails pastebin.com_pro 20170120 B35nGGBp.gz 17 e-mail(s)
10:47:47 Script WARNING Credential pastebin.com_pro 20170120 B35nGGBp.gz 13 credentials found. Related websites: http://members.naughtyamerica, http://www.thaicuties, http://www.babestation, http://members.hdporn, http://members.babes, http://ma.playboyplus, http://members.bangbros, http://www.black,

AIL



1 Results for "B35nGGBp

Show 10 entries

Search:

#	Path	Date	Size (Kb)	Action
1	/home/adulau/git/AIL-framework/PASTES/archive/pastebin.com_pro/2017/01/20/B35nGGBp.gz	2017/01/20	5.8	

Showing 1 to 1 of 1 entries

Previous 1 Next

Totalling 0 results related to paste content

AIL

Date	Source	Encoding	Language	Size (Kb)	Mime	Number of lines	Max line length
20/01/2017	pastebin.com_pro	text/plain	('en', 1.0)	5.8	text/plain	510	336

Duplicate list:

Show 10 entries Search:

Hash type	Paste info	Date	Path
tlsh	Similarity: 93%	2017-01-12	/home/adulau/git/AIL-framework/PASTES/archive/pastebin.com_pro/2017/01/12/WeizLQUx.gz
tlsh	Similarity: 93%	2017-01-17	/home/adulau/git/AIL-framework/PASTES/archive/pastebin.com_pro/2017/01/17/Xqbx62vU.gz
tlsh	Similarity: 93%	2017-01-10	/home/adulau/git/AIL-framework/PASTES/archive/pastebin.com_pro/2017/01/10/iyfet4UM.gz
tlsh	Similarity: 92%	2017-01-14	/home/adulau/git/AIL-framework/PASTES/archive/pastebin.com_pro/2017/01/14/G7AB7q1m.gz
tlsh	Similarity: 92%	No date available	/home/adulau/git/AIL-framework/PASTES/archive/pastebin.com_pro/2016/12/31/CpDdkKbU.gz

AIL

Content:

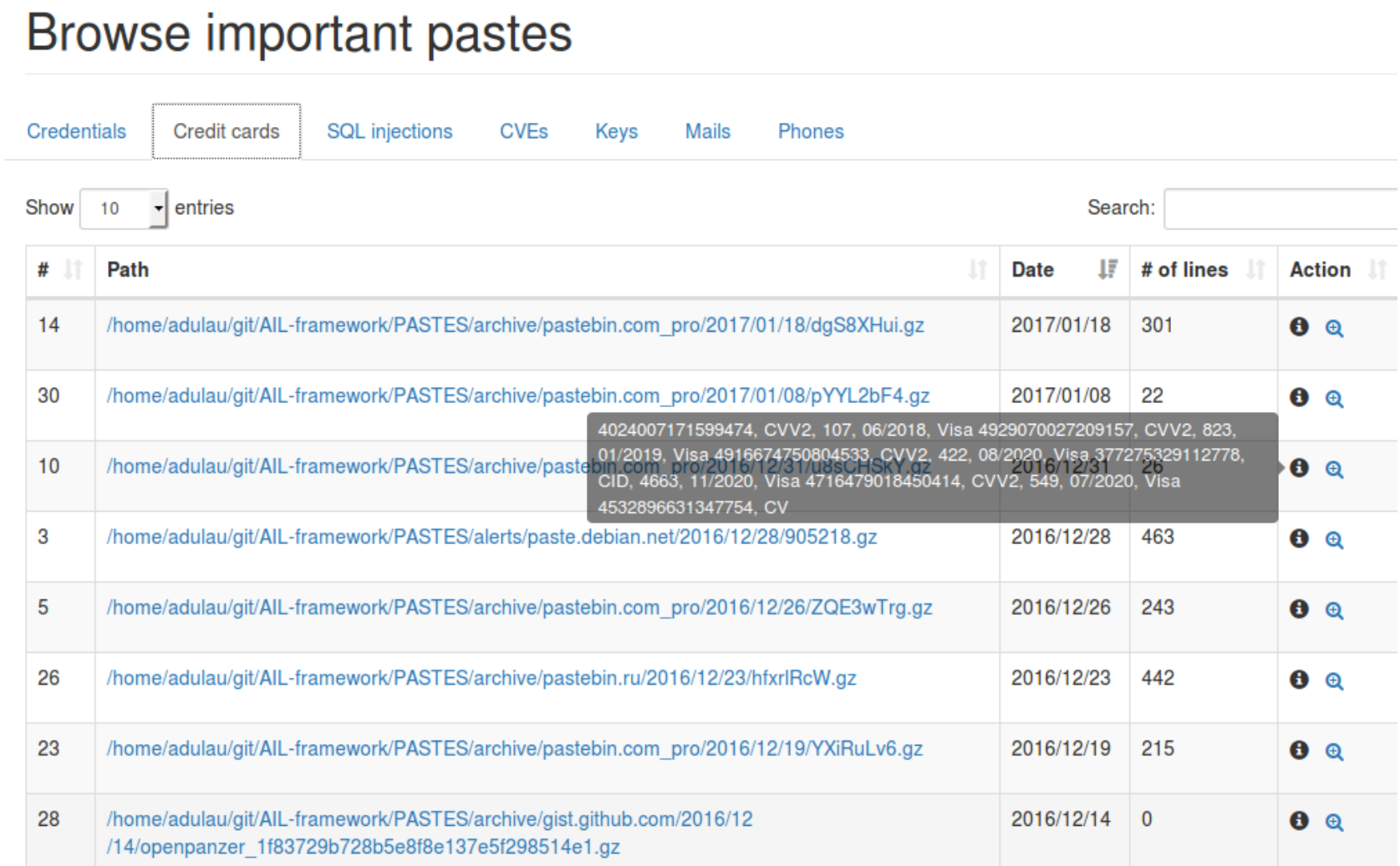
```
http://members2.mofosnetwork.com/access/login/
somosextremos:buddy1990
brazzers_glenn:cocklick
brazzers61:braves01

http://members.naughtyamerica.com/index.php?m=login
gernblanston:3unc2352
Janhuss141200:310575
igetalliwant:1377zeph
pwilks89:mon22key
Bman1551:hockey

MoFos IKnowThatGirl PublicPickUps
http://members2.mofos.com
Chrismagg40884:loganm40
brando1:zzbrando1
aacoen:1q2w3e4r
1rstunkle23:my8self

BraZZers
http://ma.brazzers.com
gcjensen:gcj21pva
skycsc17:rbcdnd

                                ############################################################
                                    >| Get Daily Update Fresh Porn Password Here |<

                                          =>   http://www.erq.io/4mF1
```

AIL

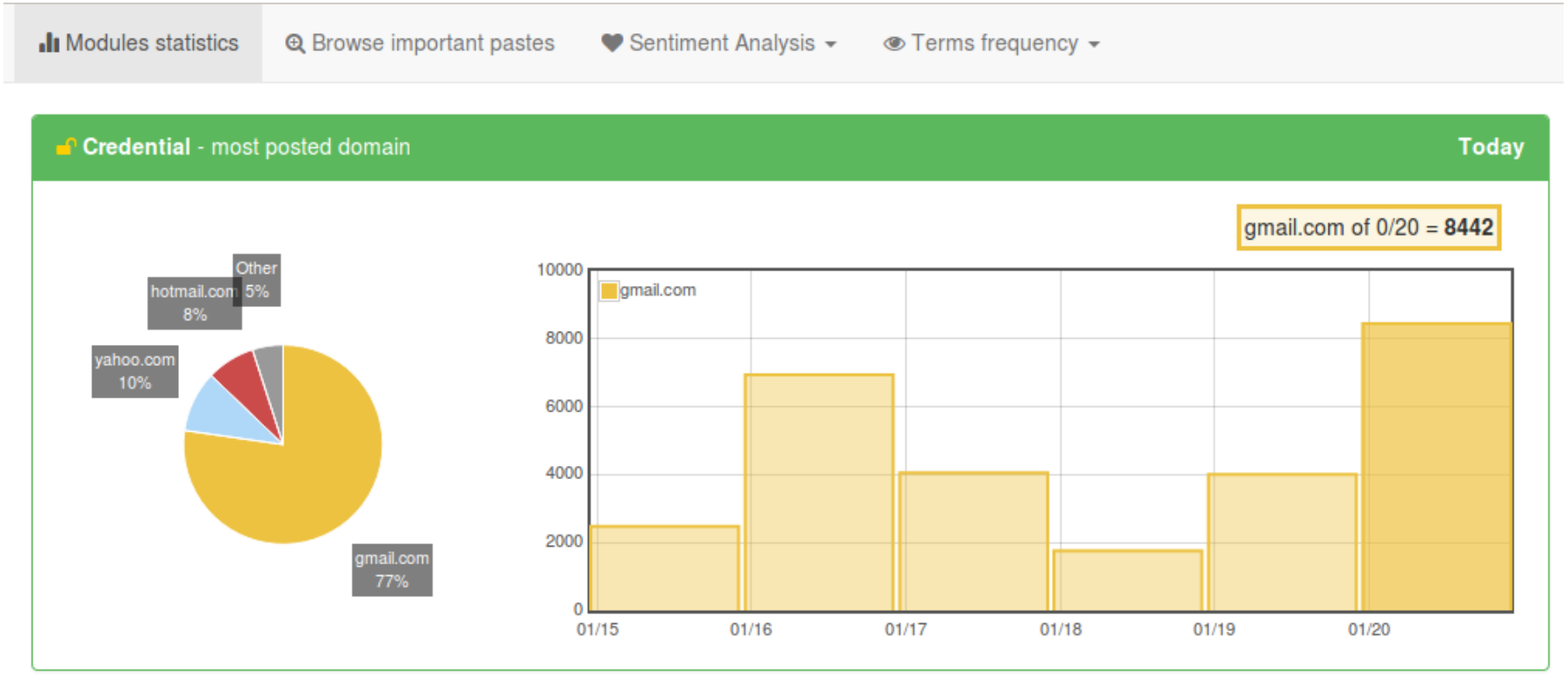
Content:

```
Over 50000+ custom hacked xxx passwords by us! Thousands of free xxx passwords to the hottest paysites!

##########################################################
 >| Get Fresh New Premium XXX Site Password Here |<

  =>   http://www.erq.io/4mF1


##########################################################



http://ddfnetwork.com/home.html
eu172936:hCSBgKh
UecwB6zs:159X0$!r#6K78FuU

http://pornxn.stiffia.com/user/login
feldwWek8939:RObluJ8XtB
dabudka:17891789
brajits:brajits1

http://members.pornstarplatinum.com/sblogin/login.php/
gigiriveracom:xxxjay
jayx123:xxxjay69

http://members.vividceleb.com/
Rufio99:fairhaven
ScHiFRvi:102091
Chaos84:HOLE5244
Riptor795:blade7
Domi80:harkonnen
GaggedUK:a1k0chan

http:
```

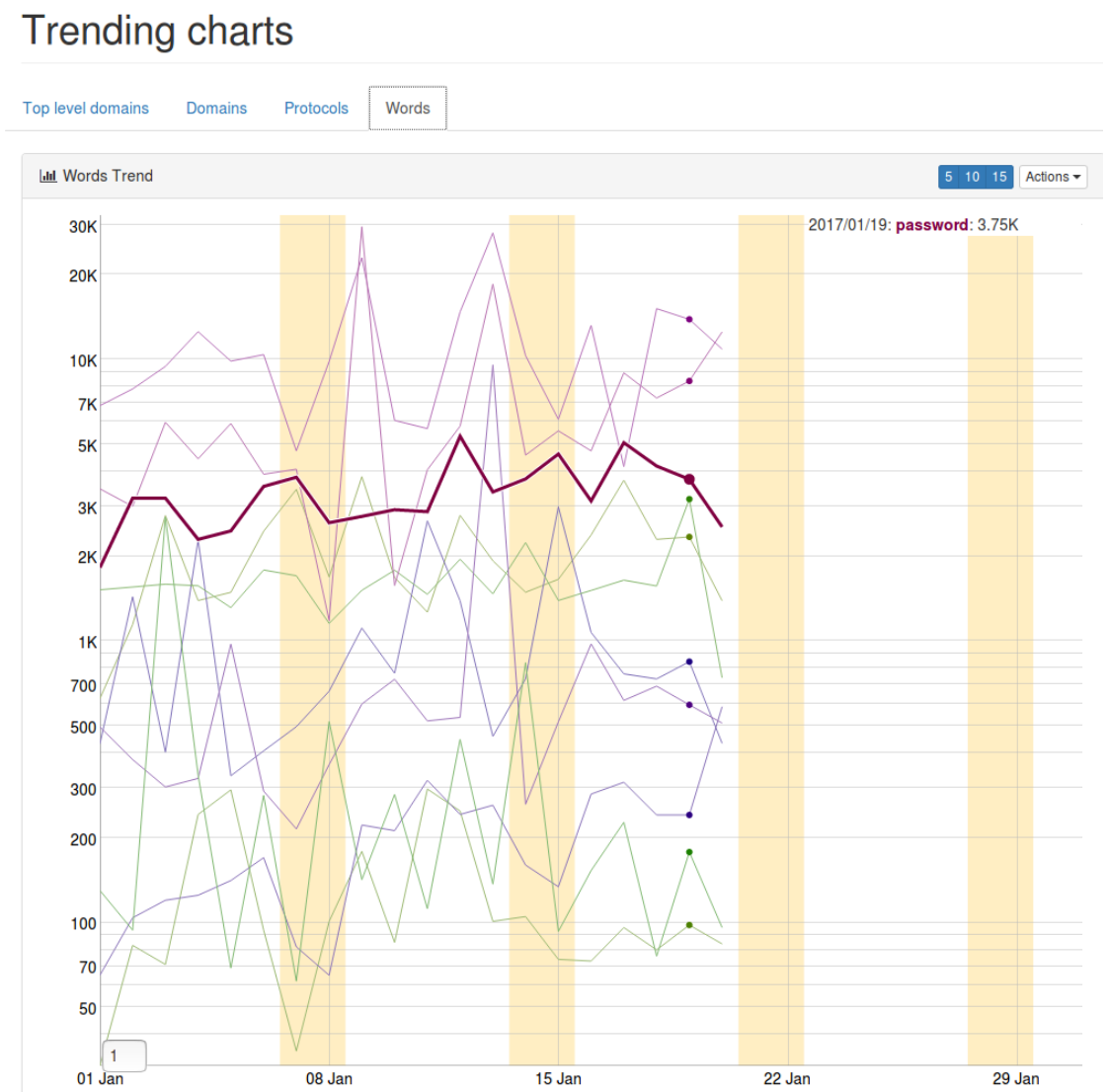
AIL


Browse important pastes
Credentials
Credit cards
SQL injections
CVEs
Keys
Mails
Phones
Show 10 entries
Search:
Path Date # of lines Action
14 /home/adulau/git/AIL-framework/PASTES/archive/pastebin.com_pro/2017/01/18/dgS8XHui.gz 2017/01/18 301
30 /home/adulau/git/AIL-framework/PASTES/archive/pastebin.com_pro/2017/01/08/pYYL2bF4.gz 2017/01/08 22
4024007171599474, CVV2, 107, 06/2018, Visa 4929070027209157, CVV2, 823, 01/2019, Visa 4916674750804533, CVV2, 422, 08/2020, Visa 377275329112778, CID, 4663, 11/2020, Visa 4716479018450414, CVV2, 549, 07/2020, Visa 4532896631347754, CV
10 /home/adulau/git/AIL-framework/PASTES/archive/pastebin.com_pro/2016/12/31/u8sCHSkY.gz 2016/12/31 26
3 /home/adulau/git/AIL-framework/PASTES/alerts/paste.debian.net/2016/12/28/905218.gz 2016/12/28 463
5 /home/adulau/git/AIL-framework/PASTES/archive/pastebin.com_pro/2016/12/26/ZQE3wTrg.gz 2016/12/26 243
26 /home/adulau/git/AIL-framework/PASTES/archive/pastebin.ru/2016/12/23/hfxrlRcW.gz 2016/12/23 442
23 /home/adulau/git/AIL-framework/PASTES/archive/pastebin.com_pro/2016/12/19/YXiRuLv6.gz 2016/12/19 215
28 /home/adulau/git/AIL-framework/PASTES/archive/gist.github.com/2016/12/14/openpanzer_1f83729b728b5e8f8e137e5f298514e1.gz 2016/12/14 0

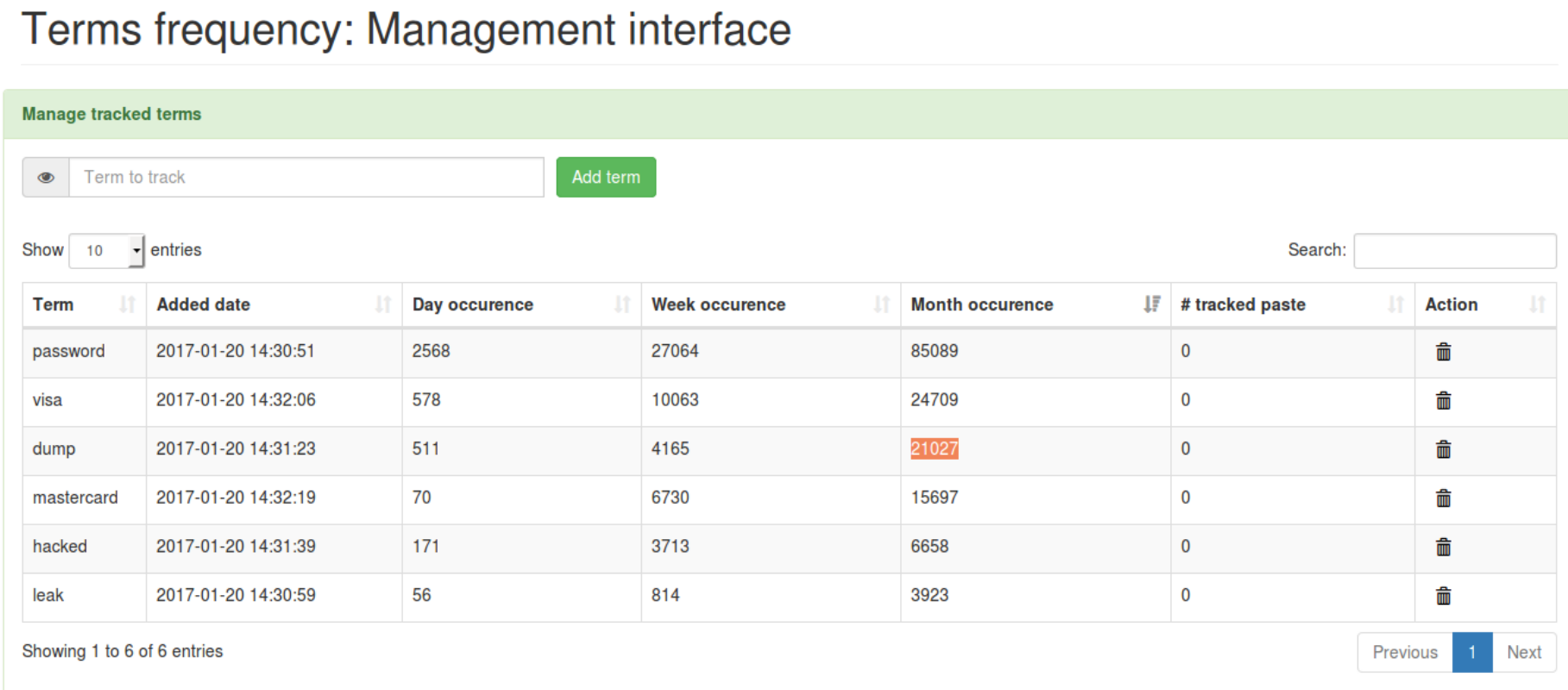
AIL


Modules statistics
Browse important pastes
Sentiment Analysis
Terms frequency
Credential - most posted domain
Today
gmail.com of 0/20 = 8442
Other 5%
hotmail.com 8%
yahoo.com 10%
gmail.com 77%
gmail.com
10000
8000
6000
4000
2000
0
01/15
01/16
01/17
01/18
01/19
01/20

AIL


Trending charts
Top level domains
Domains
Protocols
Words
Words Trend
5 10 15
Actions
2017/01/19: password: 3.75K
30K
20K
10K
7K
5K
3K
2K
1K
700
500
300
200
100
70
50
1
01 Jan
08 Jan
15 Jan
22 Jan
29 Jan

AIL


Terms frequency: Management interface
Manage tracked terms
Term to track
Add term
Show 10 entries
Search:
Term
Added date
Day occurence
Week occurence
Month occurence
tracked paste
Action
password 2017-01-20 14:30:51 2568 27064 85089 0
visa 2017-01-20 14:32:06 578 10063 24709 0
dump 2017-01-20 14:31:23 511 4165 21027 0
mastercard 2017-01-20 14:32:19 70 6730 15697 0
hacked 2017-01-20 14:31:39 171 3713 6658 0
leak 2017-01-20 14:30:59 56 814 3923 0
Showing 1 to 6 of 6 entries
Previous
1
Next

AIL

Terms frequency: Top set information

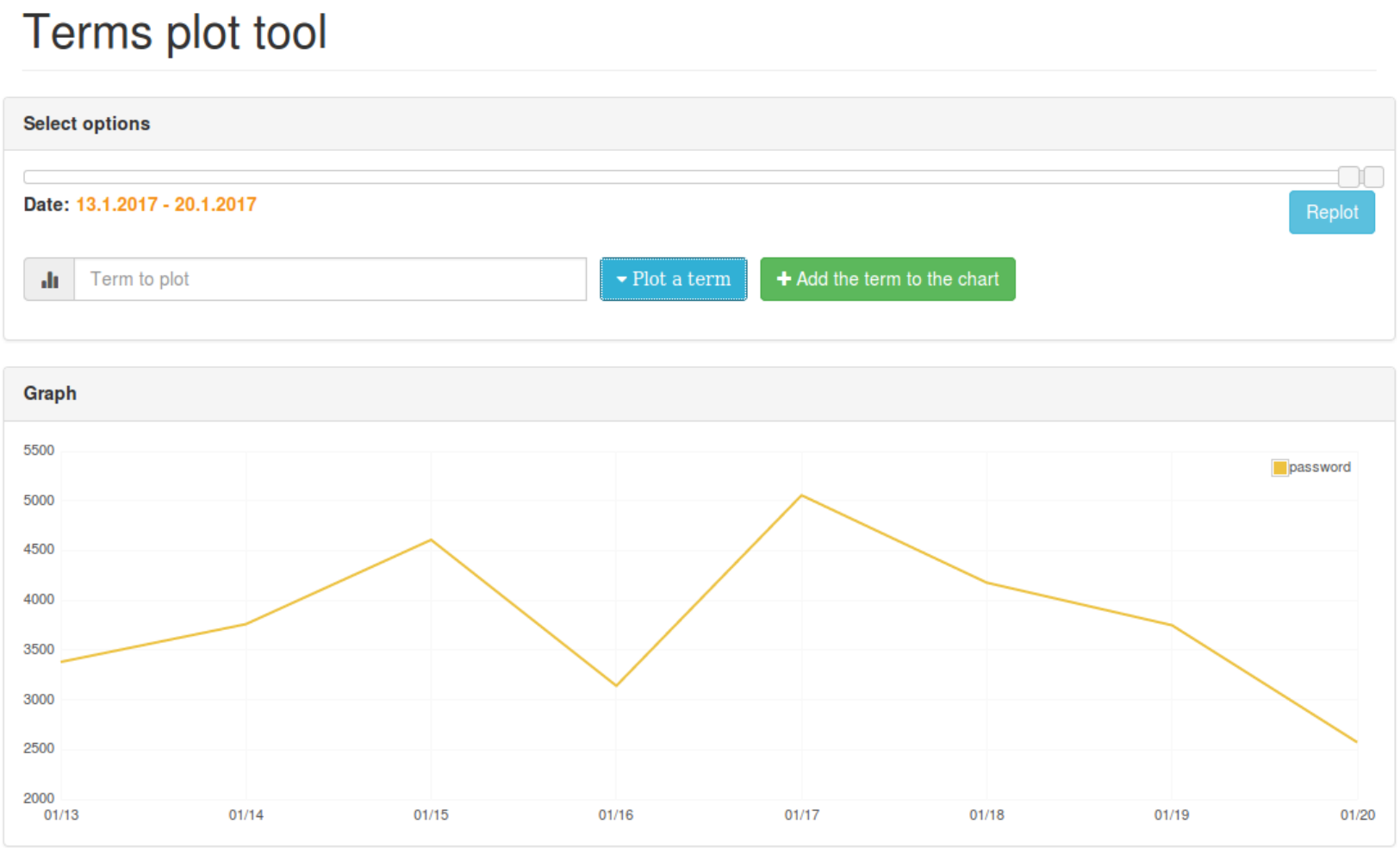
Today

Today top word

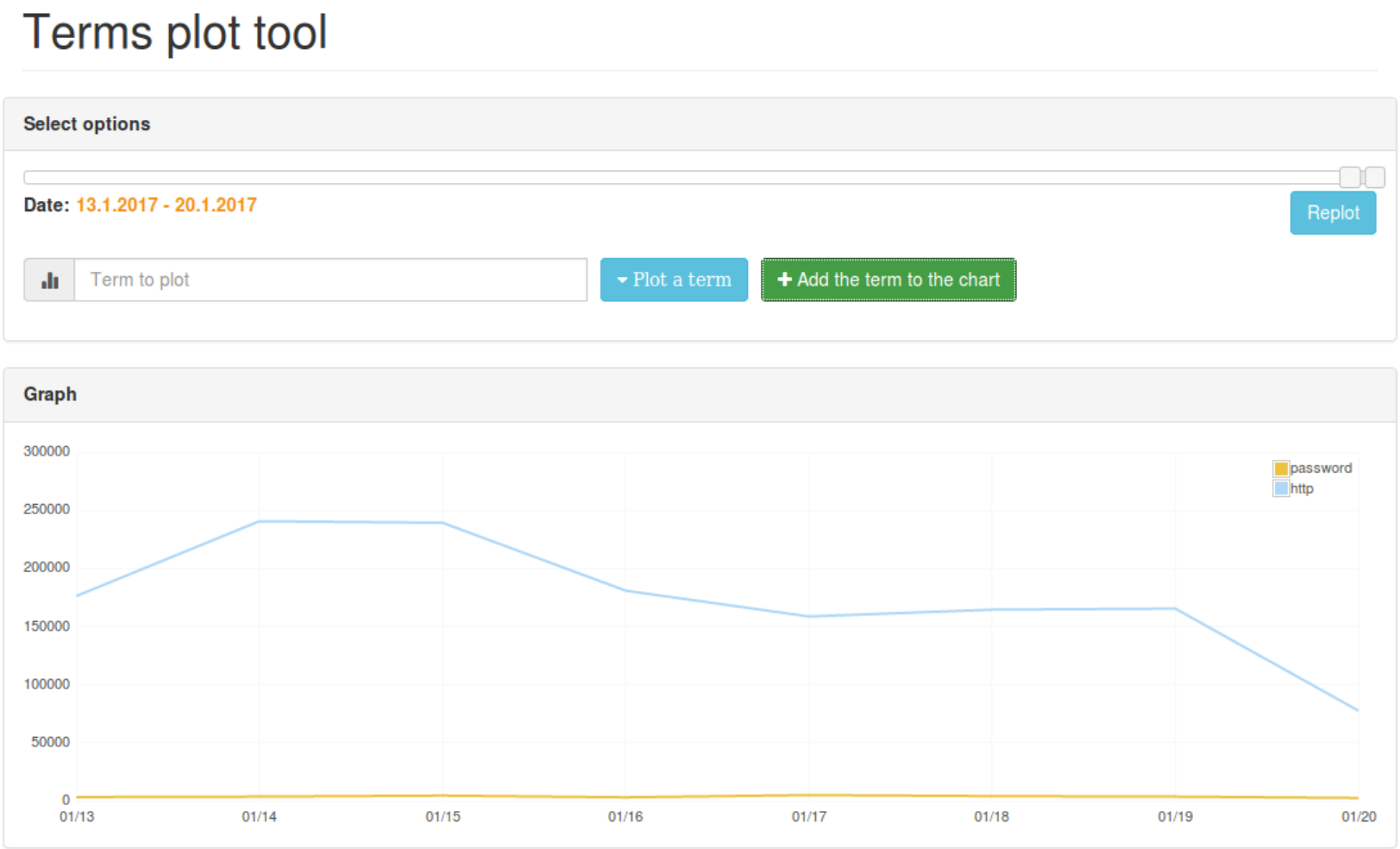
Term	Value	Action	Show	Position
http	77412		☑	4, 4
system	56091		☑	9, 8
hello	49575		☑	<20, <20
extinf	44974		☑	6, 6
string	37939		☑	<20, <20
2017	36375		☑	1, 1
filename	33703		☑	5, 5
name	33281		☑	20, 18
class	32503		☐	<20, <20
live	31779		☐	15, 11

Term	Value	Action	Show	Position
type	26057		☐	<20, <20
return	25584		☐	<20, <20
line	23080		☐	10, 13
data	22833		☐	<20, <20
index	22346		☐	<20, <20
config	22051		☐	<20, <20
rimworld	21623		☐	<20, <20
from	21027		☐	<20, <20
this	21006		☐	<20, <20
true	20731		☐	<20, <20

AIL


Terms plot tool
Select options
Date: 13.1.2017 - 20.1.2017
Replot
Term to plot
Plot a term
+ Add the term to the chart
Graph
password
5500
5000
4500
4000
3500
3000
2500
2000
01/13
01/14
01/15
01/16
01/17
01/18
01/19
01/20

AIL

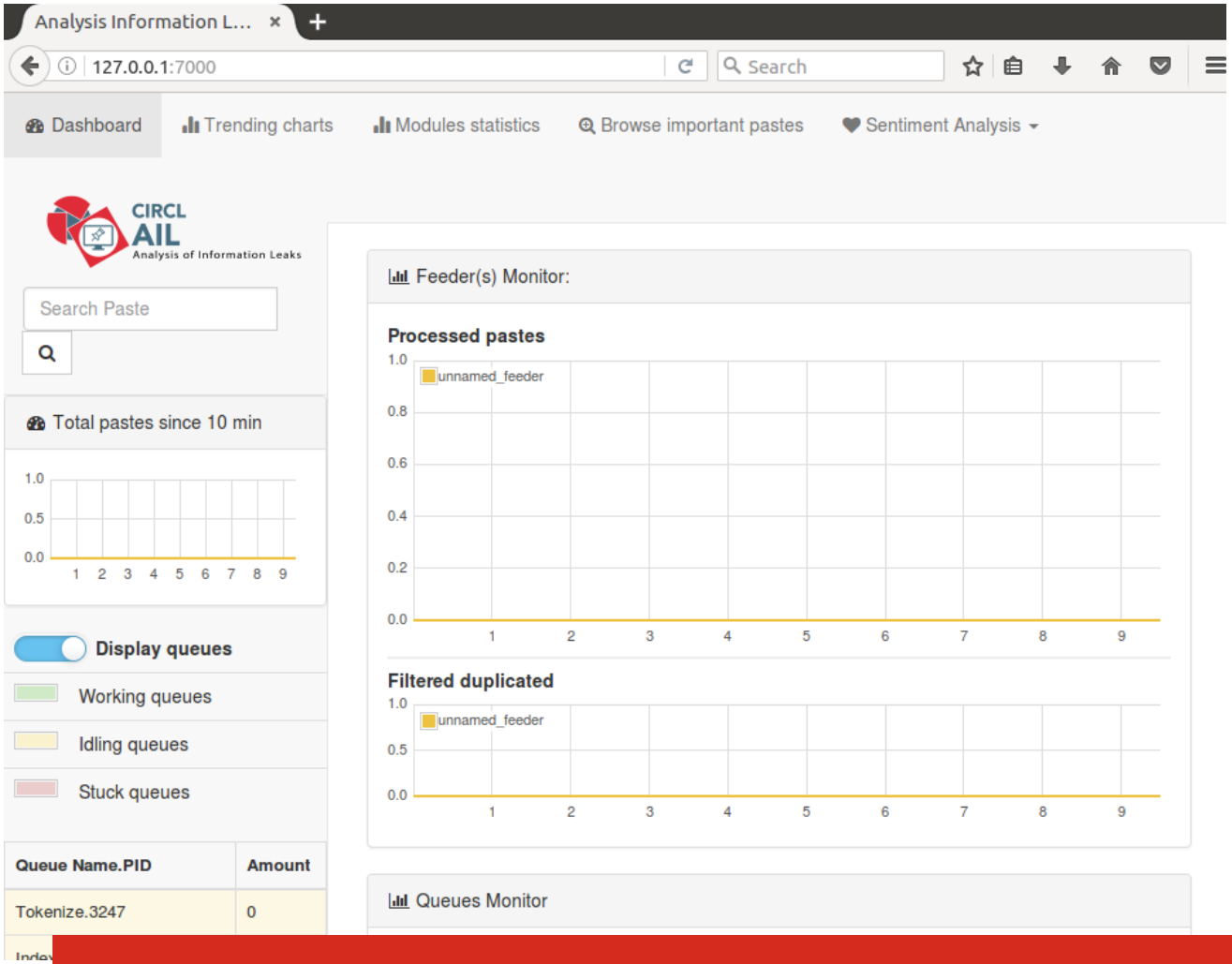

Terms plot tool
Select options
Date: 13.1.2017 - 20.1.2017
Replot
Term to plot
Plot a term
+ Add the term to the chart
Graph
300000
250000
200000
150000
100000
50000
0
01/13
01/14
01/15
01/16
01/17
01/18
01/19
01/20
password
http

CIRCL
Computer Incident
Response Center
Luxembourg

- AIL - Run your own instance

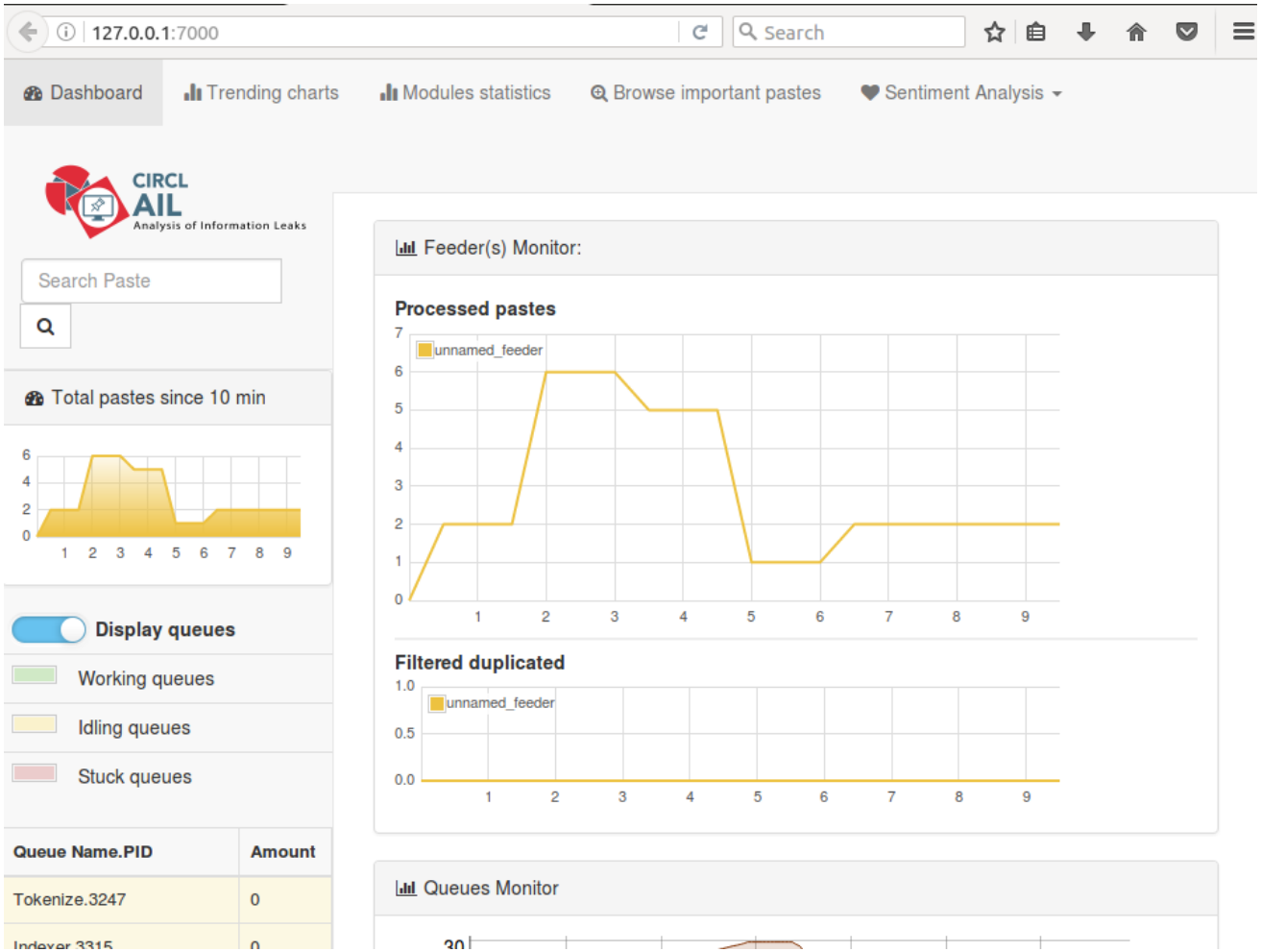
AIL - Run your own instance

`https://github.com/CIRCL/AIL-framework`



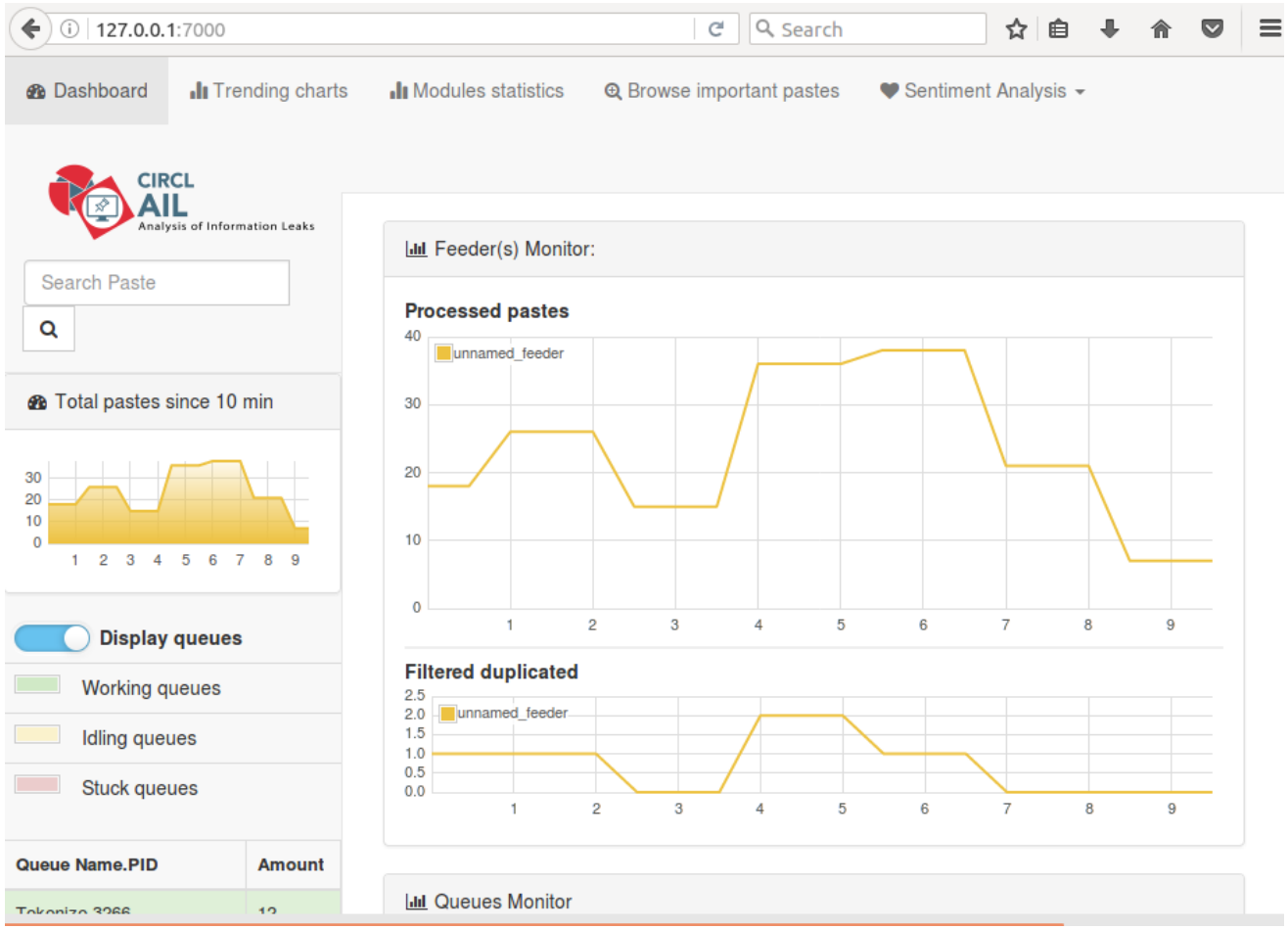
AIL - Run your own instance: With pystemon

https://github.com/CIRCL/pystemon



AIL - Run your own instance: Use CIRCL feed

Request access at: info@circl.lu



CIRCL
Computer Incident
Response Center
Luxembourg

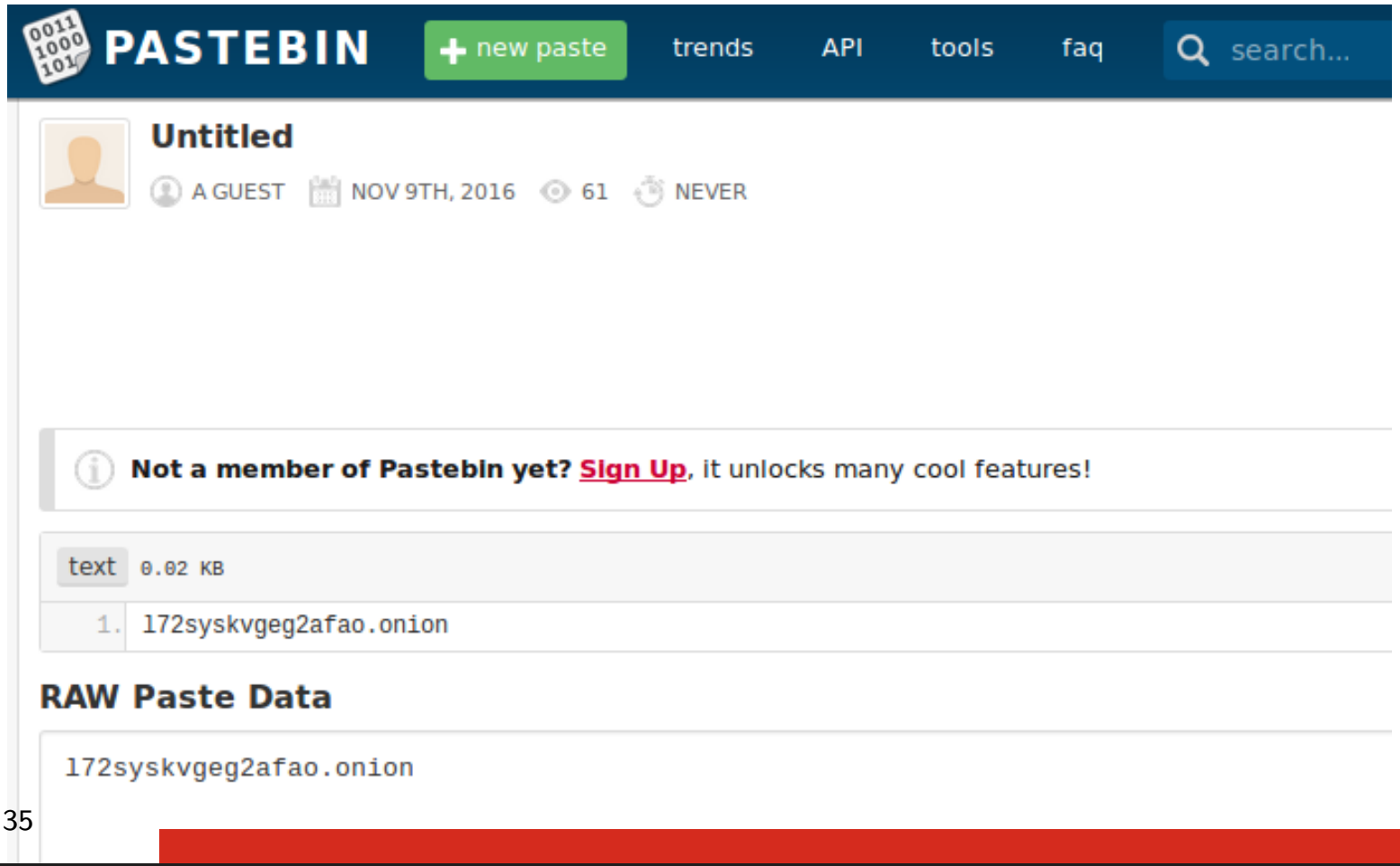
Thank you

CIRCL
Computer Incident
Response Center
Luxembourg

- Pastebin Onion Honeytoken: 1th try

Pastebin Onion Honeytoken: 1th try

1. Hidden Service started: l72syskvgeg2afao.onion
2. 2016-11-09 published: pastebin.com/zdsqxX7u



Pastebin Onion Honeytoken: 1th try

```
[10/Nov/2016:00:05:07 +0100]
"GET / HTTP/1.1" 200 11576 "-"
"Mozilla/5.0 (Macintosh; Intel Mac OS X 10_11_5)
    AppleWebKit/537.36 (KHTML, like Gecko)
    Chrome/49.0.2623.87 Safari/537.36"
[11/Nov/2016:00:05:06 +0100]
"GET / HTTP/1.1" 200 11576 "-"
"Mozilla/5.0 (Macintosh; Intel Mac OS X 10_11_5)
    AppleWebKit/537.36 (KHTML, like Gecko)
    Chrome/49.0.2623.87 Safari/537.36"

2016-11-12 -----|
2016-11-13 -----| Hidden Service was down
2016-11-14 -----|
```

Pastebin Onion Honeytoken: 1th try

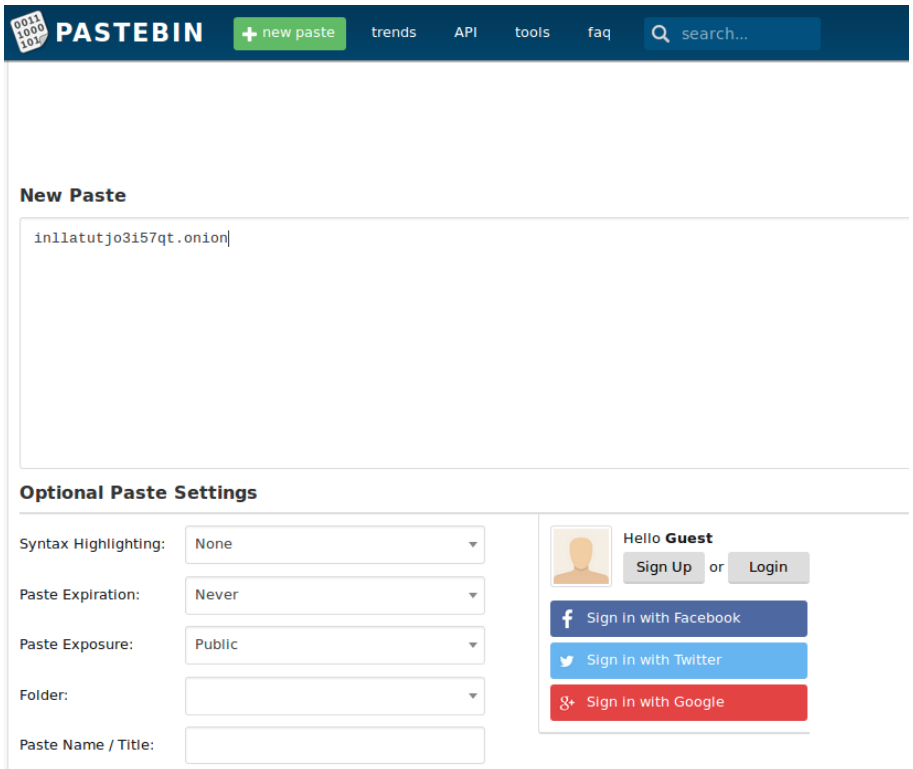
```
[15/Nov/2016:00:05:13 +0100]
[16/Nov/2016:09:14:22 +0100]
[17/Nov/2016:09:07:35 +0100]
[18/Nov/2016:09:19:42 +0100]
[20/Nov/2016:09:15:27 +0100]
[01/Dec/2016:09:17:48 +0100]
[04/Dec/2016:09:34:57 +0100]
[07/Dec/2016:09:30:32 +0100]
[15/Dec/2016:09:31:36 +0100]
[22/Dec/2016:09:44:15 +0100]
```

CIRCL
Computer Incident
Response Center
Luxembourg

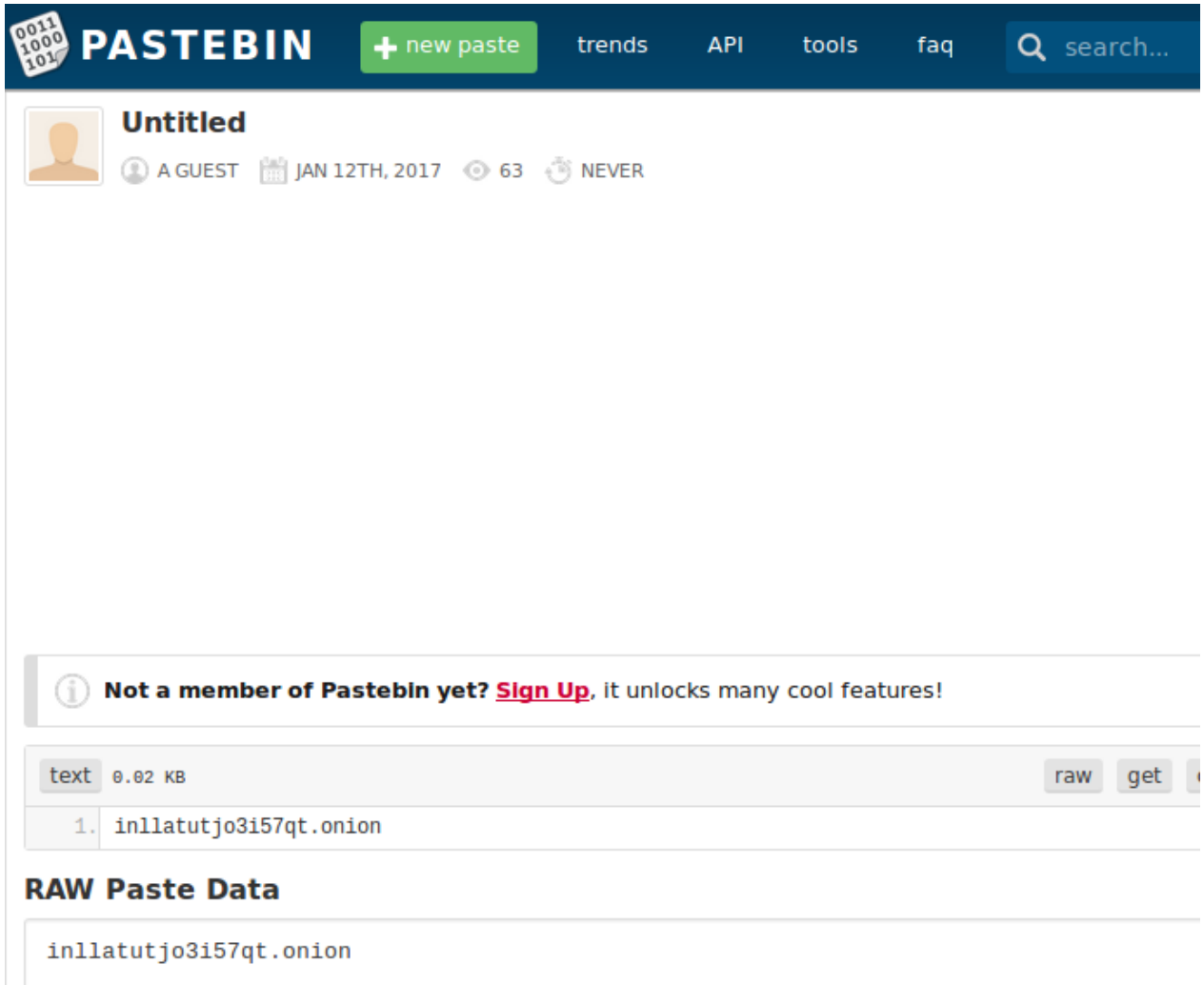
- Pastebin Onion Honeytoken: 2nd try

Pastebin Onion Honeytoken: 2nd try

1. 2016-12-23: Hidden Service stopped: l72syskvgeg2afao.onion
2. 2016-12-23: Hidden Service started: inllatutjo3i57qt.onion
3. Not published; No access at all
4. 2017-01-12 published: pastebin.com/Jh2SLG27



Pastebin Onion Honeytoken: 2nd try



Pastebin Onion Honeytoken: 2nd try

```
[12/Jan/2017:15:35:31 +0100] "GET / HTTP/1.1" 200 3525 "-"
 "python-requests/2.4.3 CPython/2.7.9 Linux/3.16.0-4-amd64"

[12/Jan/2017:22:17:36 +0100] "GET / HTTP/1.1" 200 3525 "-"
 "python-requests/2.12.4"

[13/Jan/2017:01:35:08 +0100] "GET / HTTP/1.1" 200 3525 "-"
 "python-requests/2.4.3 CPython/2.7.9 Linux/3.16.0-4-amd64"

[13/Jan/2017:07:10:42 +0100] "GET / HTTP/1.1" 200 3525 "-"
 "python-requests/2.12.4"
...
...
```

Pastebin Onion Honeytoken: 2nd try

```
...
...
[17/Jan/2017:19:13:36 +0100] "GET / HTTP/1.1" 200 3525 "-"
 "python-requests/2.12.4"

[18/Jan/2017:04:43:19 +0100] "GET / HTTP/1.1" 200 3525 "-"
 "python-requests/2.12.4"

[18/Jan/2017:11:00:33 +0100] "GET / HTTP/1.1" 200 3525 "-"
 "python-requests/2.4.3 CPython/2.7.9 Linux/3.16.0-4-amd64"

[18/Jan/2017:15:37:52 +0100] "GET / HTTP/1.1" 200 3525 "-"
 "python-requests/2.4.3 CPython/2.7.9 Linux/3.16.0-4-amd64"
```