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Practical Approach To Blockchain Adoption

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Digitization of Assets

- Asset Examples

- Databases, Network connected Devices, Servers, etc
- Physical assets represented digitally in a data store

- Asset Ownership and Administration

- Someone who controls access or transfer of ownership
- Includes administrators and owners of assets
- Asset administrators and owners must have digital identities

- Asset Security

- Authentication: Establishing digital identities that own digital assets
- Authorization: Method for administering access or transferring ownership

Security Challenges

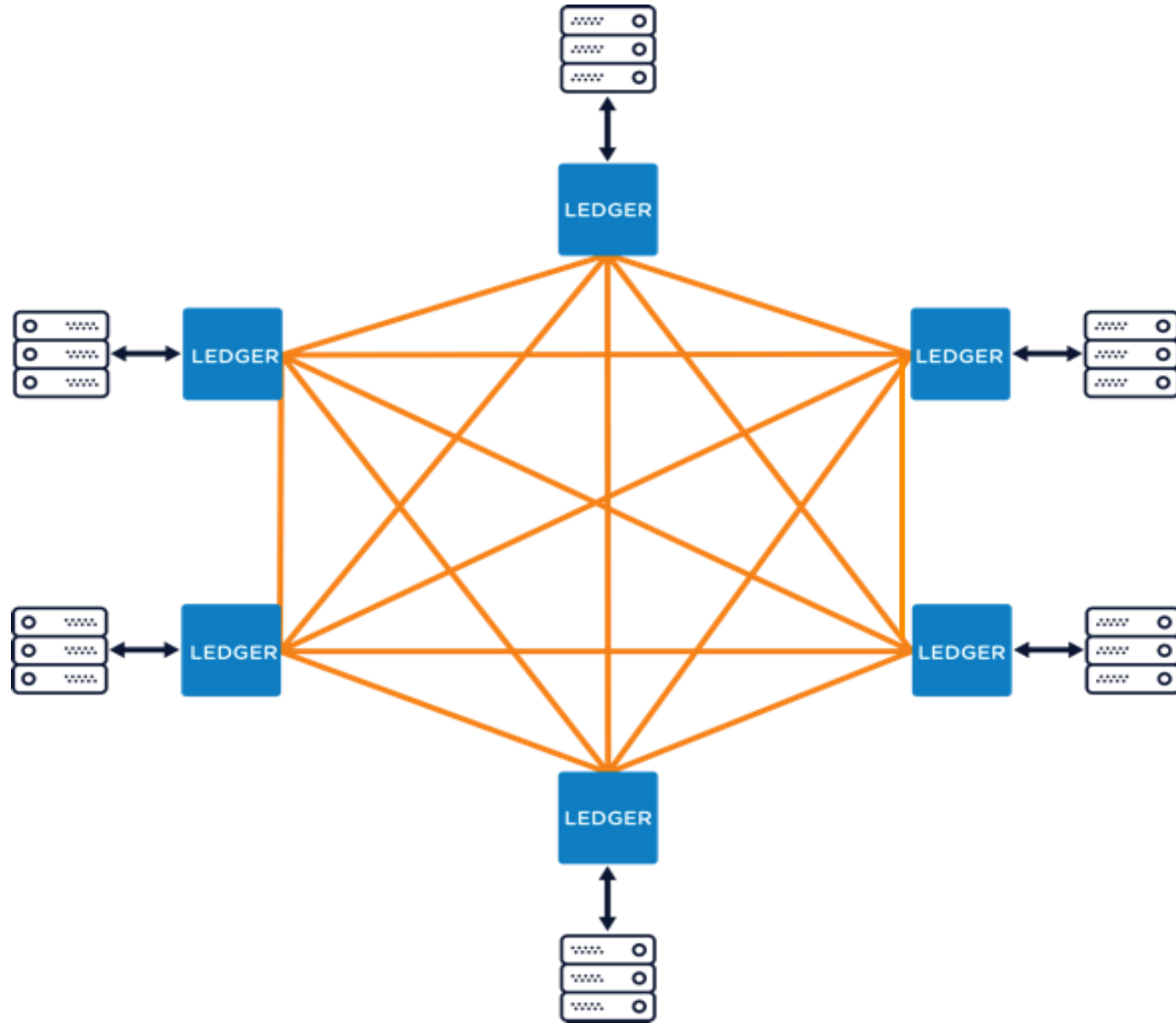
- Digital Identity Management

- Username/Passwords maintained across multiple systems
- Inconsistent password policies and administrative access policies
- Identity hacking and theft is a key method used by cyber criminals

- Data Security

- Data authentication: Verification of data sources
- Data integrity : Detecting, preventing altered or deleted data
- Unauthorized access: Data theft, privacy infringement
- Data Loss: Due to system failure or theft

How Does Blockchain Help



Data Immutability

No single point can alter data

Distributed Database

Data distributed to all nodes

Trust-less Transactions

Consensus or mining options

Eliminates trusted third party

Industry Adoption of Blockchain

- **Blockchain Tokens**
 - Security Tokens: represent a digital assets – typically a cryptocurrency
 - Utility Tokens: Used to pay for services offered on a network
- **Thousands of blockchain services to choose from**
 - The vast majority are speculative cryptocurrency projects
 - Most are hosted outside US due to SEC security issues
 - Industry concerns of the above slows widespread adoption.
- **Industry Response**
 - Develop “private” blockchain solutions
 - Requires costly software development efforts
 - Few (if any) successful industry specific blockchain networks have launched

Blockchain Realities

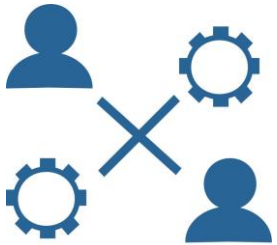
- Blockchain is not just software
 - It requires a functioning network with wide adoption
 - Low adoption enables single stakeholders to control transactions
 - This defeats the purpose of a trust-less blockchain transaction service
- Many enterprise class blockchain projects exist
 - However Industry is hesitant to commit to a single service
 - They tend to hedge their bets across multiple projects
 - This slows adoption of practical blockchain solutions for industry
- Private vs “on chain” data
 - Not all data belongs on a blockchain
 - Blockchain services do not offer private data solutions

Cognida Open Source Project



Blockchain Agnostic

- ◆ Blockchain used as distributed database
- ◆ Distributed digital identities and security policies
- ◆ Utilizes mature and existing blockchain projects



Digital Identity Management

- ◆ User and Machine Authentication
- ◆ Decentralized Directory Services



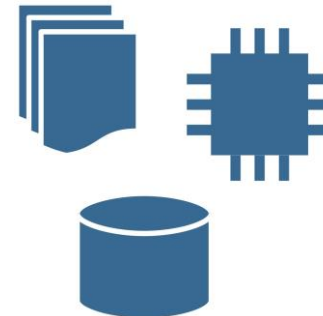
Security Policy Enforcement

- ◆ Roles, Groups, Policies, Rules
- ◆ Digital Asset Access



Information Services

- ◆ Data Integrity
- ◆ Access and system logs
- ◆ Private Data Sharing
- ◆ Secure Messaging



Digital Asset Management

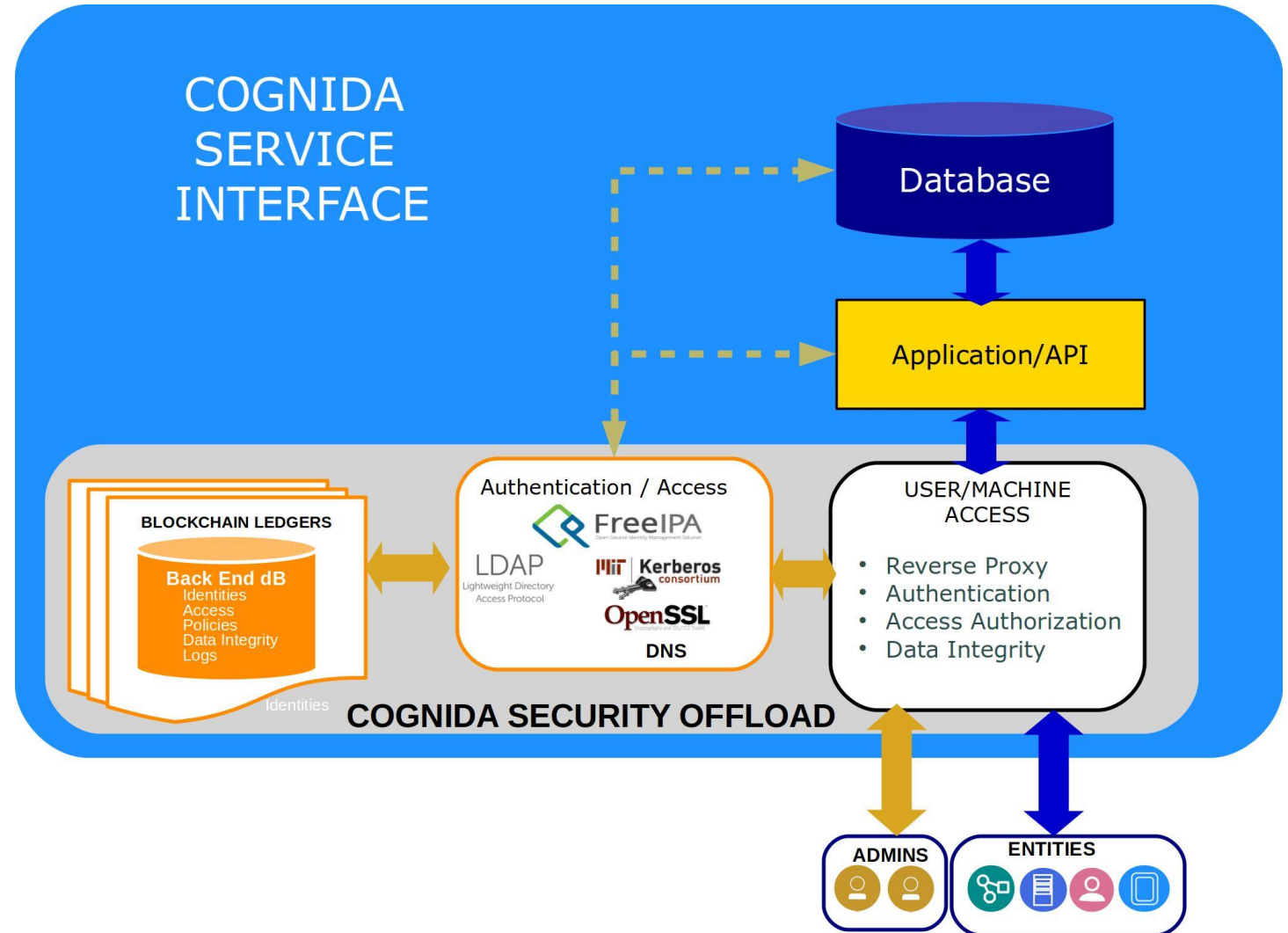
- ◆ Data
- ◆ Devices
- ◆ Sensitive Systems

Cognida Service Interfaces

Incorporates mature open source enterprise solutions like FreeIPA.

Utilizes blockchain as back end database to distribute and share digital identities and security policies

Integrates machine identities to facilitate machine to machine and machine to user access.



Conclusions

- Blockchain addresses multiple industry challenges
 - Securing distributed digital assets
 - Identity and access management
 - Digital asset ownership
- Adoption of existing blockchain solutions
 - Accelerates adoption and interaction with key blockchain services
 - Use common capabilities of existing blockchain services
 - Transition to blockchain enabled identity management solutions
 - Adopt a solutions enabling portability across multiple blockchain services
- Sensible approach to data management
 - Utilize blockchain to distributed shared data
 - Keep private data private, but utilize blockchain for security