AWS re:Invent

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BLC302

Building an Ethereum app with Amazon Managed Blockchain

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Agenda

Introduction

Role of Solution Architects

From Blockchain to Ethereum

Amazon Managed Blockchain

The workshop

Introduction – Workshop Support

Luiz
Decaro

Daniel
Ness

Vishal
Lakhotia

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

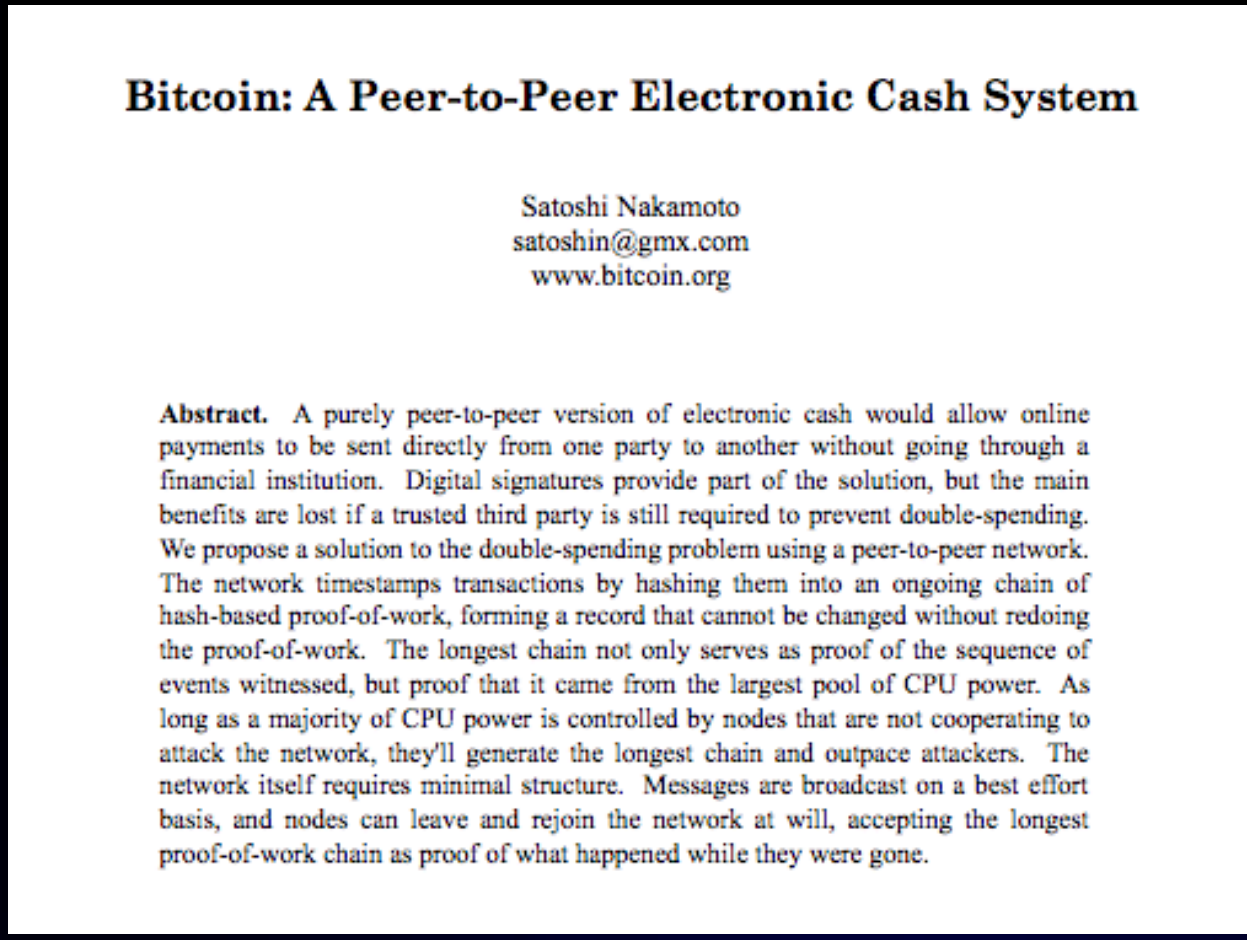
Blockchain

"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

vim ExampleToken.sol

```
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;
 }
}
```

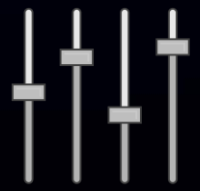
aws

What customers expect from AWS?

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

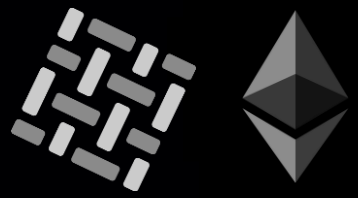
Amazon Managed Blockchain

Amazon Managed Blockchain



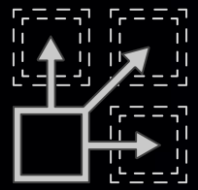
Fully managed

Create a blockchain network in minutes



Open-source variety

Support for two frameworks



Reliable & scalable

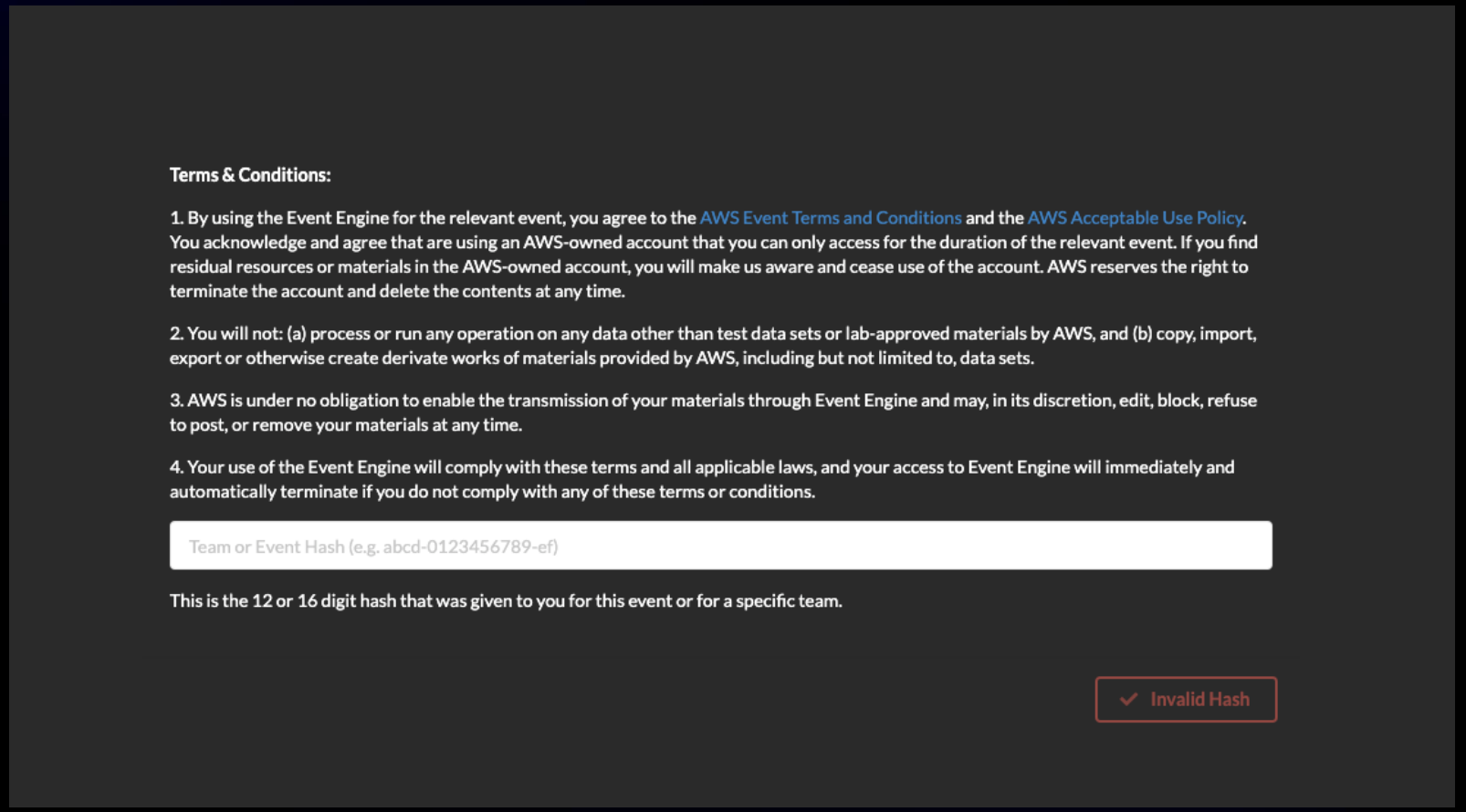
Backed with Amazon technology

Low cost

Only pay for resources used

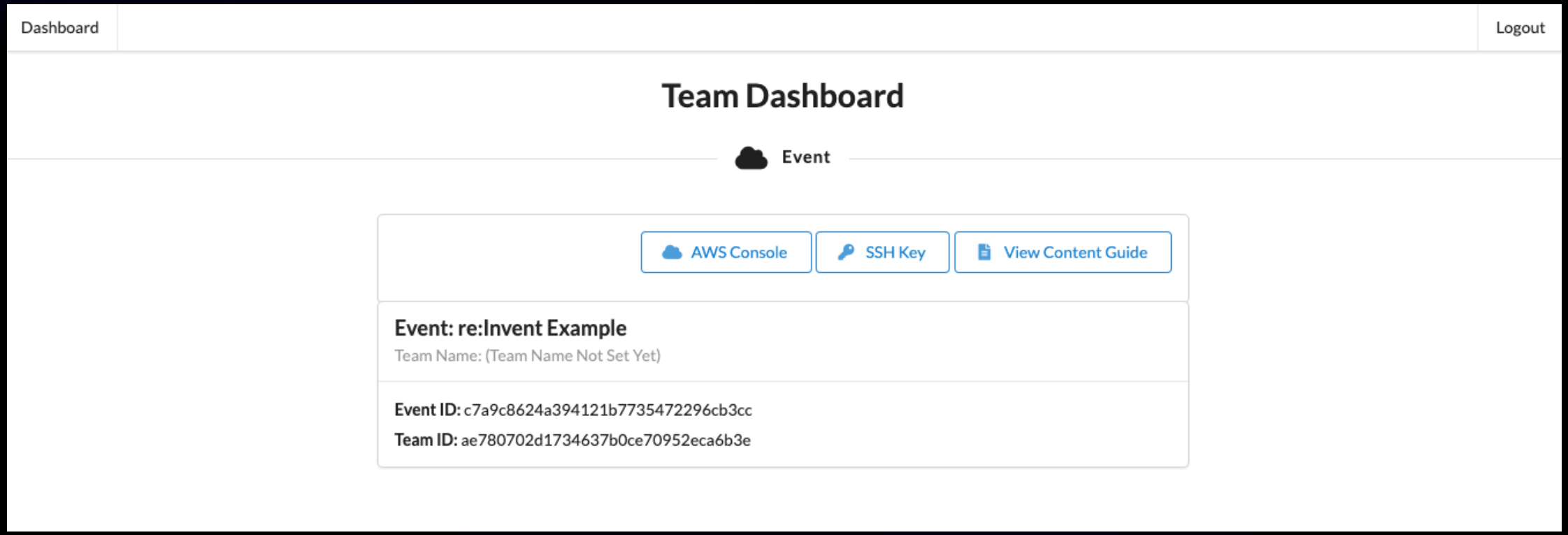
The workshop

Customer Dashboard Login

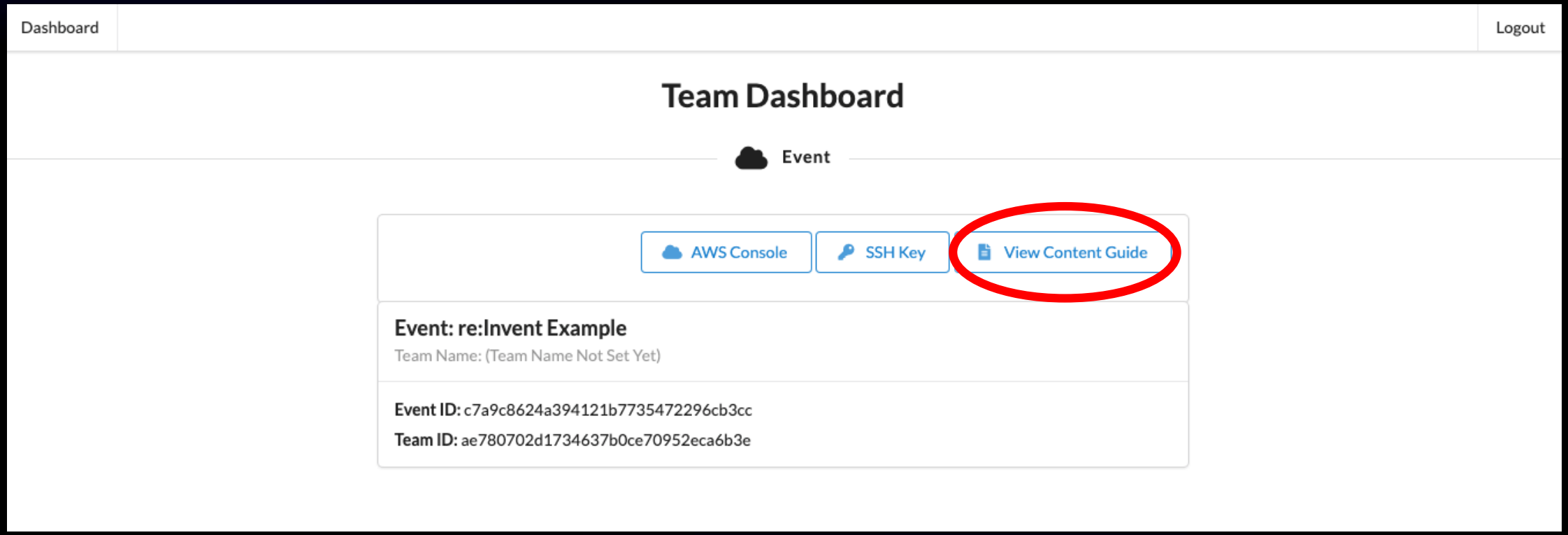


https://dashboard.eventengine.run

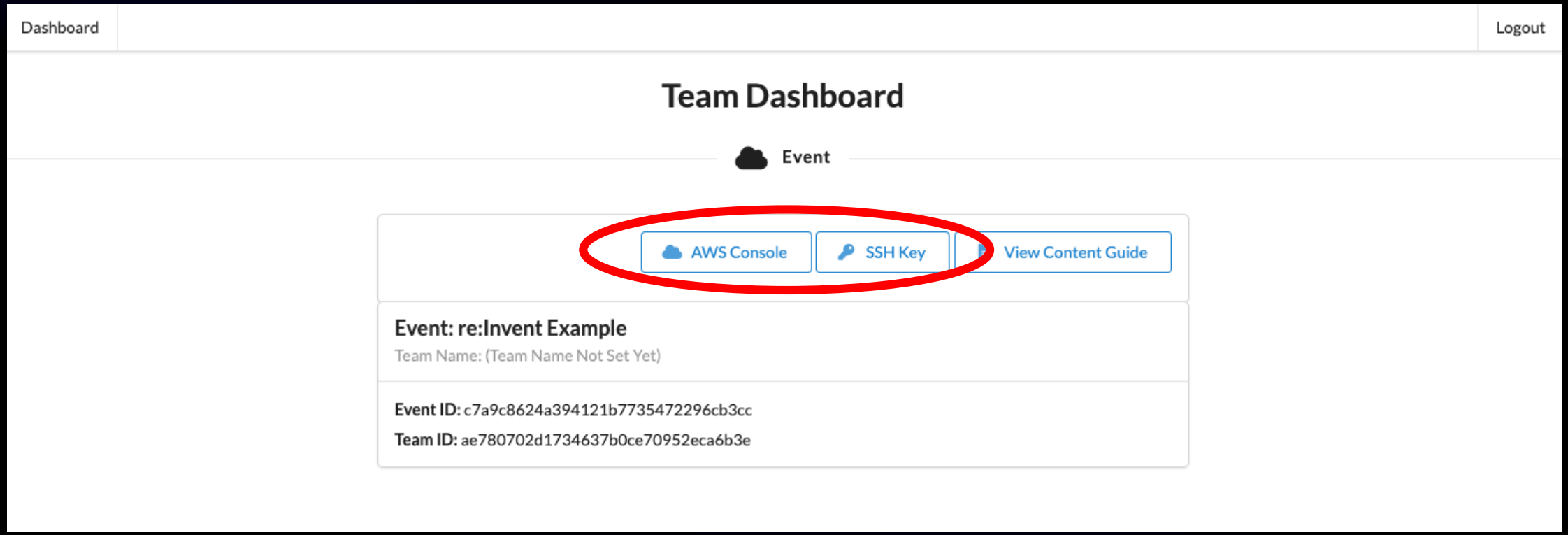
Customer Dashboard



Accessing Workshop Content



AWS Console link



Thank you!