The NSF Bro Center of Expertise

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The Bro Network Monitor

Open Source
BSD License

Analyses

Intrusion Detection | Vulnerabilit. Mgmt | File Analysis | Traffic Measure-ment | Traffic Control | Compliance Monitoring

Platform

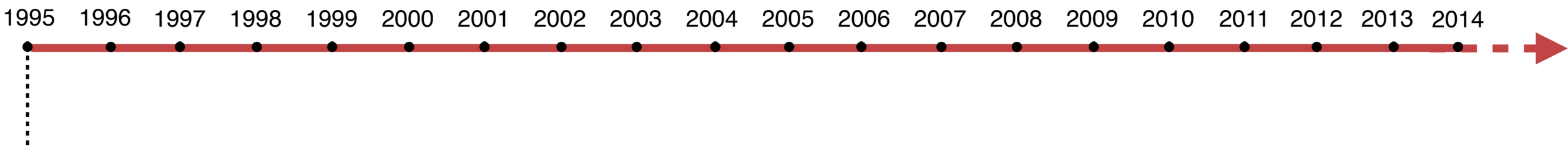
Programming Language | Standard Library

Packet Processing

Tap

Network

Bro History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Vern writes 1st line of code

Bro History

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v0.2
1st CHANGES entry

v0.6
RegExps
Login analysis

v0.7a90
Profiling
State Mgmt

v0.8aX/0.9aX
SSL/SMB
STABLE releases
BroLite

v1.1/v1.2
when Stmt
Resource tuning
Broccoli
DPD

v1.5
BroControl

v2.0
User Experience

v2.2
File Analysis
Summary Stats

v2.3
Performance
SNMP,
Radius, SSL++

LBNL starts using Bro operationally

v0.4
HTTP analysis
Scan detector
IP fragments
Linux support

v0.7a175/0.8aX
Signatures
SMTP
IPv6 support
User manual

v1.0
BinPAC
IRC/RPC analyzers
64-bit support
Sane version numbers

v1.4
DHCP/BitTorrent
HTTP entities
NetFlow
Bro Lite Deprecated

Bro SDCI

v2.1
IPv6
Input Framew.

Bro Center

v0.7a48
Consistent CHANGES

0.8a37
Communication
Persistence
Namespaces
Log Rotation

v1.3
Ctor expressions
GeoIP
Conn Compressor

Bro History

Academic Publications

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- 2013: v2.3, Performance, SNMP, Radius, SSL++
- 2014: Bro Center (NSF)

Deployments

Installations across the US

Universities
Research Labs
Supercomputer Centers
Government Organizations
Fortune 50 Enterprises

Examples

Lawrence Berkeley National Lab
National Center for Supercomputing Applications
Indiana University
Carnegie Mellon
National Center for Atmospheric Research

... and many more sites I can't talk about.

Fully integrated into *Security Onion*

Popular security-oriented Linux distribution

Community

50/90/150 attendees at BroCon '12/'13/'14
60 organizations at BroCon '14
2,500 Twitter followers
800 mailing list subscribers
70 users average on IRC channel
10,000 downloads / version
from 150 countries
> 30,000 Onion downloads ('12)

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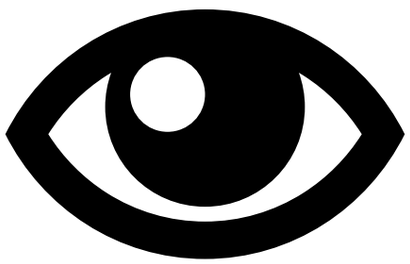
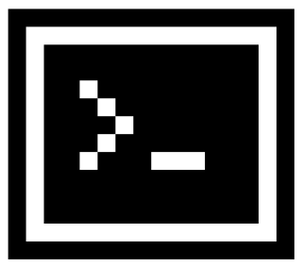


Individual Advice

Training Material, Guidelines, Best Practices



Development, Maintenance

`http://nsf.bro.org` `mailto:nsf@bro.org`

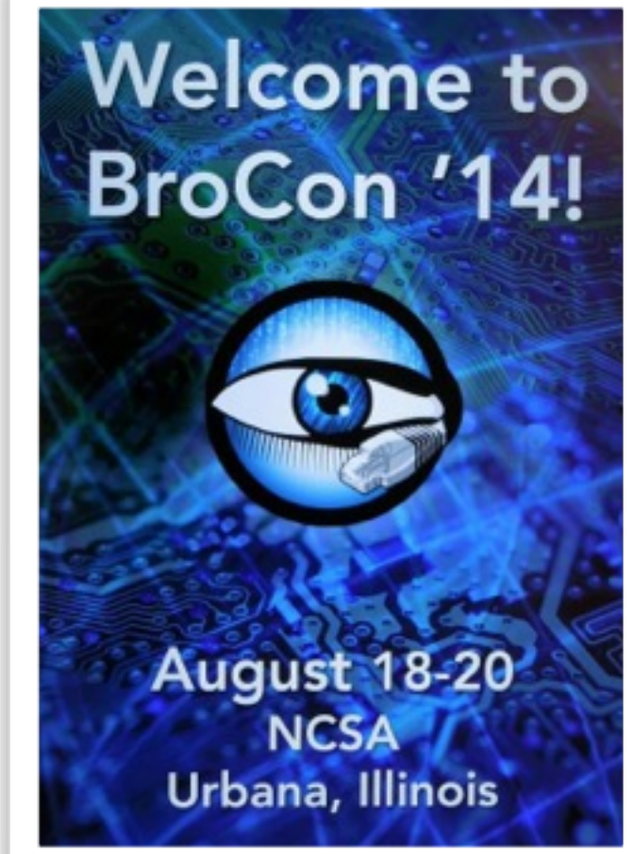
Center Team

Located at *International Computer Science Institute*, Berkeley, CA; and the *National Center for Supercomputing Applications,* Urbana-Champaign, IL.

Events

BroCon 2014.

2.5 days, 150 attendees, 4 corporate sponsors.
Presentations, training, demos.



Bro Workshops.

NSF Cybersecurity Summits '13 & '14.
DOE NSM Meeting, June '14.

In Planing.

Advanced Workshop at ICSI.
BroCon '15 (East coast, tentatively).
Co-organize BoFs/demos at Internet2 & Supercomputing.

Current Engagements & Collaborations

Individual Advice.

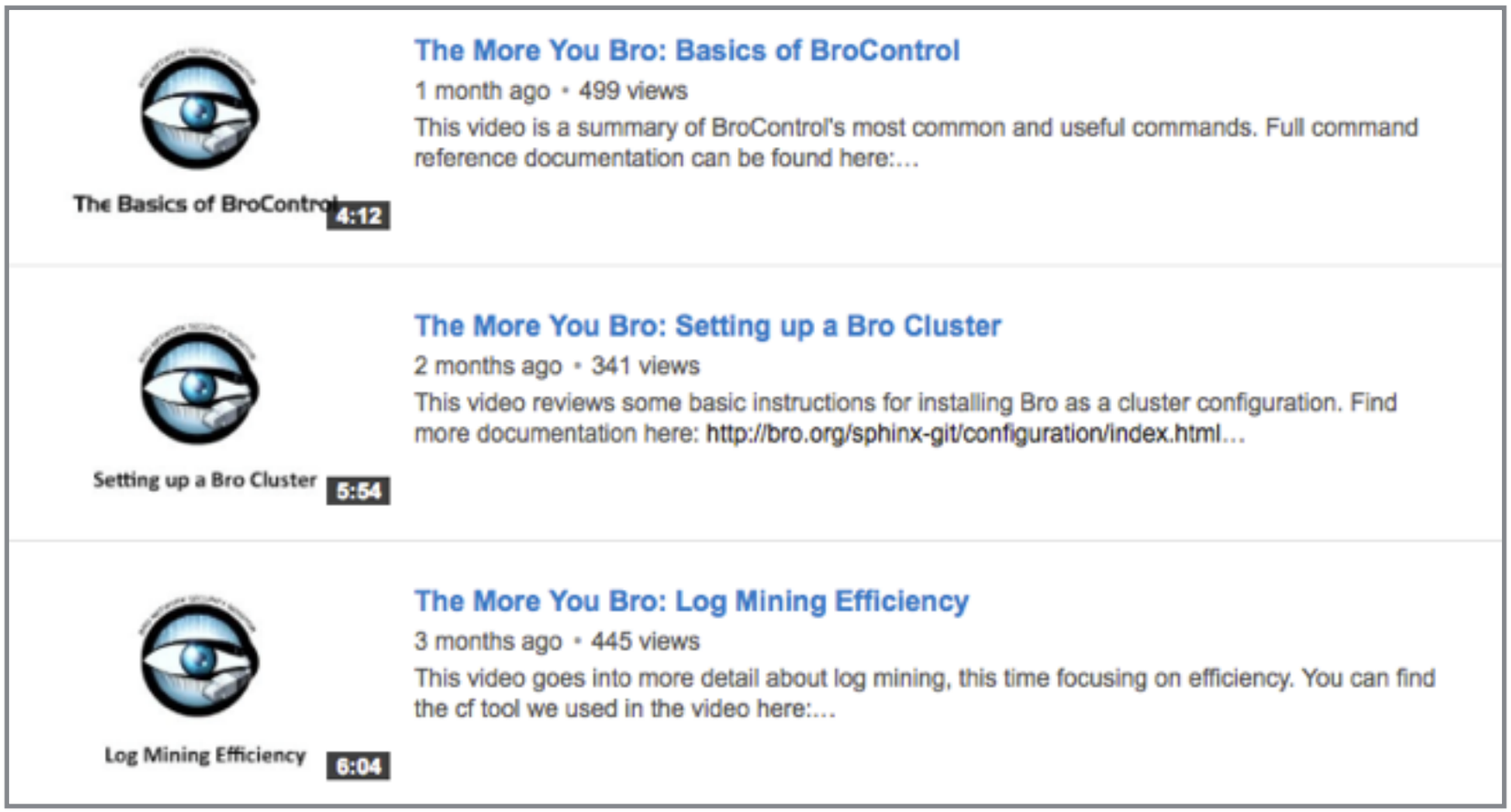
Universities, NSF MREFs, K-12 schools.

Collaborations.

CTSC	Outreach & training, security reviews.
ESnet	SDN, Science DMZ security.
RIT	Teaching Community.

Teaching Bro - Material

Video Tutorials



`http://www.youtube.com/user/BroPlatform`

Teaching Bro - Material

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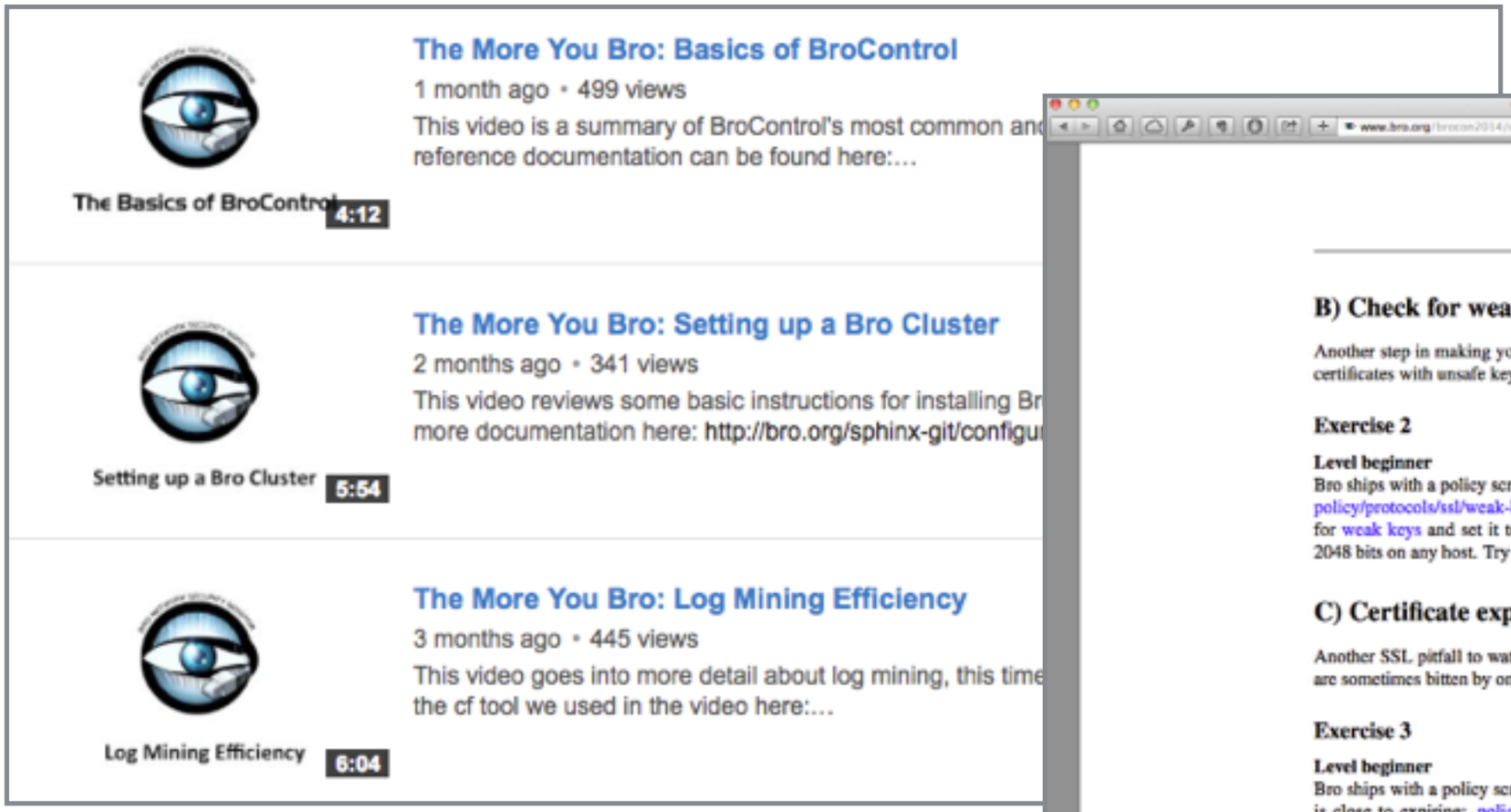

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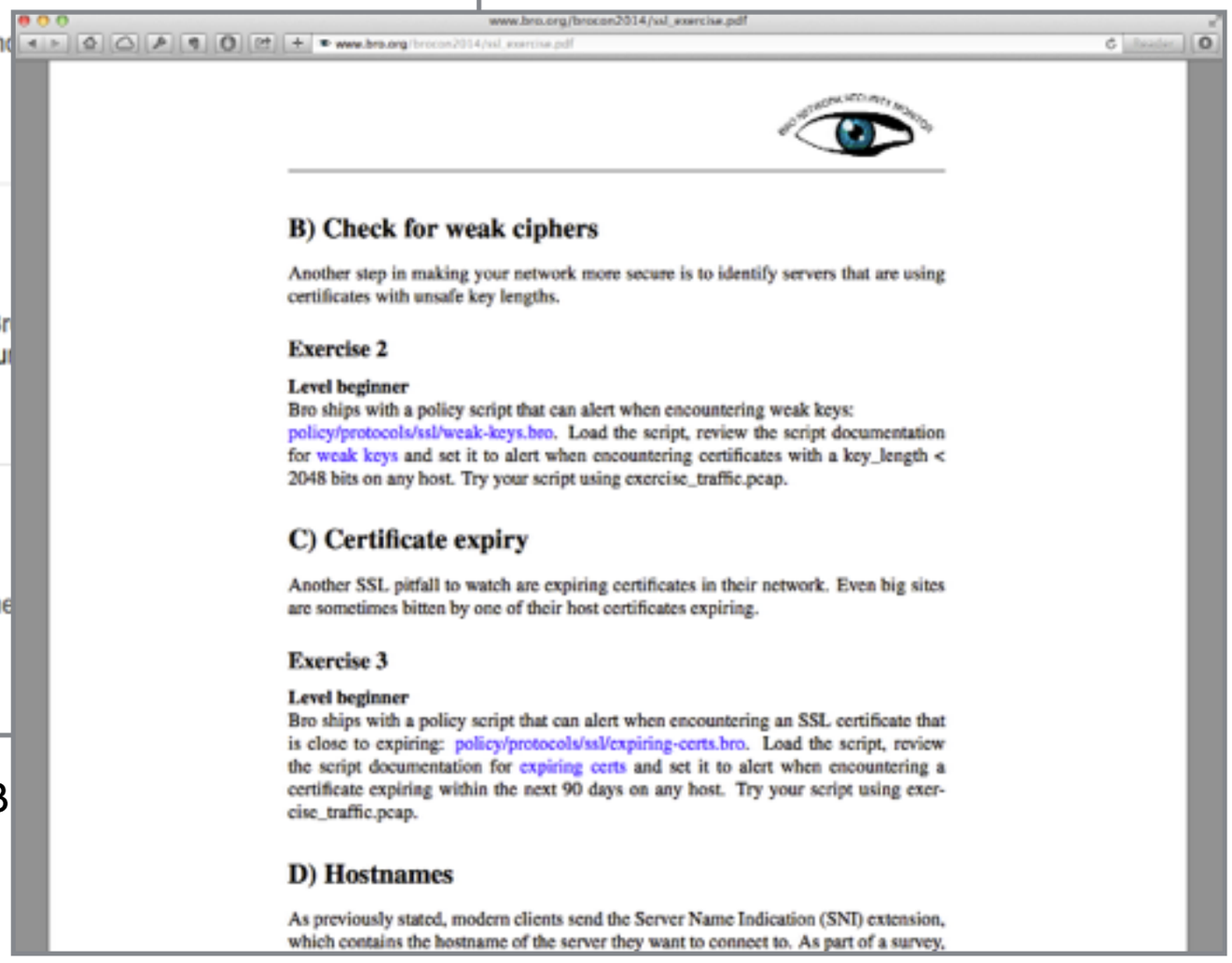
Exercises



Teaching Bro - Infrastructure

`live.bro.org` SSH into a virtual Bro environment.

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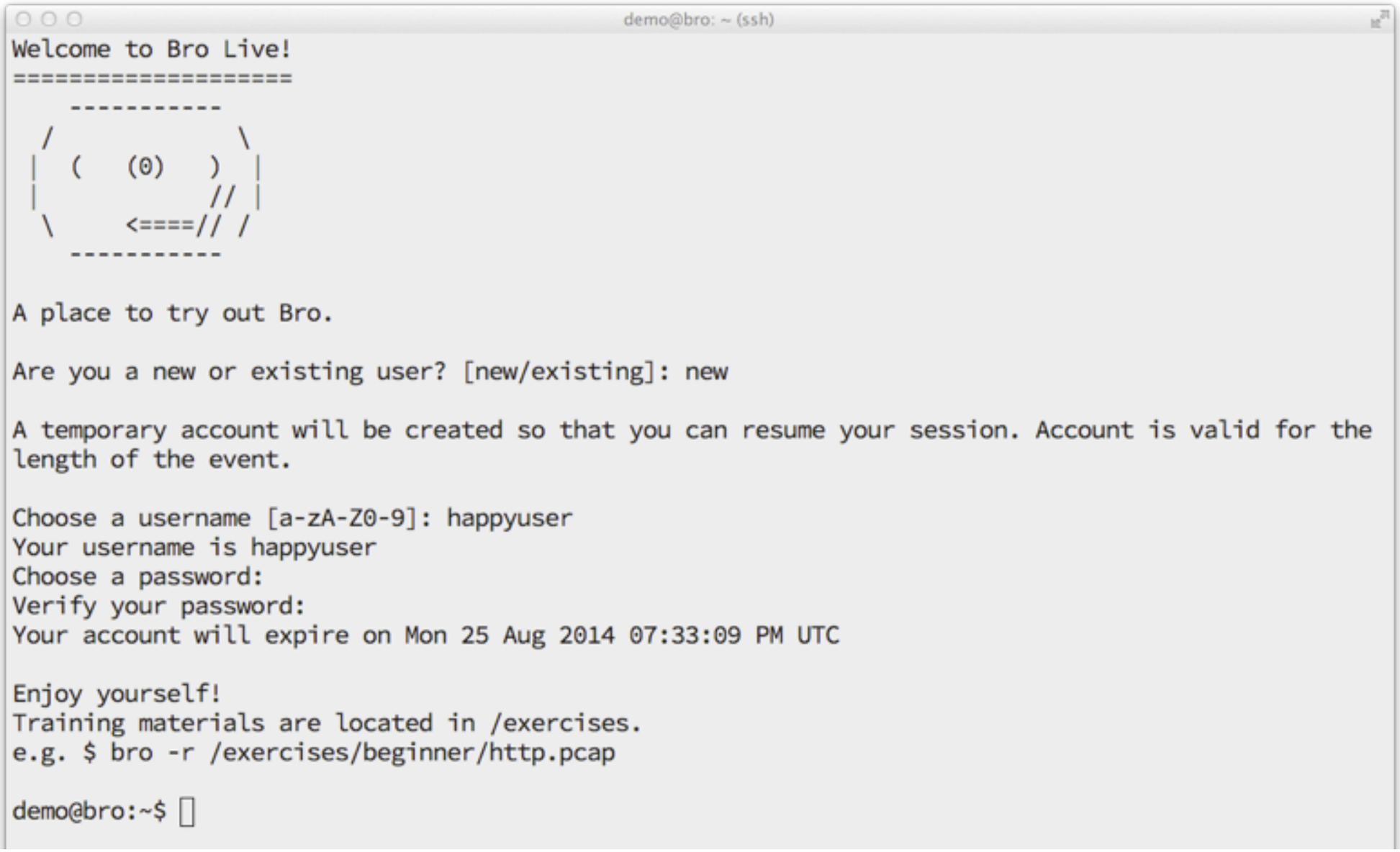

Teaching Bro - Infrastructure

`try.bro.org` A web-based Bro sandbox.

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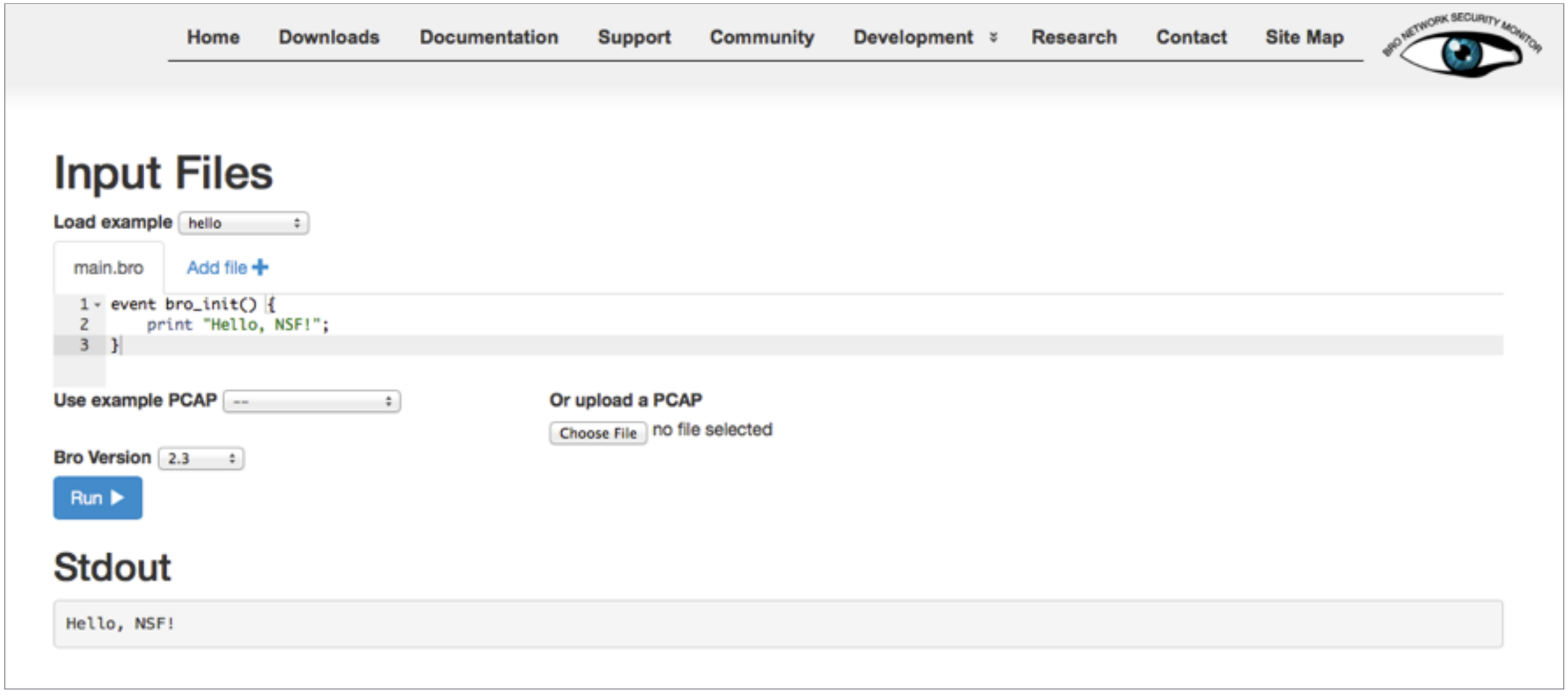
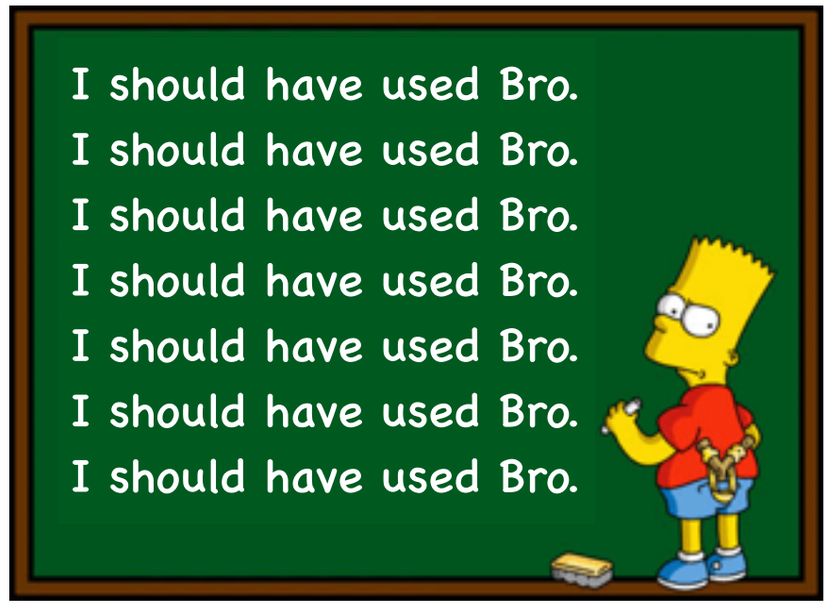


The Bro Teaching Community

People are learning Bro—and they are using Bro to learn.



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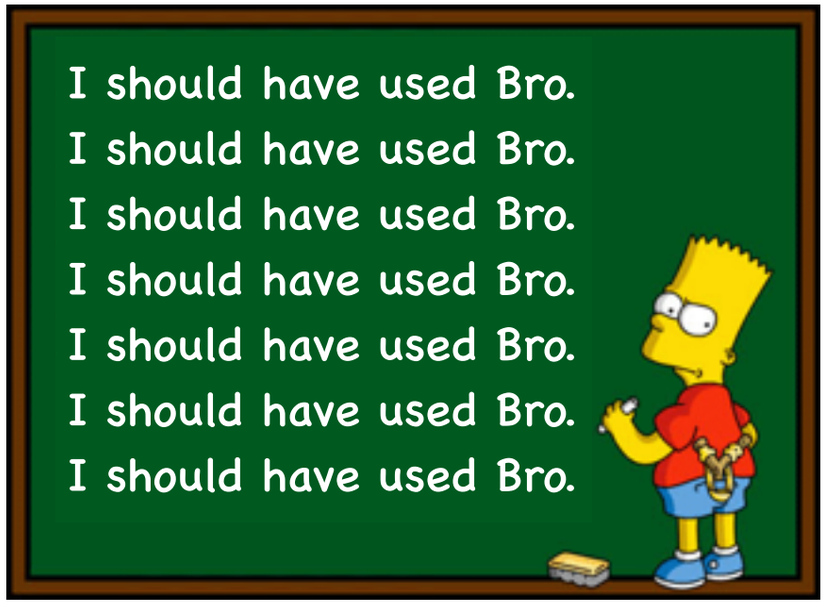

Kick-start community of educators teaching (with) Bro.

Exchange experiences, methods, & material.

We provide logistics and technical advice.

Weekly calls, mailing list, repository with seed material, access to team

Our initial solicitation met broad interest.

Universities & colleges, corporate IT, government organizations.

The Center is promoting Bro as a comprehensive, low-cost security capability for the NSF community.

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