Broadmap

Bro Workshop 2011
NCSA, Urbana-Champaign, IL

Outline

Near- to Medium-term Roadmap

Current Research Projects

Workshop Wrap-Up

Version 2.0 Final

Version 2.0 Final

Timeline: Early December.

Default scripts rewritten from scratch.

New logging system.

New build and packaging system.

New auto-documentation system (Broxygen).

Lots of bugs fixed.

Obsolete code removed.

New development infrastructure.

New regression testing framework.

New web server.

New mailing lists.

New logo.

Upcoming

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Bro 2.1

New user's guide.

Overhauled IPv6 support.

Logging extensions.

Binary logging/Postgresql/CouchDB/SQLite(?) / Threads.

Integration with REN-ISACs CIF.

Reaction framework.

New/improved analyzers.

Syslog/GridFTP/NFS/SMB/BitTorrent.

Extended test-suite.

Aiming for 3-4 months release cycle.

In Planning

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Comprehensive Bro Archive Network (CBAN)

Easy installation of 3rd party scripts.

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File Analyzer

Protocol-independent file hashing, extraction, decompression, analysis, and reassembly.

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Input Framework.

Real-time interface to external intelligence.

In Planning

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Deep Cluster

Pushing Bro deep into your network.

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Unified packet acquisition and control.

Plugin-based interface to platform capabilities.

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Internal reorganization and cleanup.

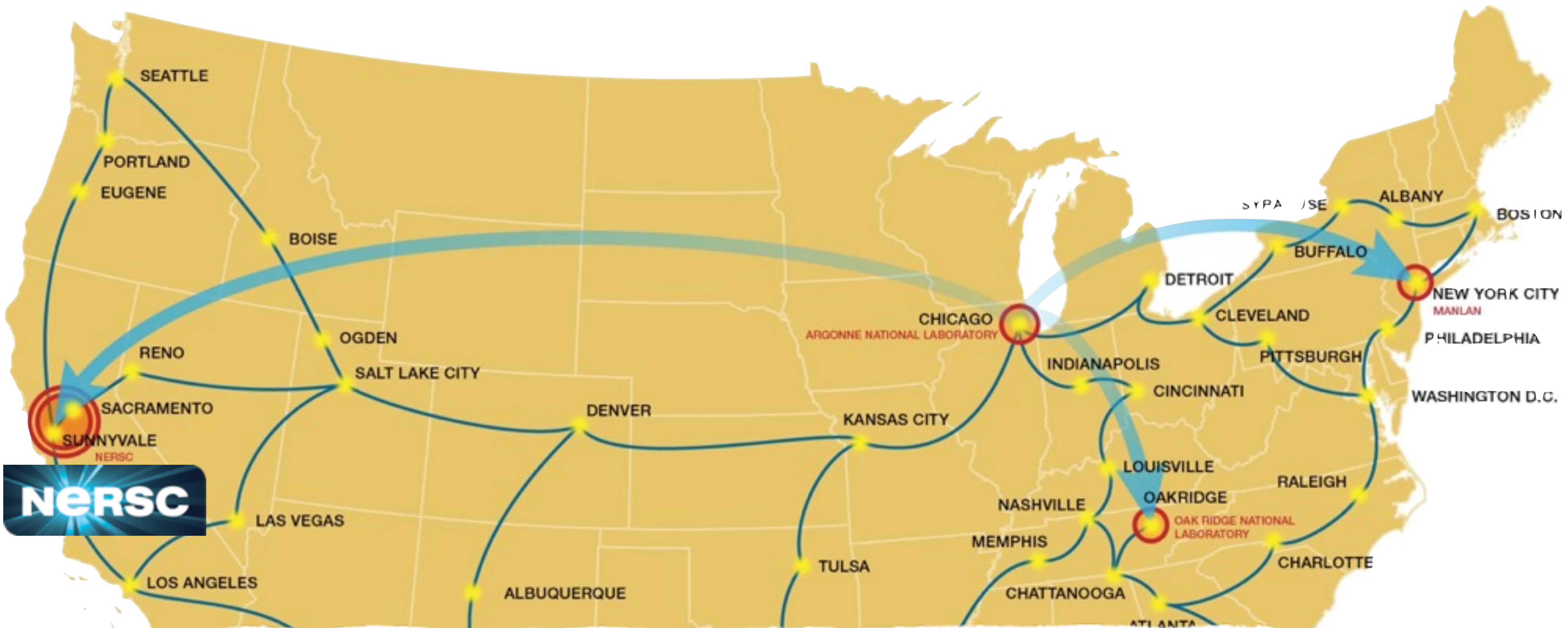
Move to a more modular structure.

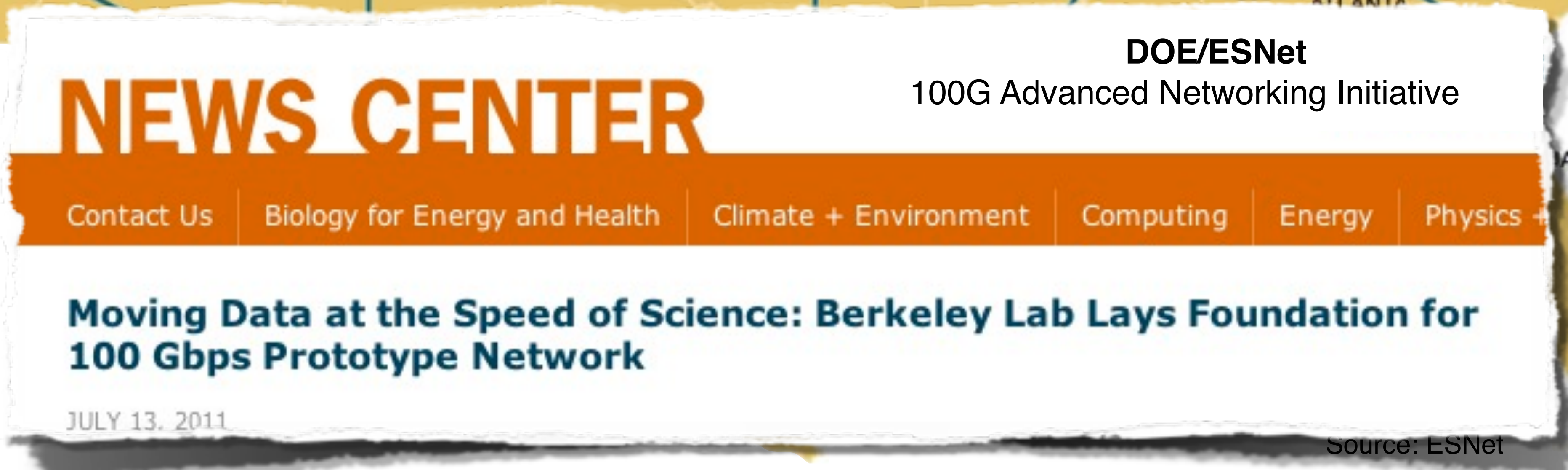
Current Research Projects

ICSI

INTERNATIONAL COMPUTER SCIENCE INSTITUTE

Next Stop: 100 Gb/s





NEWS CENTER

DOE/ESNet
100G Advanced Networking Initiative

Contact Us | Biology for Energy and Health | Climate + Environment | Computing | Energy | Physics +

Moving Data at the Speed of Science: Berkeley Lab Lays Foundation for 100 Gbps Prototype Network

JULY 13, 2011

Source: ESNet

Source: ESNet

100 Gb/s Load-balancer

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U.S. DEPARTMENT OF ENERGY | Office of Science

100 Gb/s Load-balancer

SBIR Phase 2 to build prototype.

100 Gb/s Load-balancer

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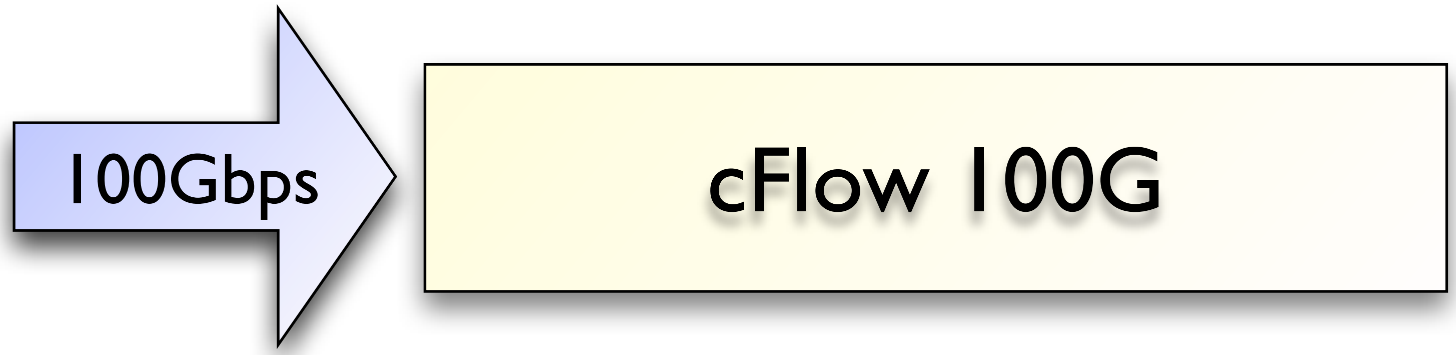
cpacket NETWORKS

ICSI INTERNATIONAL COMPUTER SCIENCE INSTITUTE

NERSC

100 Gb/s Load-balancer



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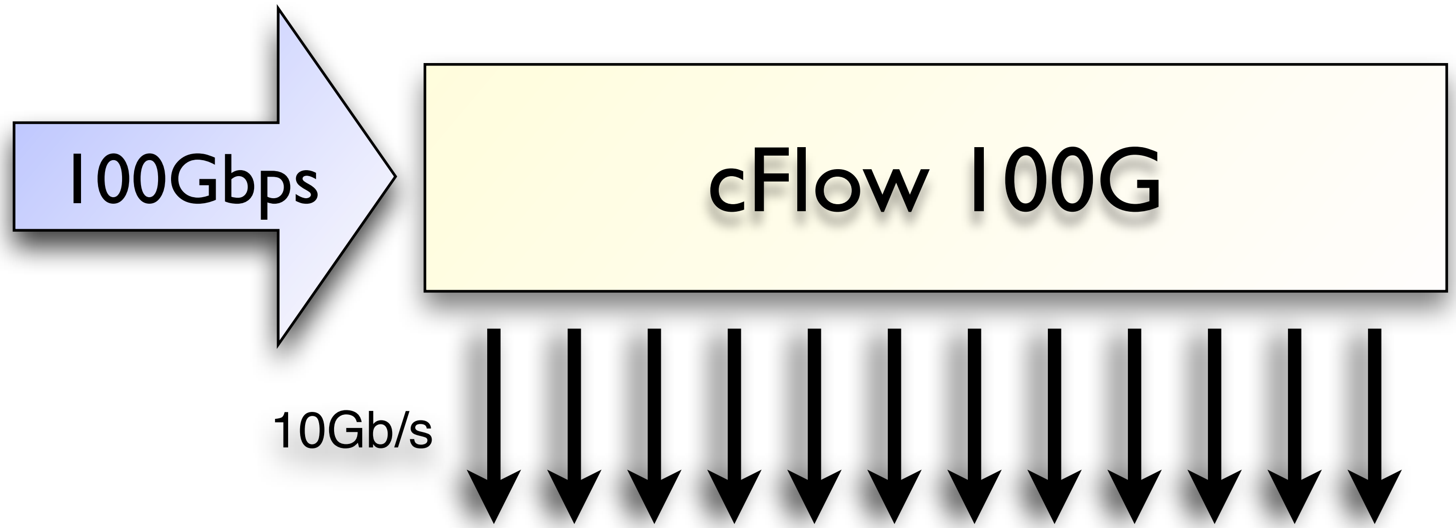

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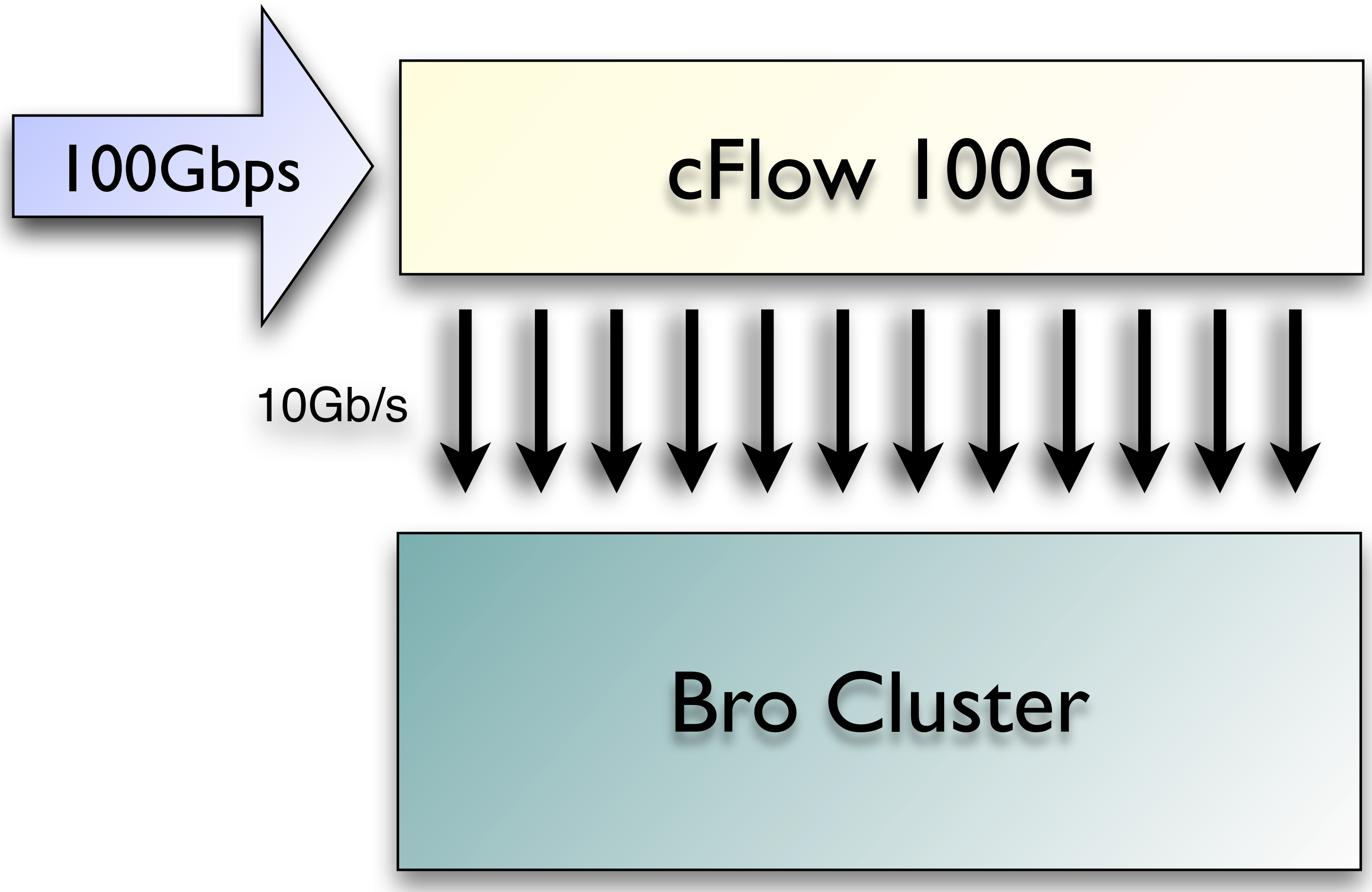

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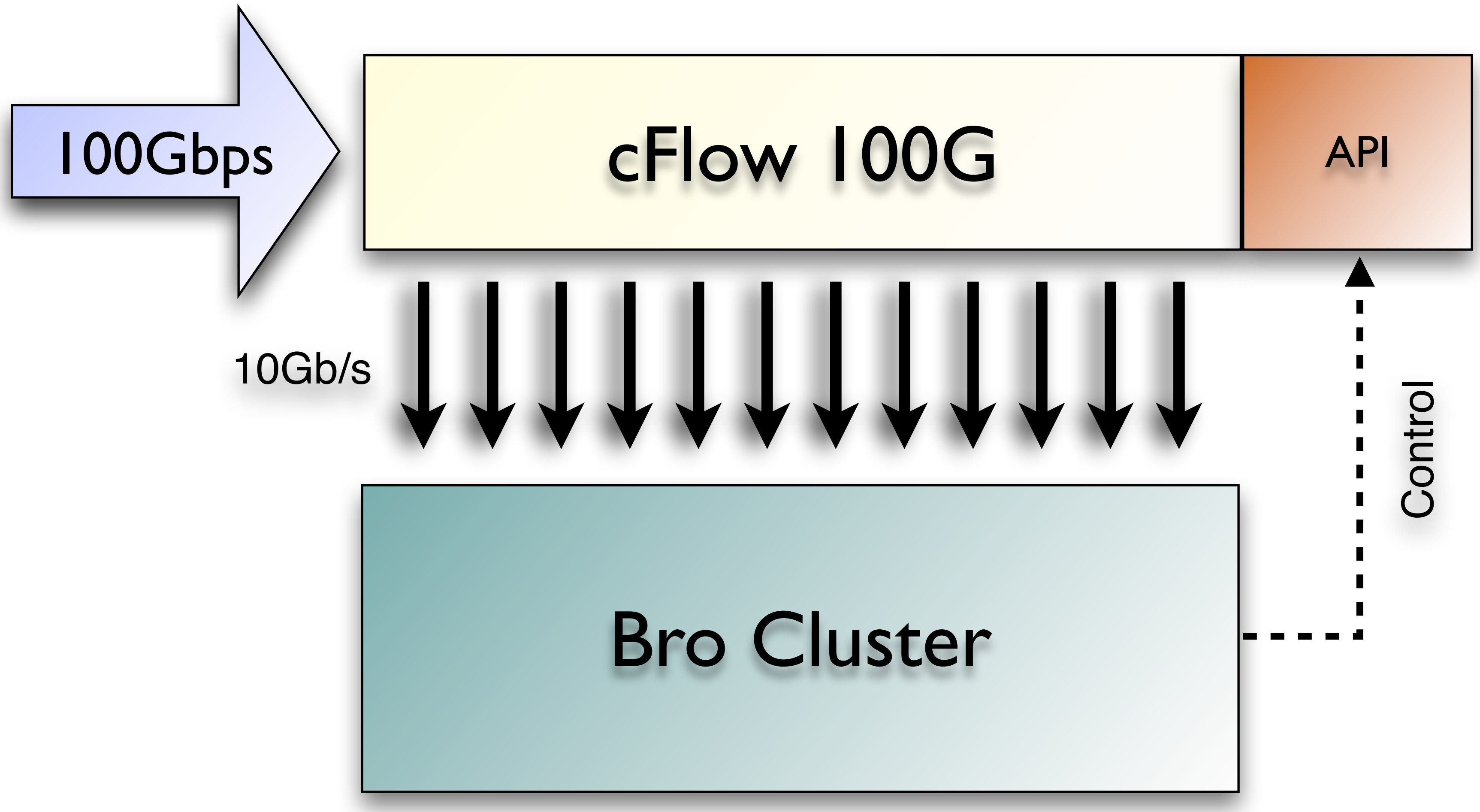

Concurrent Analysis

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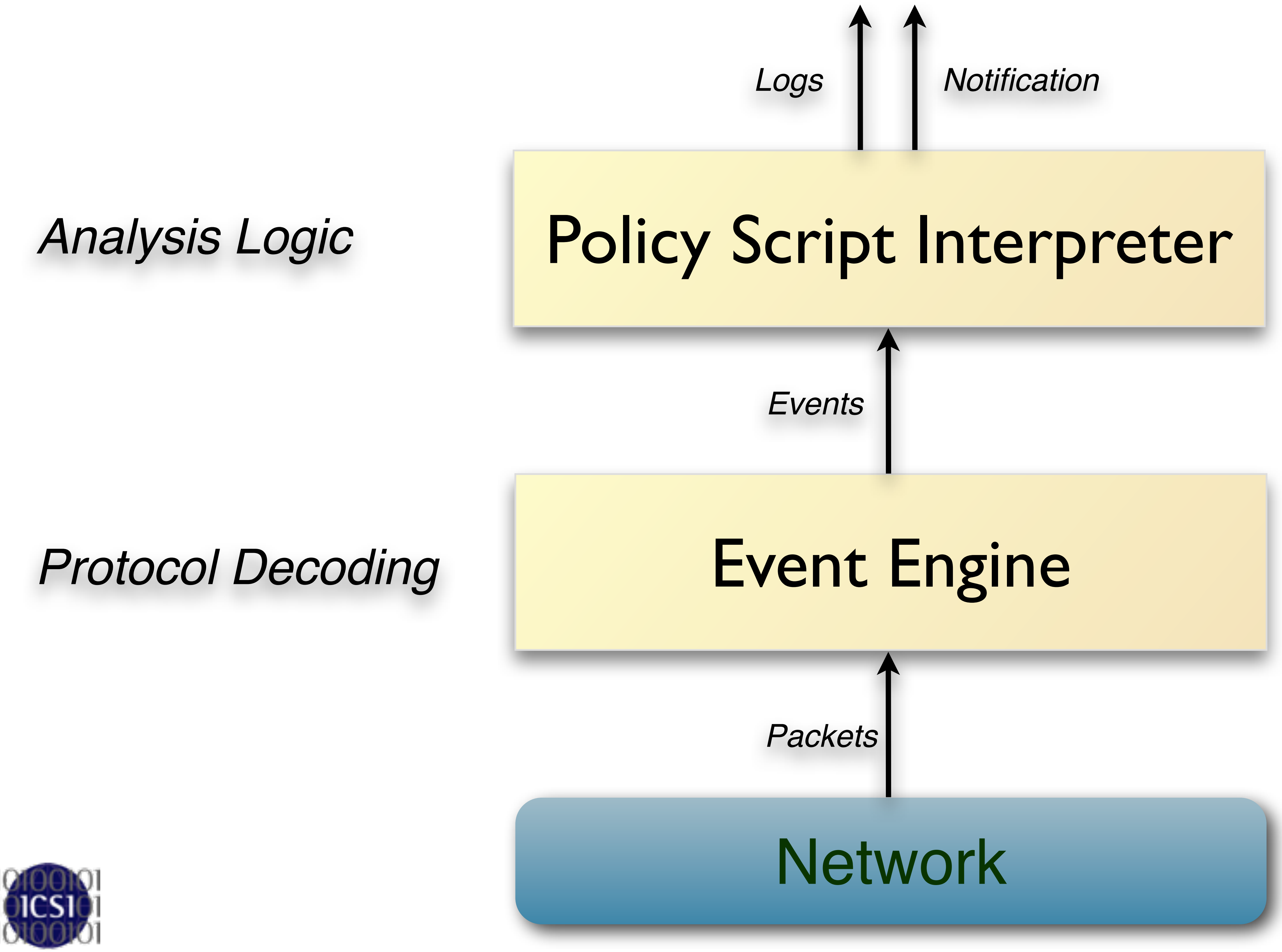
For some IDS, that's not so hard.

For others, it is ...

Architecture



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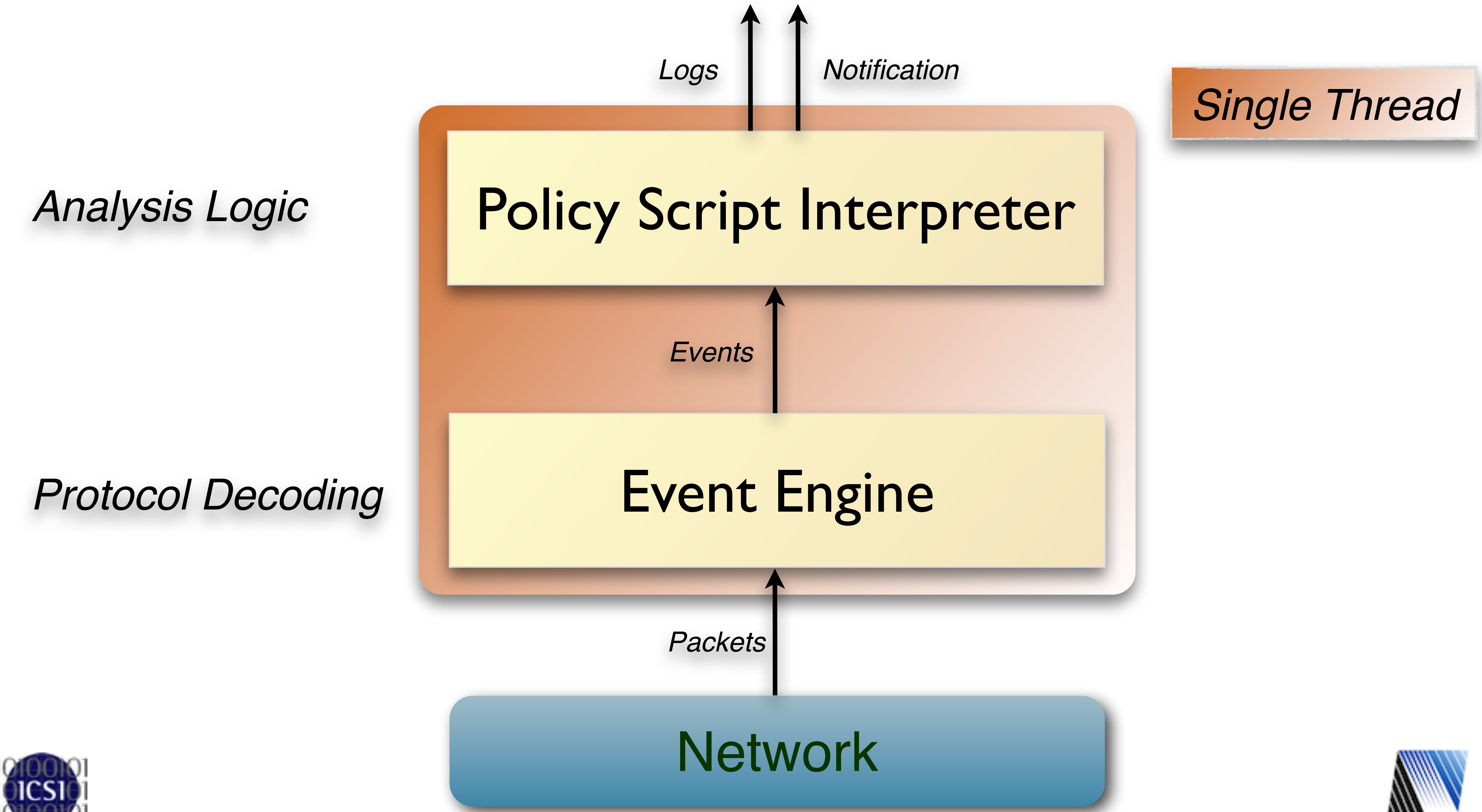
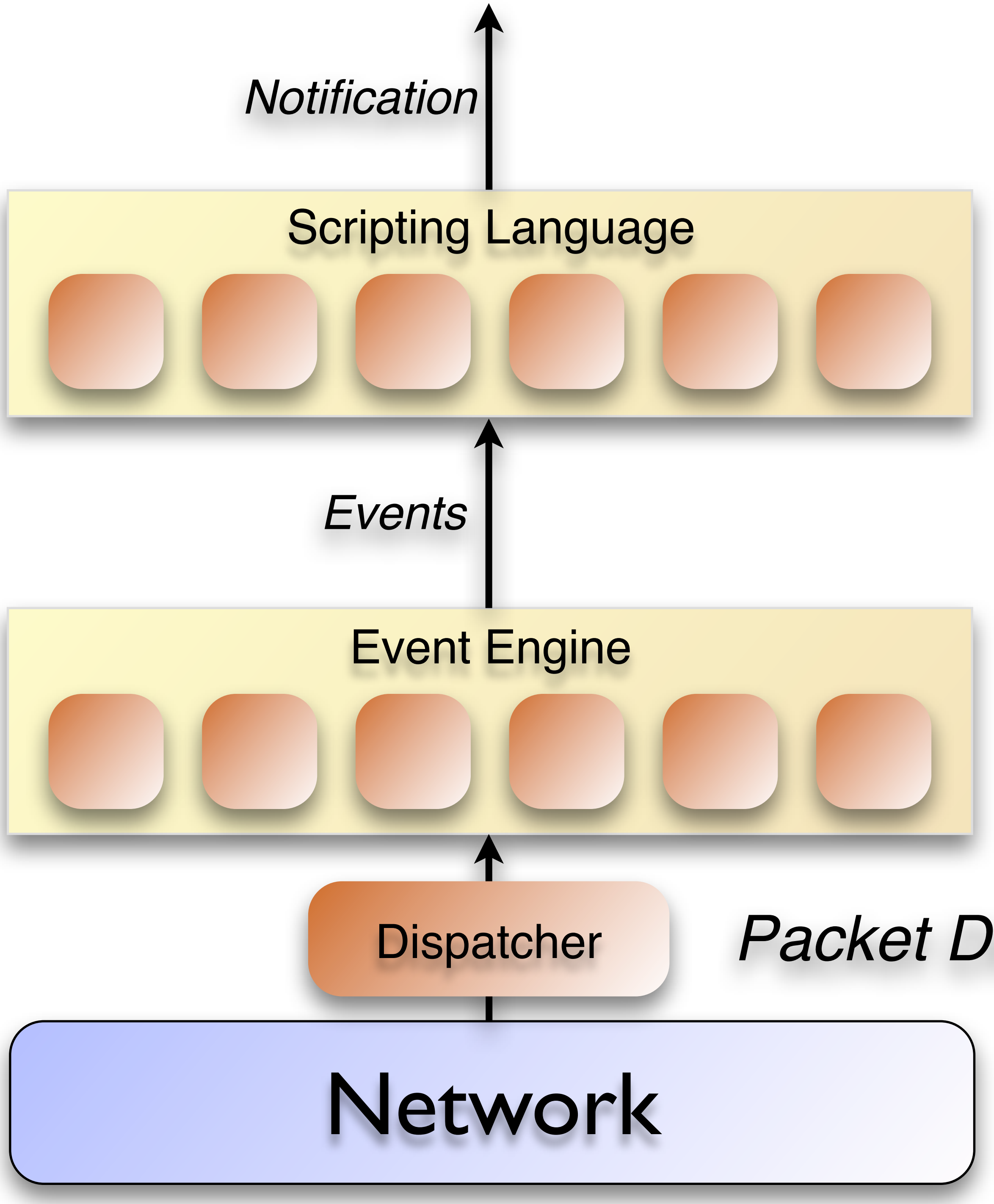


Architecture

Detection Logic

Packet Analysis

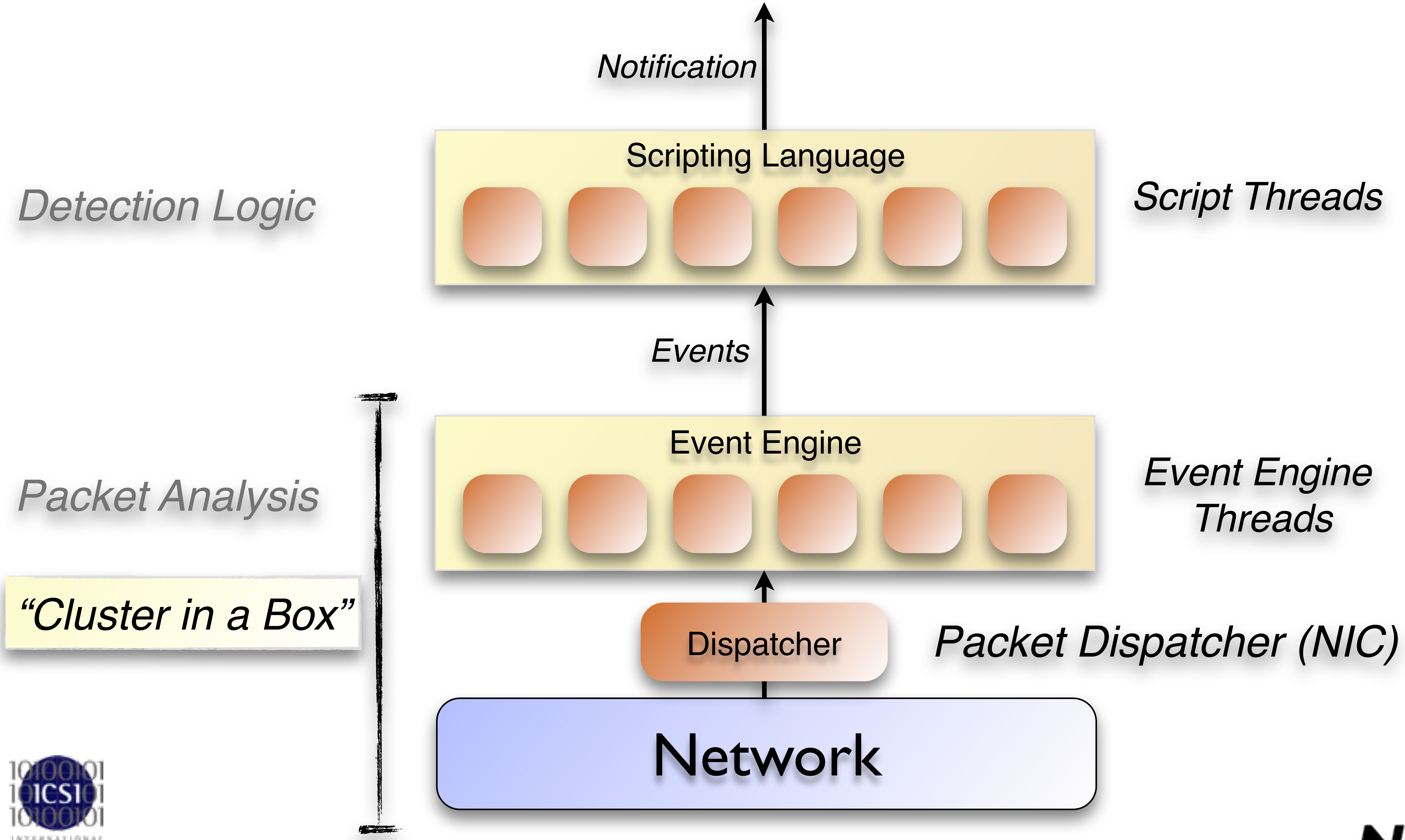


Script Threads

Event Engine Threads

Packet Dispatcher (NIC)

Architecture



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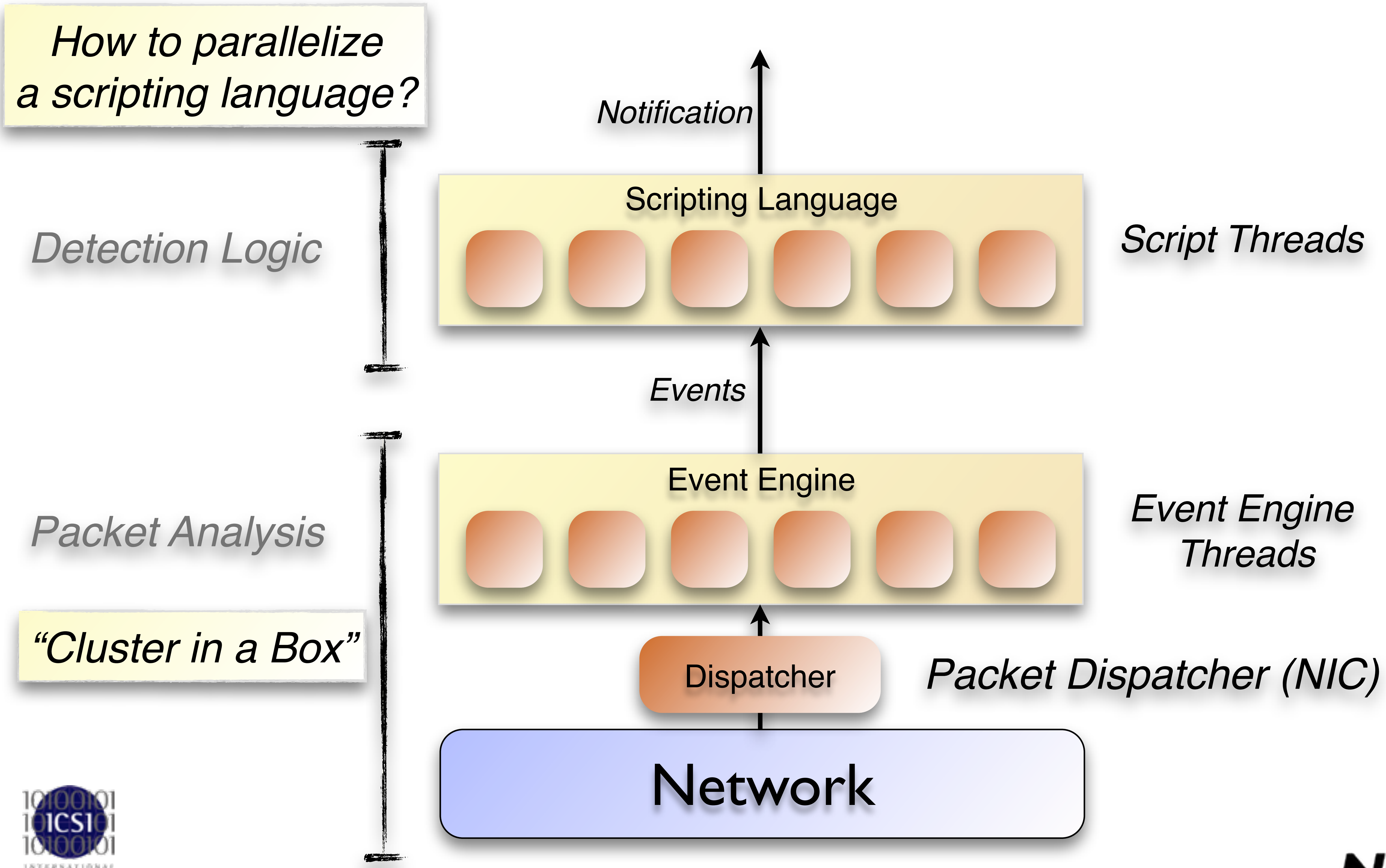

HILTI Abstract Machine

A **H**igh-Level **I**ntermediary **L**anguage for **T**raffic **I**nspection

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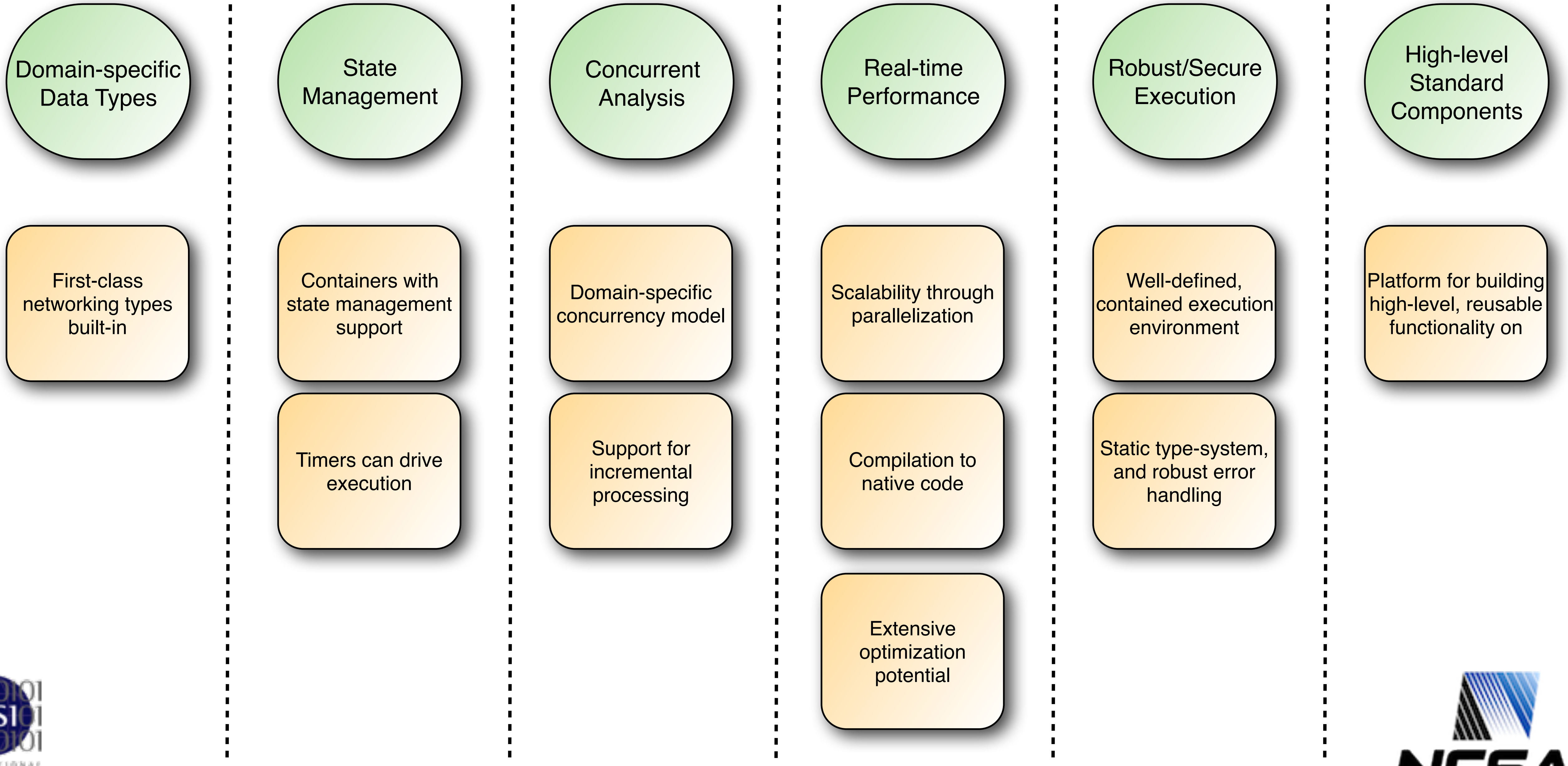

Domain-specific Data Types	State Management	Concurrent Analysis	Real-time Performance	Robust/Secure Execution	High-level Standard Components
First-class networking types built-in	Containers with state management support	Domain-specific concurrency model	Scalability through parallelization	Well-defined, contained execution environment	Platform for building high-level, reusable functionality on
	Timers can drive execution	Support for incremental processing	Compilation to native code	Static type-system, and robust error handling	
			Extensive optimization potential		

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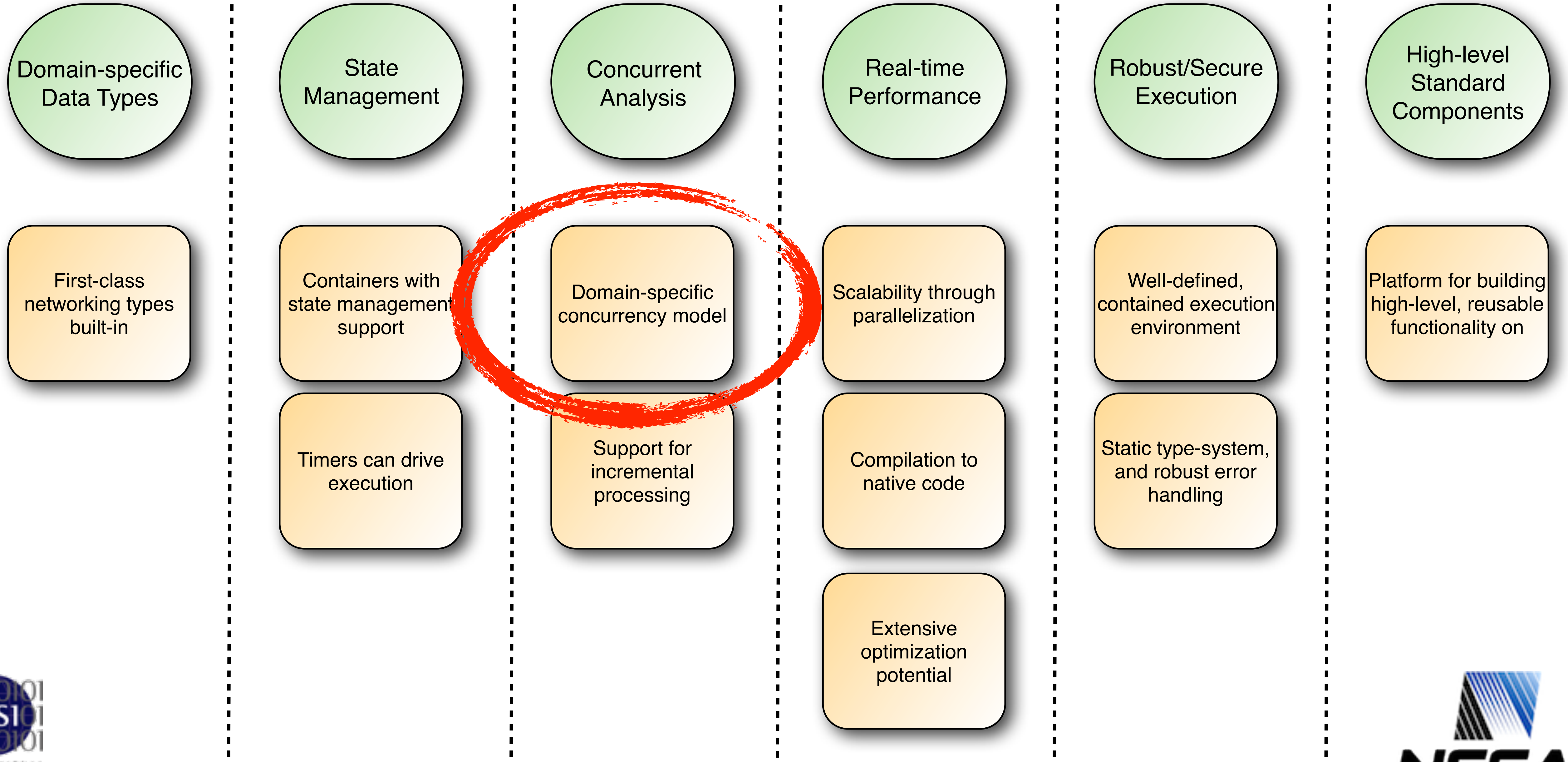

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Workshop Wrap Up

Thanks for coming to the
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Thanks to NSF for subsidizing workshop attendance.

Building a Community

http://www.bro-ids.org

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Open development model.

All code in public git repositories.
Extensive use of issue tracker.

`http://www.bro-ids.org`

Helping the Bro Project

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Tell us!

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Tell others!

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Any ideas? Let us know.

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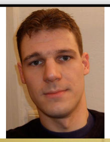
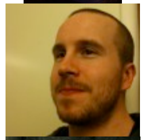
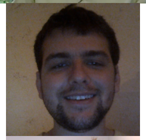
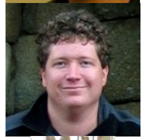
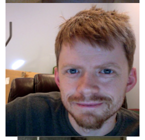
Vern Paxson		Gregor Maier	
Jim Barlow		Jonathan Siwek	
Gilbert Clark		Adam Slagell	
Seth Hall		Robin Sommer	
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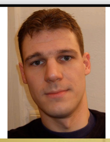
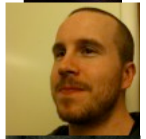
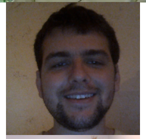
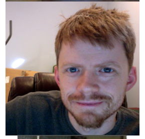
Vern Paxson		Gregor Maier	
Jim Barlow		Jonathan Siwek	
Gilbert Clark		Adam Slagell	
Seth Hall		Robin Sommer	
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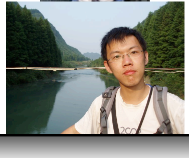
Hui Lin		Matthias Vallentin	

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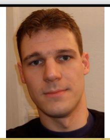
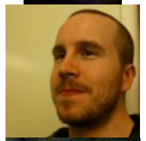
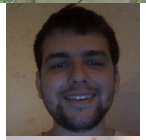
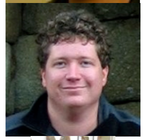
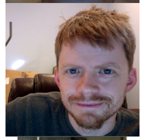
Vern Paxson		Gregor Maier	
Jim Barlow		Jonathan Siwek	
Gilbert Clark		Adam Slagell	
Seth Hall		Robin Sommer	
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Bro Tutorial at ACSAC 2011
One day version of this workshop.

December 5–9, 2011 | Buena Vista Palace Hotel & Spa | Orlando, Florida, USA