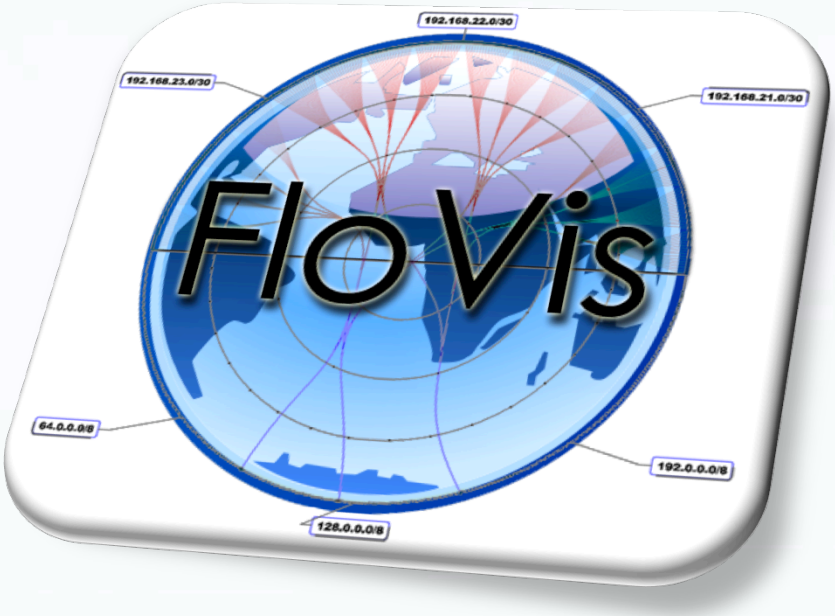


Security Visualization with FloVis

Teryl Taylor, Diana Paterson,
Joel Glanfield, Stephen Brooks,
Carrie Gates and John McHugh

Agenda

- Need
- Approach - FloVis Framework
- Activity Plot
- FlowBundle
- NetBytes Viewer
- Conclusions and Future Work

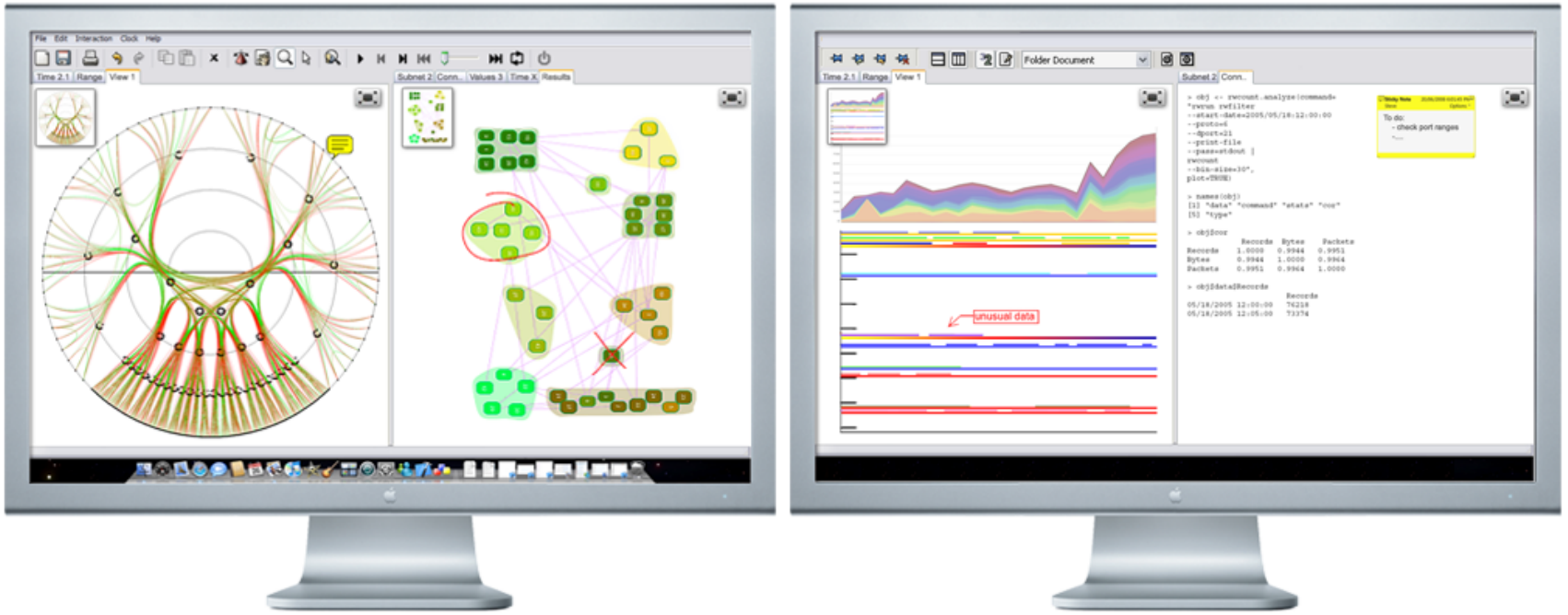
Need

- Multiple organizations being monitored
- Flow level data only – highly aggregated
- Over 1 *billion* flows per day
- > 16 million IP addresses
- Too few analysts
- No time for training

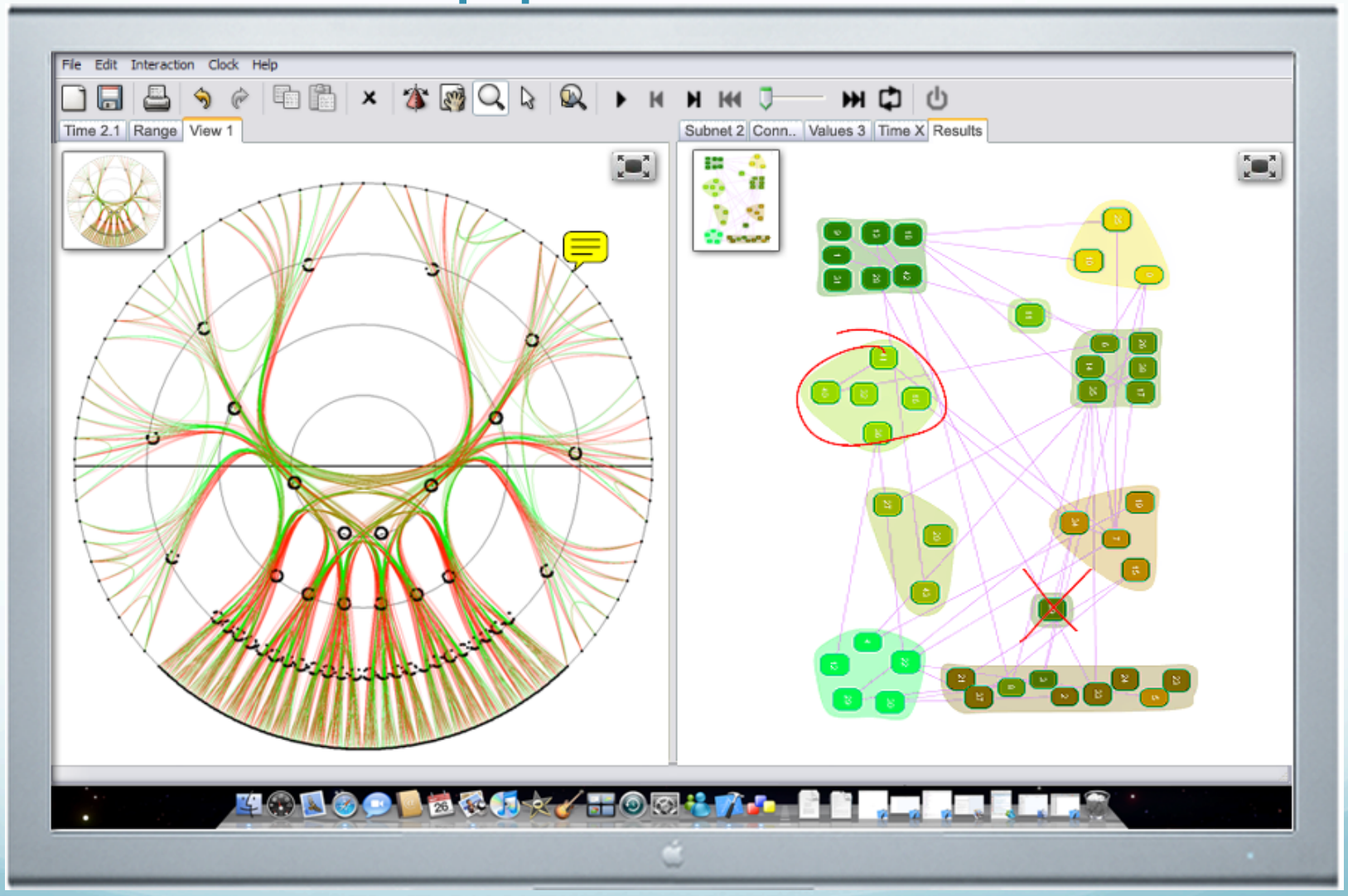
* Looking for the monkey in the boat.

Approach

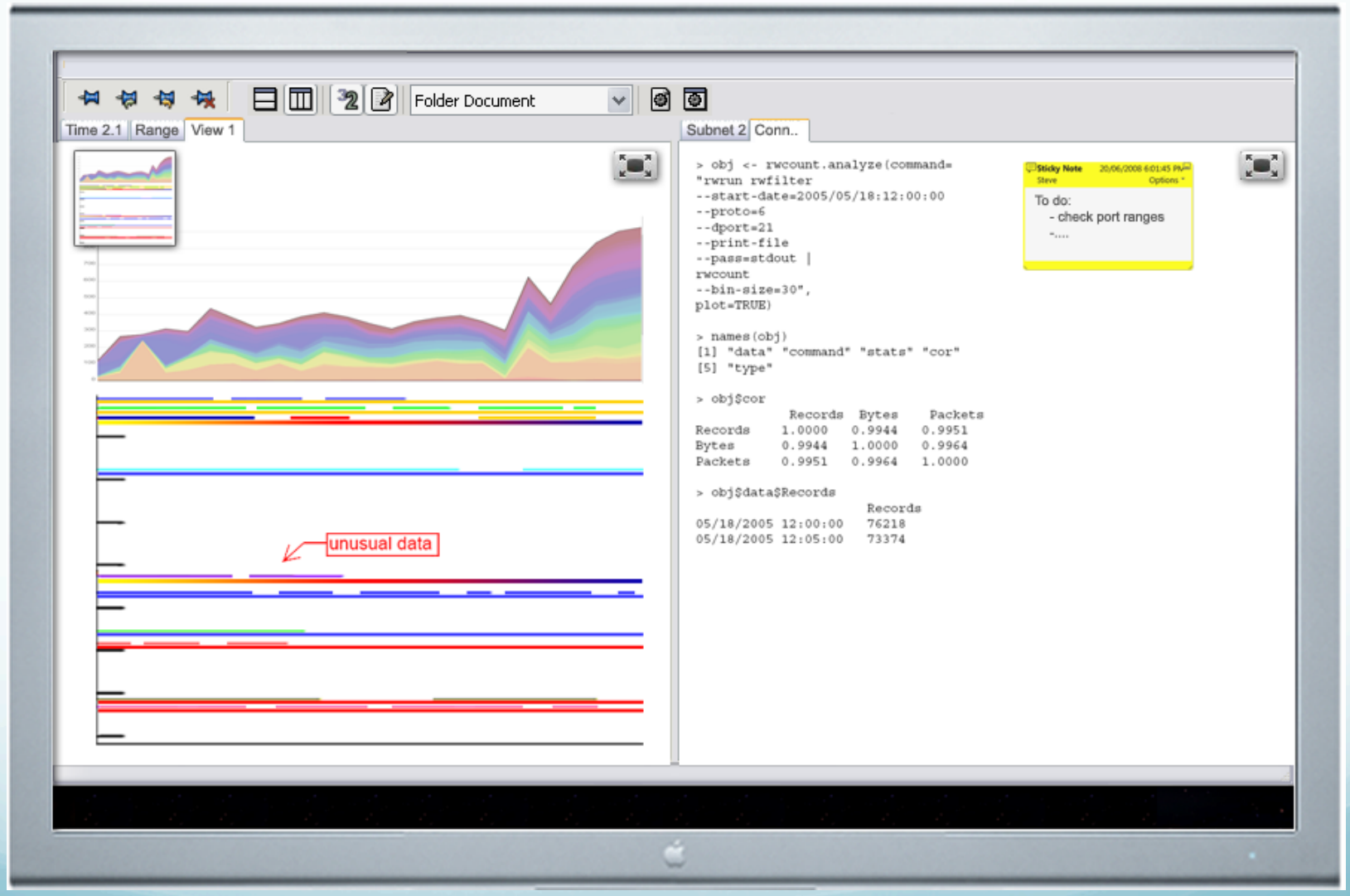
- Take a *visual analytics* approach to investigating data



Approach



Approach



Approach

- Create a visualization suite:
  - to help identify intrusive patterns
  - to obtain a general understanding of the network
- Develop a generic framework to support multiple visualizations and the ability to easily add more
- Investigate and apply new visualization techniques to deal with typical problems of current techniques
- Closer integration (but not dependent) with the SiLK tool suite

System Requirements

- Use SiLK data
  - So, unidirectional flow data only
- Scalability – 1.5 *billion* flows per day!
- Ability to detect patterns that are *not* detected currently through other means
  - E.g., NOT scans! ☺

FloVis Framework