Microsoft Blockchain Vision: Enterprise Smart Contracts, COCO Framework and AppBuilder

Razi Rais |Microsoft

@razibinrais

www.razibinrais.com

Who am I?

Senior Consultant | Enterprise Services - Microsoft
Blockchain & Identity

15+ Years | Architecture | Design | Development | Training

Web: www.razibinrais.com
Twitter: @razibinrais
LinkedIn: www.linkedin.com/in/razirais
Git: github.com/razi-rais

Agenda

- Enterprise Smart Contracts
- Microsoft COCO Framework
- Microsoft App Builder
- Q/A
- Resources

Blockchain in Enterprise| Pain Points

Throughput

- Public Ethereum network does ~20 transactions per second
- Visa credit card processing system averages ~2000 transactions per second

Latency

- Public Ethereum network transaction latency is around 10-20 seconds

Privacy

- By default transactions and smart contract state are not private

Microsoft COCO Framework

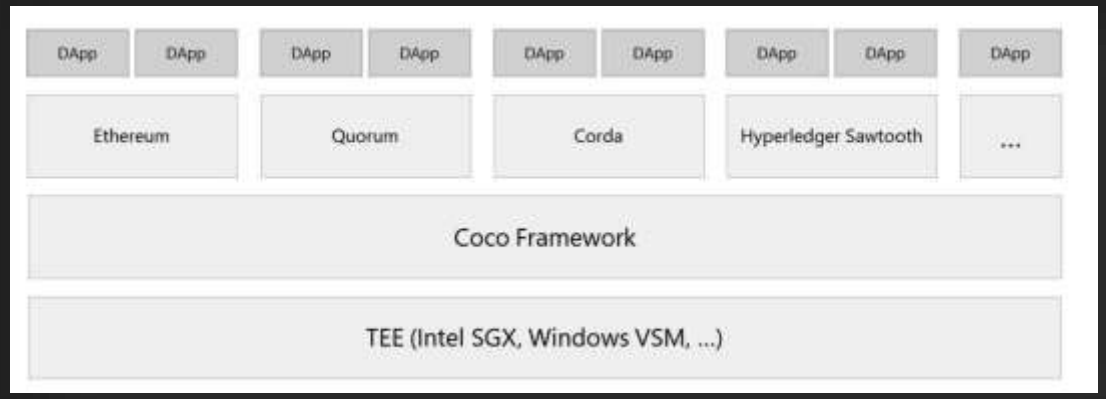
The COCO(Confidential Consortium) Framework

- Is an open-source system that enables high-scale, confidential blockchain networks that meet all key enterprise requirements
- Throughput and latency approaching database speeds
- Richer, more flexible, business-specific confidentiality models
- Reduced energy consumption

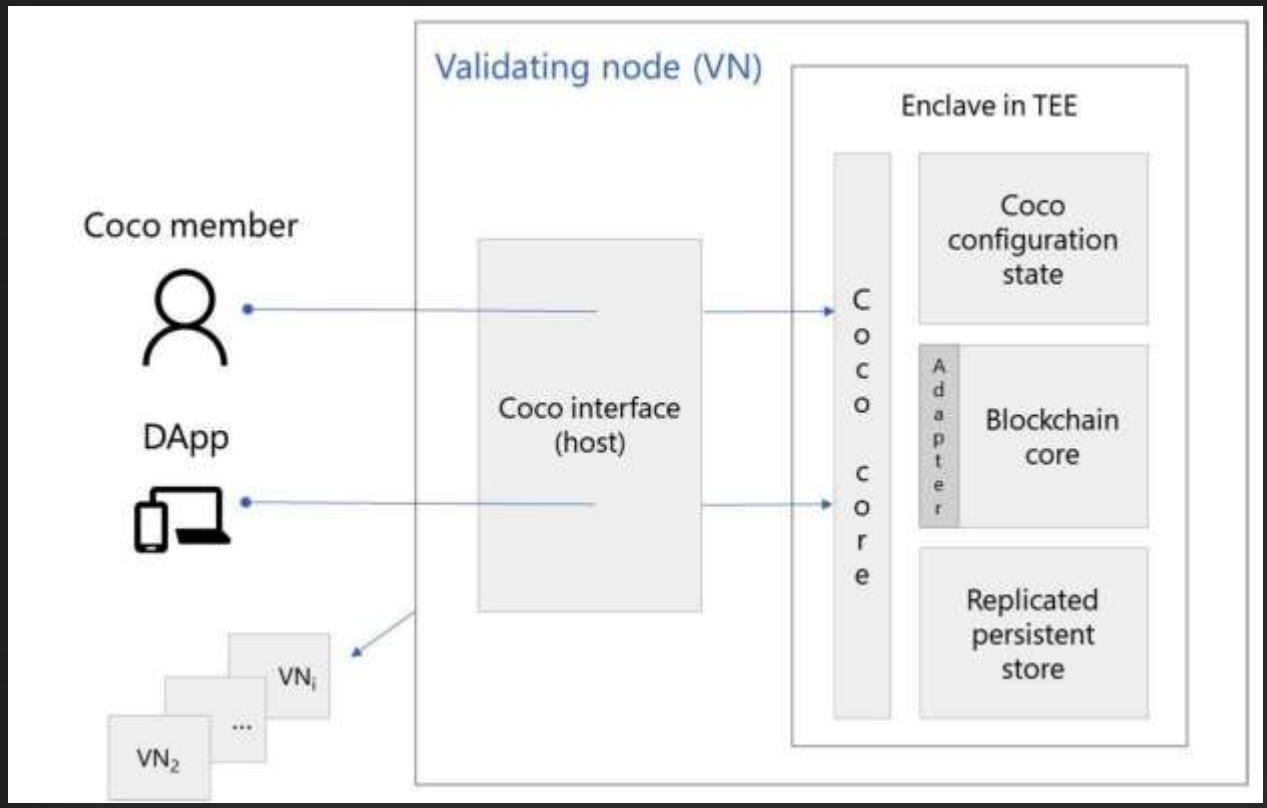
The COCO(Confidential Consortium) Framework is NOT

- Coco is not a standalone blockchain protocol
- Leverage existing blockchain protocols such as Ethereum, Quorum, Corda, or Hyperledger Sawtooth

Microsoft COCO Framework



High Level Overview



COCO Architecture

Whitepaper: https://github.com/Azure/coco-framework

Smart Contracts – Pain Points

Scaling: Smart Contracts runs on every node

- Scale out (add more nodes)? means more time not less for executing the smart contract since more nodes will run the smart contract
- Scale up (add more resources)? The slowest node will dictate the time and not the fastest node

No Knowledge of External World

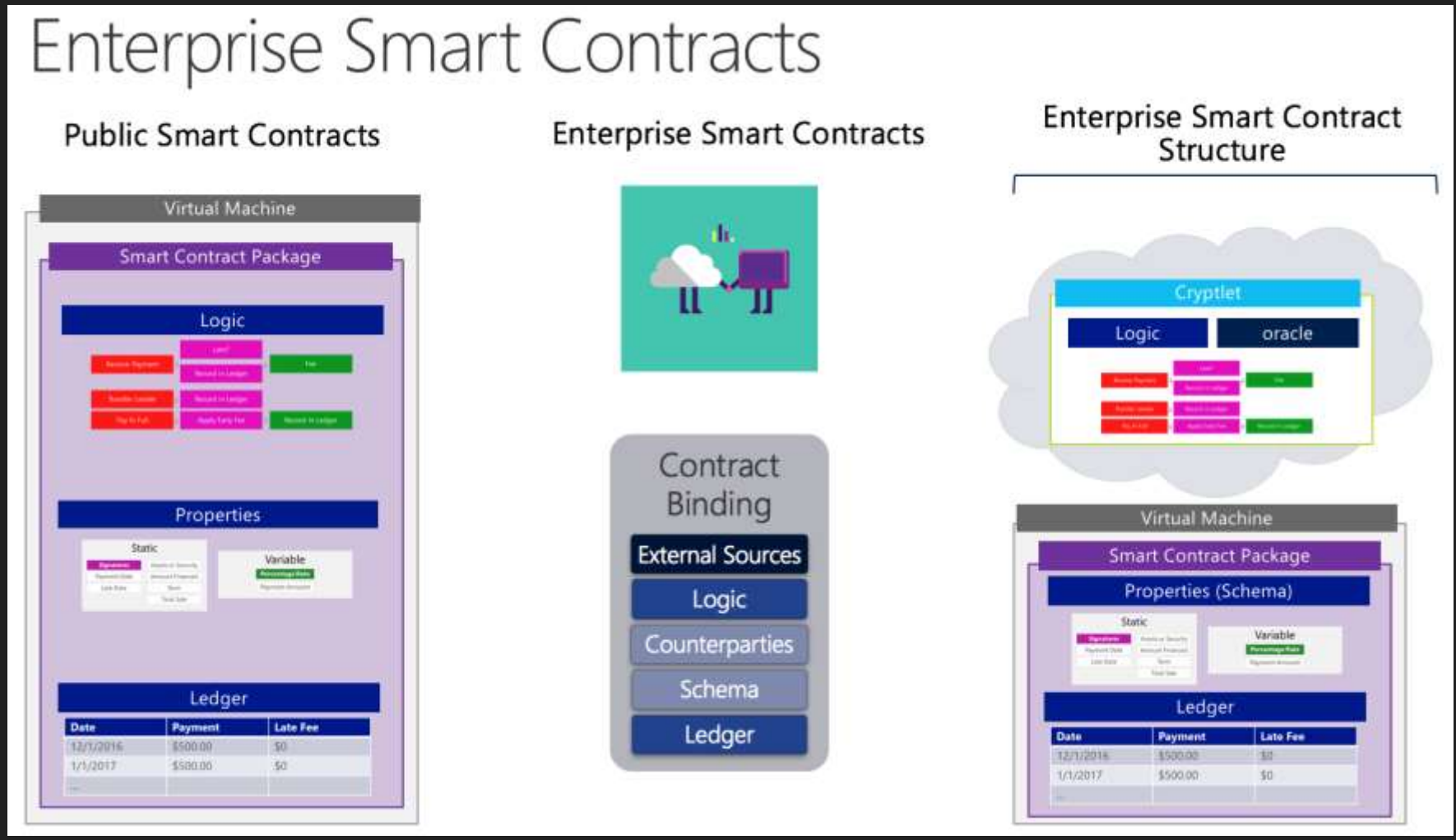
- Smart contracts runs without access to world outside blockchain
- Cannot call external system to pull/push data

Enterprise Smart Contracts | Separation of concerns

Logic (Off chain)

Schema
Ledger

Whitepaper - https://github.com/Azure/azure-blockchain-projects/blob/master/bletchley/EnterpriseSmartContracts.md

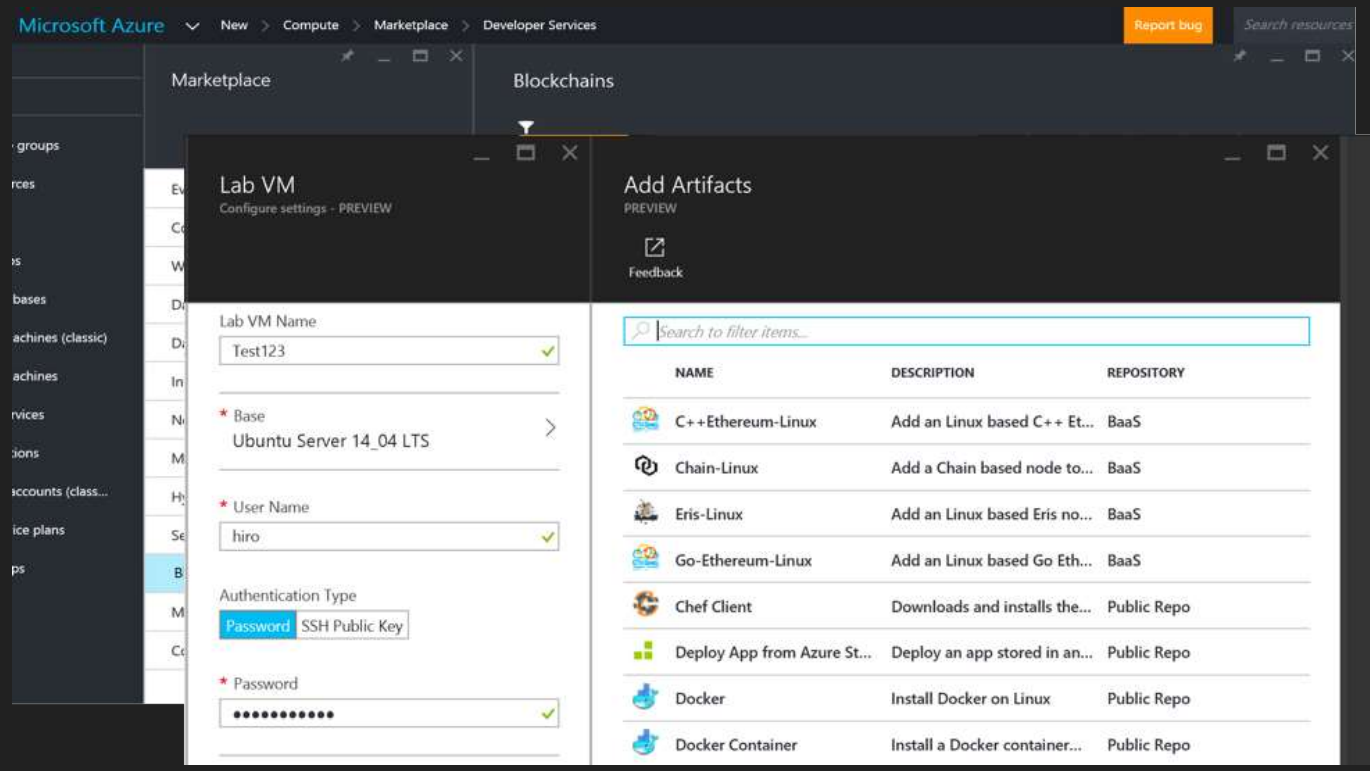


Microsoft App Builder

- Automatically creates end-to-end PoC (Proof of Concept) blockchain solutions based on smart contracts
- Creates the "scaffolding" for a blockchain application, which includes:
  - Responsive Web client
  - Gateway API for integration
  - Automatic off-chain storage, such as databases
  - Reporting
  - Support for advanced analytics
  - Image and document uploading, hashing, and association
  - Hashing and signing services
  - Interaction with identity (AAD) and Azure Key Vault services
- Provides code assets and an ARM template driven deployment for the application and blockchain network
- Provides a "pluggable" model intended to allow replacing or using multiple DLT(s), Storage, and SQL database technologies for core system capabilities
- Currently in private preview

Blockchain as a Service (BaaS)

- Microsoft's Ecosystem for Blockchain (distributed ledger, crypto applications) solutions development, test and deployment platform.
- Open platform to all partners with Blockchain frameworks and value added services
- A quick way to evaluate all the different platforms and help weed out the noise



Resources

- Free blockchain events | Join: https://www.meetup.com/msftcloud (Upcoming event on October 26th)
- COCO Framework: https://github.com/Azure/coco-framework
- Enterprise Smart Contract: https://github.com/Azure/azure-blockchain-projects/blob/master/bletchley/EnterpriseSmartContracts.md
- AppBuilder Private Preview Link: https://forms.office.com/Pages/ResponsePage.aspx?id=v4j5cvGGr0GRqy180BHbR2XqZl_fb1dDuSHz4y5eBDRUMUNLWTY0TEQ3R0gySDY2VUZWUEMyRjJIUy4u