Behavior Based Approach to Network Traffic Analysis

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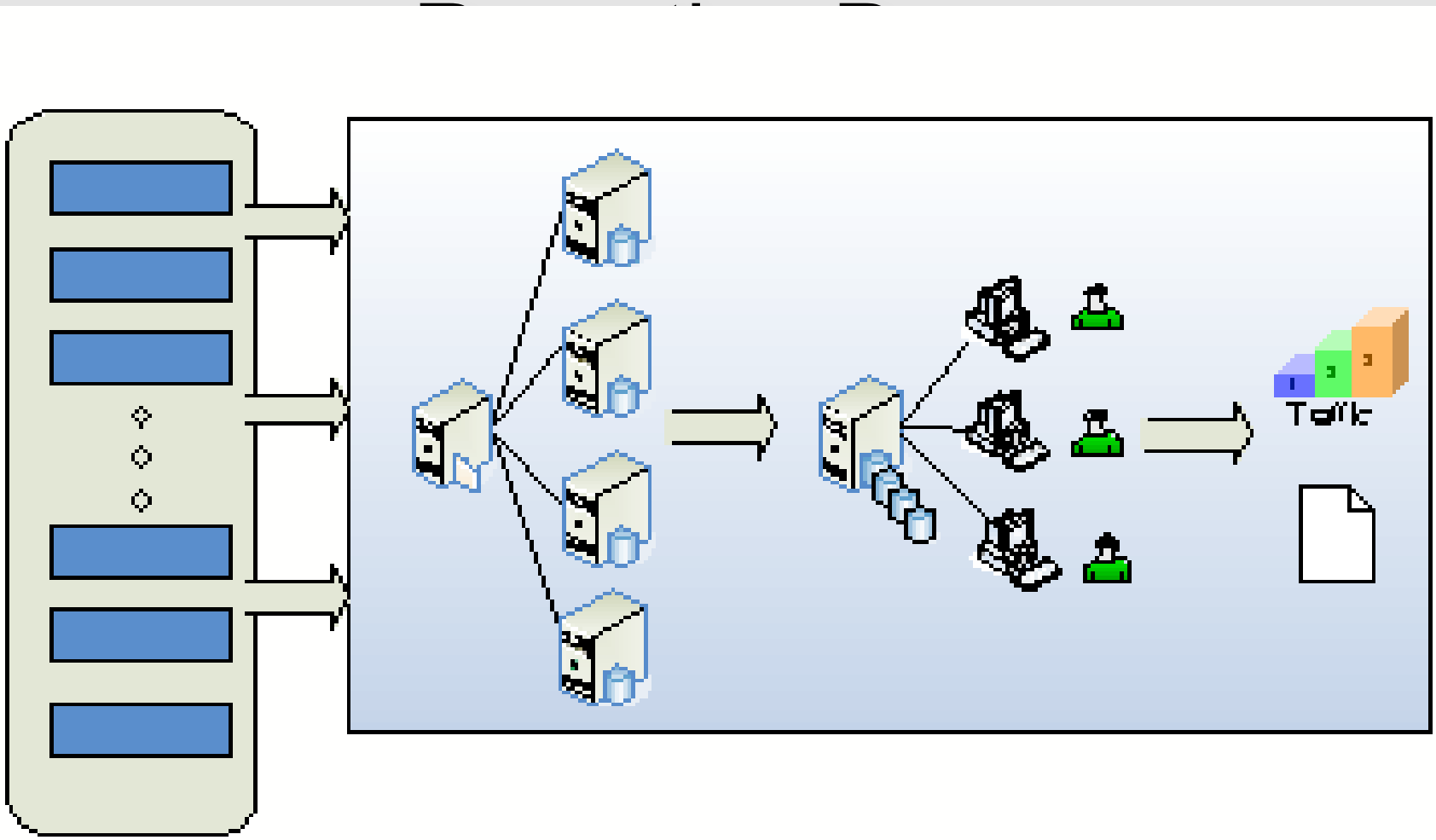
Issues/Challenges

- Data volume (noisy/highly dimensional)
- Watch-lists
- Data interpretation – significance
- Monitoring threats

Data Collation, Processing, Analysis, and



Advancing the Art

- Situation awareness
  - Recognize nefarious activities before reported
  - Focusing analysts on particular IP's or organizations
- Novel analysis
  - Identifying exploits before well known

Dynamic Watch-lists

- External hosts
  - Those IP addresses that pose a threat against the enterprise networks
- Vulnerable hosts
  - Those internal IP address that are targets

Methods

- Weighted values associated with behavior
- Tracking over time
- Dynamic list placement
- Behavior profiles
- Multiple sources of input

External Hosts

- Actions
  - Reconnaissance
  - Exploits
- Intent
  - Collection
  - Compromise
  - Recruitment
- Methods
  - Stealth
  - Collaboration

Vulnerable Hosts

- Interacting with external hosts
- Sending unsolicited messages
- High level of chatter
- New services running

Factors

- Intent
- Temporal/frequency
- Sophistication
- Cooperation
- Enclave

Adaptability

- Dynamic weighting factors
- Methods
- Techniques
- Code

Future Efforts

- Architecture to work on raw data
  - Near real-time situation awareness
  - Parallelism of queries
- Sophisticated detection methods
- Communities

Questions

- Contacts

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