# Managing Trust with Tokens and Capabilities

**Miron Livny**
UW-Madison Vilas Research Professor
John P. Morgridge Professor of Computer Science
PATh Principal Investigator

CHTC Center For High Throughput Computing

HTCondor Software Suite

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AI Overview

Trust, in its most basic form, is the belief that someone or something is reliable, good, honest, and effective. It involves a willingness to be vulnerable to another party, trusting that they will act in ways that benefit you. This concept can apply to individuals, groups, or even institutions.

Here's a more detailed breakdown:

1. Trust as a Belief: Trust is fundamentally a belief in the positive attributes of another person or thing. This belief can be based on past experiences, reputation, or simply a general inclination to see the best in others.

# Is Trust a mutual relationship?

AI Overview

Yes, trust relationships are generally considered mutual, meaning both parties involved should feel a sense of confidence and reliance in each other. This mutual trust is built through consistent actions, open communication, and a willingness to be vulnerable and honest.

I am a Cat
My
Passport #
is 17

Autherization Entity

Identifier Entity

Client

Server

My name is Roo

My name is Soo

Server receives a request “send file Foo back to the requesting client”

How does the server trust the request?

1. Request presents an “Identifier”
2. Request presents an “Identifier Token”
3. Request presents a “Access Token”
4. Request presents a “Secrete”

I am a Cat
My
Passport #
is 17

Autherization Entity

Identifier Entity

Client

Copy of Foo

Give Me Foo

Server

My name is Roo

My name is Soo

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# For #1 server needs:

1. A proof from a trusted identifier entity that whoever (software) issued the request is associated with the provided Identifier
2. An Access Control List (ACL) from a trusted authorization entity
3. Understand the schema of the ACL

# For #1 Client needs:

1. Get an Identifier and a Secret (password) from the trusted identifier entity
2. Register Identifier with trusted authorization entity

## For #2 server needs:

1. To trust the Identifier and the Identifier entity that issued the identifier token.
2. An Access Control List (ACL) from a trusted authorization entity
3. Understand the schema of the ACL

## For #2 Client needs:

1. Register Identifier and obtain Identifier Token from trusted Identifier entity
2. Register Identifier with authorization entity

# For #3 server needs:

1. Trust that the token was issued by an authorization entity identified by the token
2. Trust the authorization entity that issued the token
3. Understand the schema of the token

# For #3 Client needs:

1. Obtain a token from the trusted authorization entity with the desired access permissions

# For #4 server needs:

1. To obtain from a trusted authorization entity a list of secrets and associated permissions
2. Understand the schema of the list

# For #4 Client needs:

1. To obtain a Secrete from trusted authorization entity

- When a Researcher places a job that reads Foo at the Access Point (AP) it entrusts the flie copy with the AP – namely the AP has full control over the copy of Foo and can hand it over to any client
- The AP is the client (via the EP) that requests the copy of Foo  from the server
- The server entrusts Foo with the AP – namely, must trust the AP as an authorization entity for Foo who can hand Foo over to any client

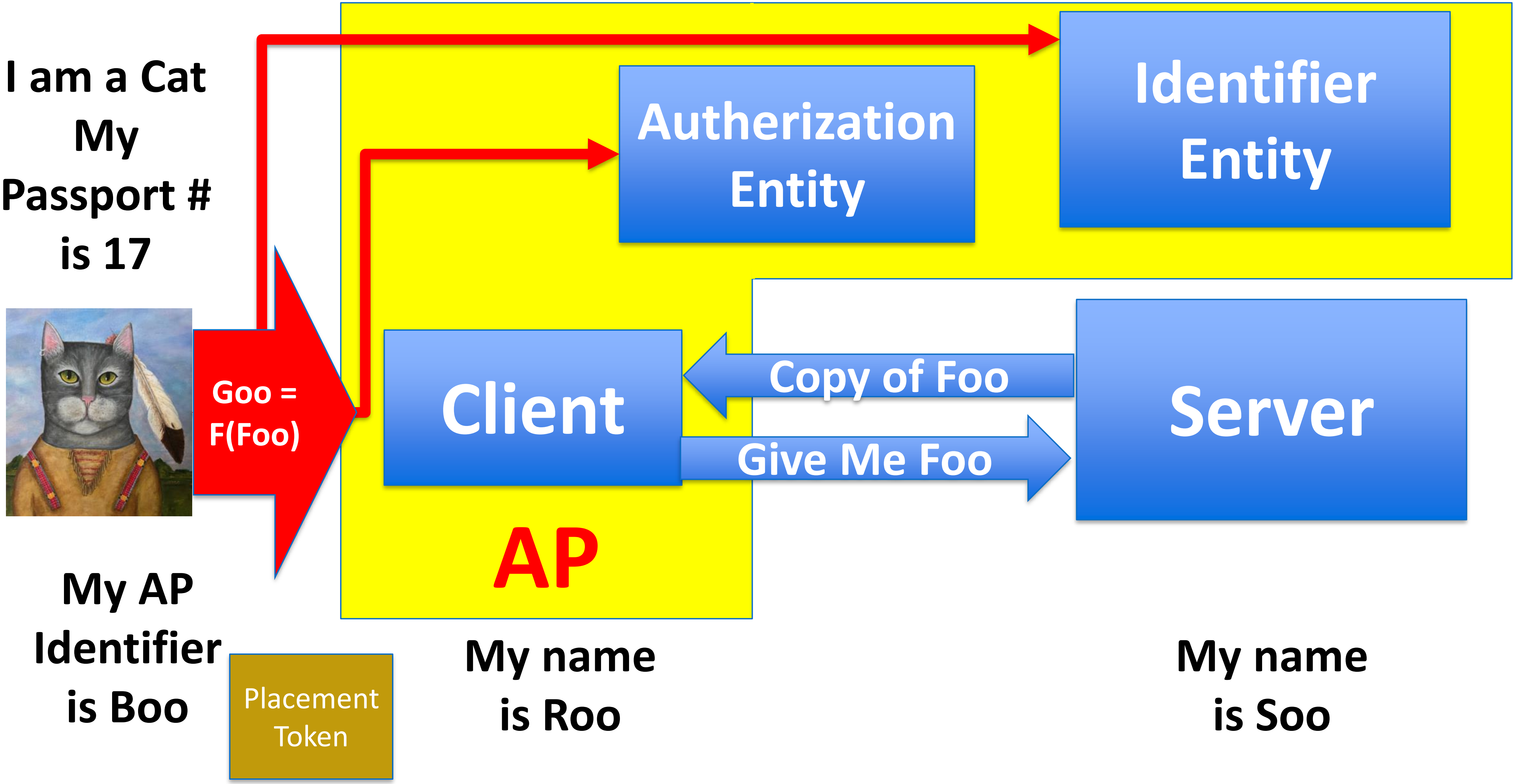
How does a researcher establish trust with the AP?

How does the AP associate a Job with a Researcher?

How does the Server establish trust with the AP?

# Prototyping Placement Tokens

- **To place a JobList at an AP the researcher needs to register with the AP**
  - If authorized, researcher is assigned an AP identifier.
  - AP registration does not mean an OS account on the server hosting the AP
- **To place a JobList at an AP the researcher needs a PlacementTokent for the AP**
  - If authorized, researcher is given an PlacementToken (capability, cookie)

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- **We are working on a prototype for the Placement Dameon (DP)**
  - Prototype includes a Web Server
  - Uses (external) campus Identifier Entity for “Passport # identifiers”
  - Uses an Access Control List provided by a Research Computing Facilitator
  - SchedD supports AP Identifiers for placement control and “Owner” identifiers