

The background features a dark blue gradient with abstract geometric shapes. On the left, a large triangle is formed by a vertical orange line and a diagonal orange line. On the right, a large curved shape in shades of blue and orange sweeps across the frame. The text is positioned in the upper right area.

AWS re:Invent

NOV. 29 – DEC. 3, 2021 | LAS VEGAS, NV

BLC302

Building an Ethereum app with Amazon Managed Blockchain

Everton Fraga (he/him)

Sr. Blockchain Specialist Solutions Architect
Amazon Web Services

Meghan Gentry (she/her)

Solutions Architect
Amazon Web Services



Agenda

Introduction

Role of Solution Architects

From Blockchain to Ethereum

Amazon Managed Blockchain

The workshop

Introduction – Workshop Support



Luiz
Decaro



Daniel
Ness



Vishal
Lakhota



Brad
Rokosz

Introduction – Workshop Support



Glenn
Holland



Pablo
Nagy



Anthony
McClure

Introduction - speakers



Everton
Fraga



Meghan
Gentry

Solution Architects at AWS



Solution Architects at AWS

- Work backwards from business needs
- Help navigate the breadth and depth of AWS
- Show the art of the possible

From Blockchain to Ethereum

Blockchain

"Smart Contracts: Building Blocks for Digital Markets"

Nick Zsabo (1996)

"RPOW - Reusable Proofs of Work"

Hal Finney (2004)

Blockchain

- A trustless environment to perform transactions
- Home for decentralized, censorship-resistant applications
- Researched for decades

Bitcoin: A Peer-to-Peer Electronic Cash System

Satoshi Nakamoto
satoshin@gmx.com
www.bitcoin.org

Abstract. A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without going through a financial institution. Digital signatures provide part of the solution, but the main benefits are lost if a trusted third party is still required to prevent double-spending. We propose a solution to the double-spending problem using a peer-to-peer network. The network timestamps transactions by hashing them into an ongoing chain of hash-based proof-of-work, forming a record that cannot be changed without redoing the proof-of-work. The longest chain not only serves as proof of the sequence of events witnessed, but proof that it came from the largest pool of CPU power. As long as a majority of CPU power is controlled by nodes that are not cooperating to attack the network, they'll generate the longest chain and outpace attackers. The network itself requires minimal structure. Messages are broadcast on a best effort basis, and nodes can leave and rejoin the network at will, accepting the longest proof-of-work chain as proof of what happened while they were gone.

Blockchain

“A Next-Generation Smart Contract and
Decentralized Application Platform”

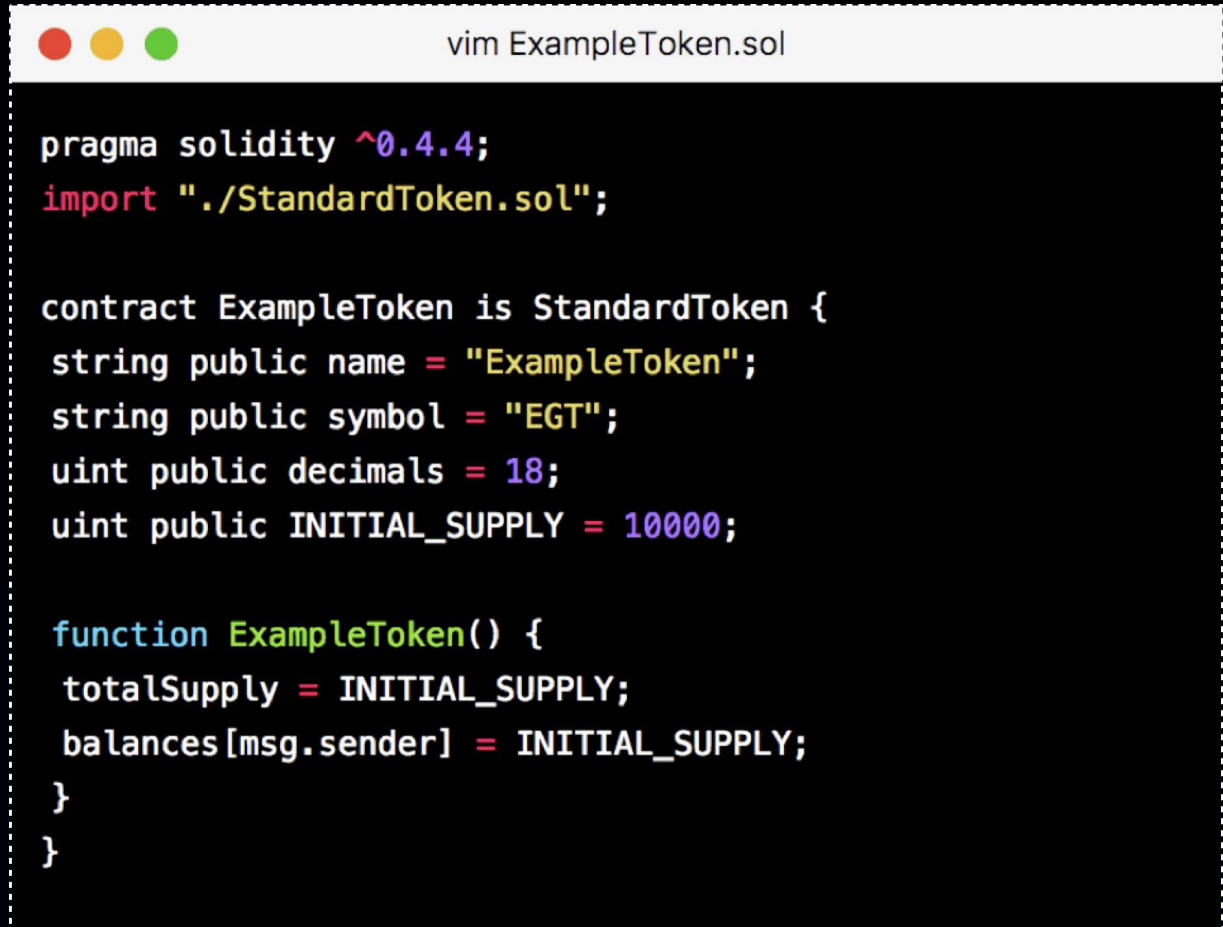
Vitalik Buterin (2013)

“Ethereum: a Secure Decentralized Generalised
Transaction Ledger”

Dr. Gavin Wood (2014)

Ethereum

- Code that is published to the ledger
- Accesses internal storage
- The code is, by definition, deterministic
- All participating nodes execute all transactions and write to their own databases



The screenshot shows a vim editor window titled "vim ExampleToken.sol". The code is written in Solidity and includes a pragma statement for version 0.4.4, an import statement for StandardToken.sol, and a contract definition for ExampleToken that inherits from StandardToken. The contract has four public variables: name, symbol, decimals, and INITIAL_SUPPLY. It also has a constructor function ExampleToken() that initializes totalSupply and balances[msg.sender] to INITIAL_SUPPLY.

```
pragma solidity ^0.4.4;
import "./StandardToken.sol";

contract ExampleToken is StandardToken {
    string public name = "ExampleToken";
    string public symbol = "EGT";
    uint public decimals = 18;
    uint public INITIAL_SUPPLY = 10000;

    function ExampleToken() {
        totalSupply = INITIAL_SUPPLY;
        balances[msg.sender] = INITIAL_SUPPLY;
    }
}
```

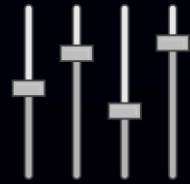
What customers expect from AWS?

- Reliable and performant blockchain APIs
- Operational excellence
- Help recommending the best setup for their blockchain applications
- Vetted solutions

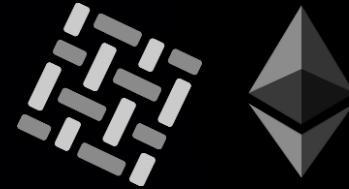


Amazon Managed Blockchain

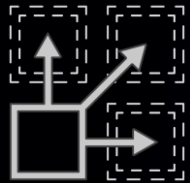
Amazon Managed Blockchain



Fully managed
Create a blockchain network in minutes



Open-source variety
Support for two frameworks



Reliable & scalable
Backed with Amazon technology



Low cost
Only pay for resources used

The workshop

Customer Dashboard Login

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✓ Invalid Hash

<https://dashboard.eventengine.run>





Customer Dashboard


Dashboard


Logout

Team Dashboard

 Event

 AWS Console

 SSH Key

 View Content Guide

Event: re:Invent Example
Team Name: (Team Name Not Set Yet)


Event ID: c7a9c8624a394121b7735472296cb3cc
Team ID: ae780702d1734637b0ce70952eca6b3e

Accessing Workshop Content

[Dashboard](#)

[Logout](#)

Team Dashboard

 Event

[AWS Console](#)[SSH Key](#)[View Content Guide](#)

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AWS Console link

[Dashboard](#)

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Team Dashboard

 Event

[AWS Console](#) [SSH Key](#) [View Content Guide](#)

Event: re:Invent Example
Team Name: (Team Name Not Set Yet)

Event ID: c7a9c8624a394121b7735472296cb3cc
Team ID: ae780702d1734637b0ce70952eca6b3e

Thank you!