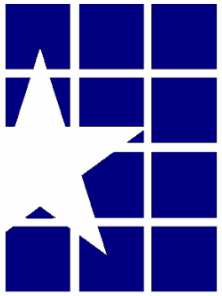

ATC-NY

Architecture Technology Corporation

Empirical Privilege Profiling in an Application Community

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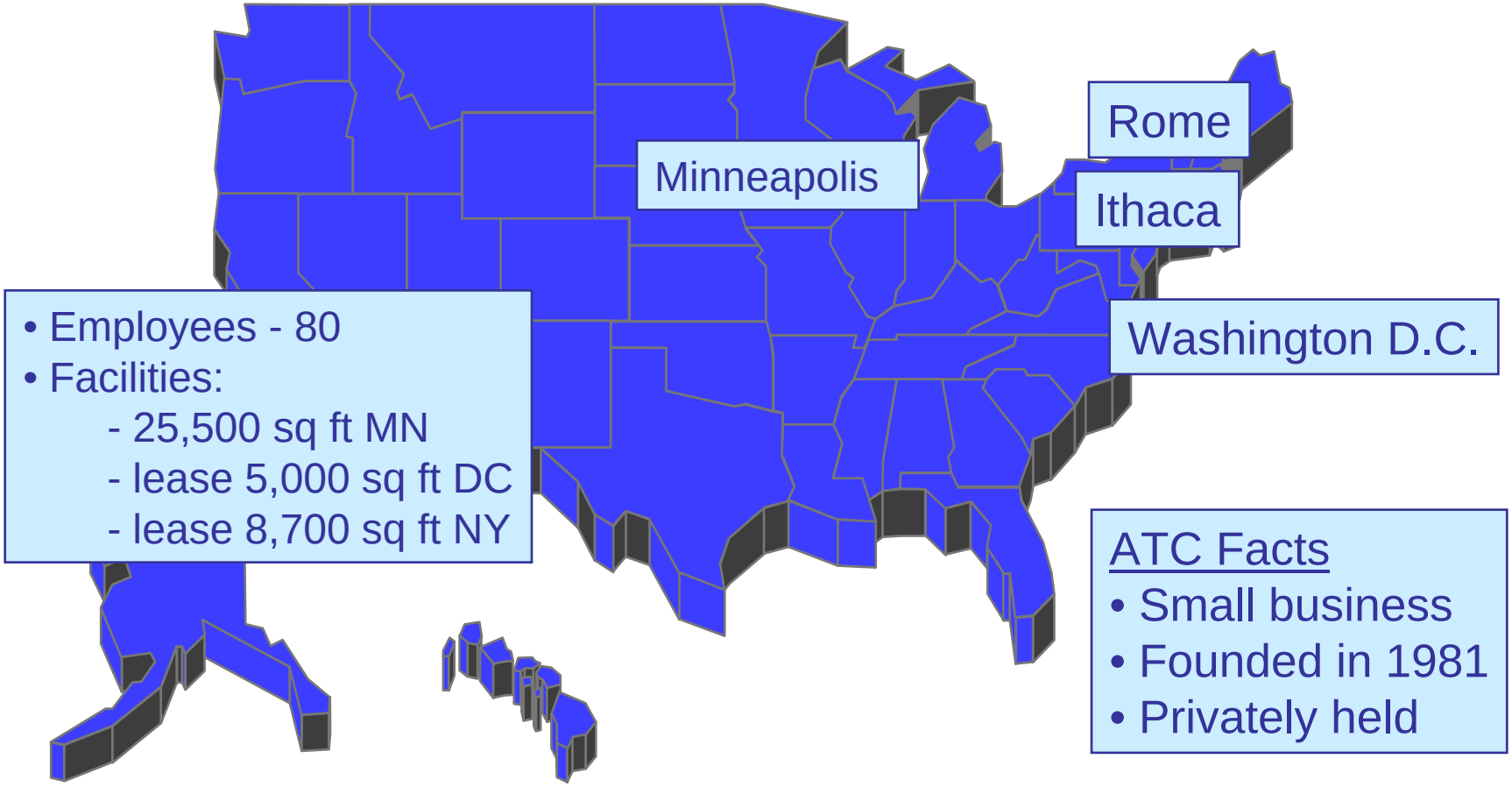
ATC-NY

- A wholly-owned subsidiary of Architecture Technology Corporation (ATC)
- ATC specializes in distributed computing and network technologies
  - Research and development
  - Engineering services and consulting
  - Network monitoring products: Triticom subsidiary
- ATC-NY
  - 20+ years of experience in advanced R&D and products
  - Specializing in information security, information management, and reliable computing
  - Strong history of collaboration with universities and companies, including Cornell, Dartmouth, General Dynamics, Boeing, Lockheed Martin, and others

ATC operations



Applicable ATC-NY capabilities

- Security research and development, including
  - Anomaly-based intrusion detection
  - Profiling techniques
  - “Neighborhood watch” attack monitors
- Peer-to-peer applications
- Empirical privilege profiling

Empirical privilege profiling

- Concept: Characterize the privileges a program needs in order to run
  - Find out what resources it actually uses and how it uses them
  - Treat program as a “black box” (no source code)
  - Abstract away from particulars of individual hosts and users
- Empirical profiling fits in well with Application Communities
  - Communities can build profiles quickly through collaboration
  - Community members can all share the resulting profiles

Potential uses for privilege profiles

- Implement the Principle of Least Privilege
  - Privileged program installation: Find out what access control rights a privileged program really needs
  - Program development: Find out if the program is exercising more privilege than you intend
- Detect intrusions
  - Anomalous use of privilege
- Detect insider misuse
- Ensure mobile code safety
  - User of code can check that it stays within profile

Empirical privilege profiling at ATC-NY

- ATC-NY has developed an approach to building abstract privilege profiles based on data collected at collaborating hosts
- We have built automatic correlation software to implement the approach
- We have validated the approach with an experiment
  - Created a small Application Community to collect resource use data for a small application
  - Correlated data collected at multiple hosts and produced a privilege profile for the application
  - Shown that the profile is at an appropriate level of abstraction
- A paper on this work will be presented at the New Security Paradigms Workshop next month

Building and using program privilege profiles in Application Communities

Profiles of the resource needs of applications can contribute valuable input to security tools for Application Communities

Correlation techniques developed at ATC-NY automatically create widely applicable profiles that are independent of user-, host-, or site-specific information

Application Communities are ideally suited to both build and use such profiles