

IBM Blockchain Platform Explained

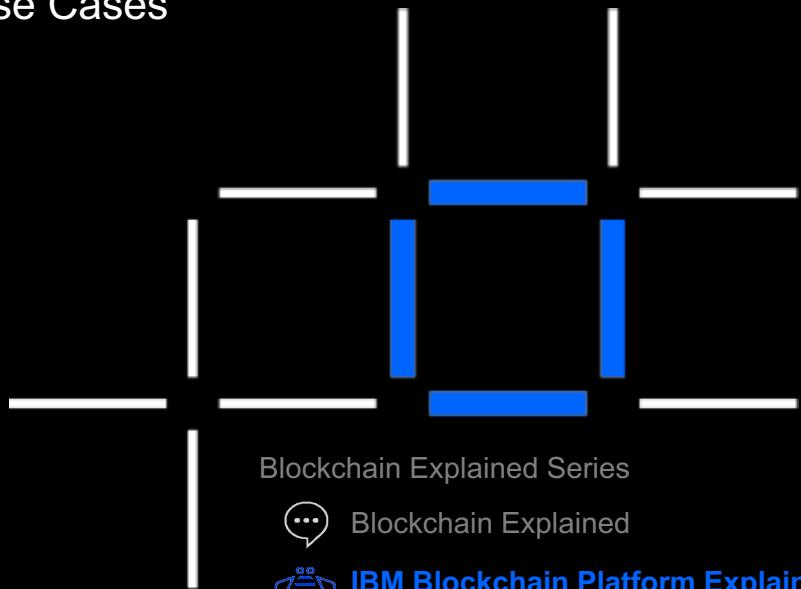
An Introduction to the IBM Blockchain Platform and Use Cases

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Blockchain Explained Series

… Blockchain Explained

IBM Blockchain Platform Explained

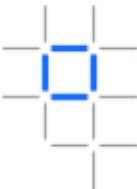
IBM Blockchain Usage Patterns

Solutions Explained

What's New

Labs Explained



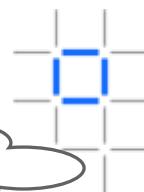


When Does Blockchain Make Sense?

- A business problem that **cannot be more efficiently solved** with other technologies
 - Tradeoffs between performance & Trust/Transparency
- An **identifiable business network** with Participants, Assets and Transactions
- **A need for trust and transparency** which can be provided by blockchain attributes:
 - Consensus, Immutability, Finality or Provenance
- Do existing processes often require **reconciliation**?

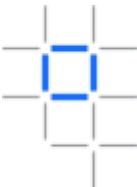


Debunking the Myths of Enterprise Blockchain



- Enterprise blockchain is all hype, no substance
 - Over 100 active Networks
 - Millions of Transactions
- Permissioned Blockchain is only available as a centralized service in the Cloud
 - IBM Blockchain available multicloud and on-prem
- Blockchains do not perform
 - Permissioned Blockchains hundreds to thousands transactions per second
- Requires Crypto
 - Hyperledger Fabric – No Crypto
- IBM owns Hyperledger
 - Hyperledger is Linux Foundation's Open Source & Open Governance





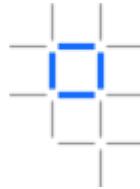
What makes a good first blockchain use case?

– First use-cases are even more difficult to identify!

1. A **limited scope**, but still solves a real business problem
 - Minimum Viable Product in a few weeks of effort
2. A smaller **business network**
 - Usually without requiring regulators and consortia
3. Allows for **scaling with more participants and scenarios**
 - Consider shadow chains to mitigate risks

Start small, succeed and grow fast!

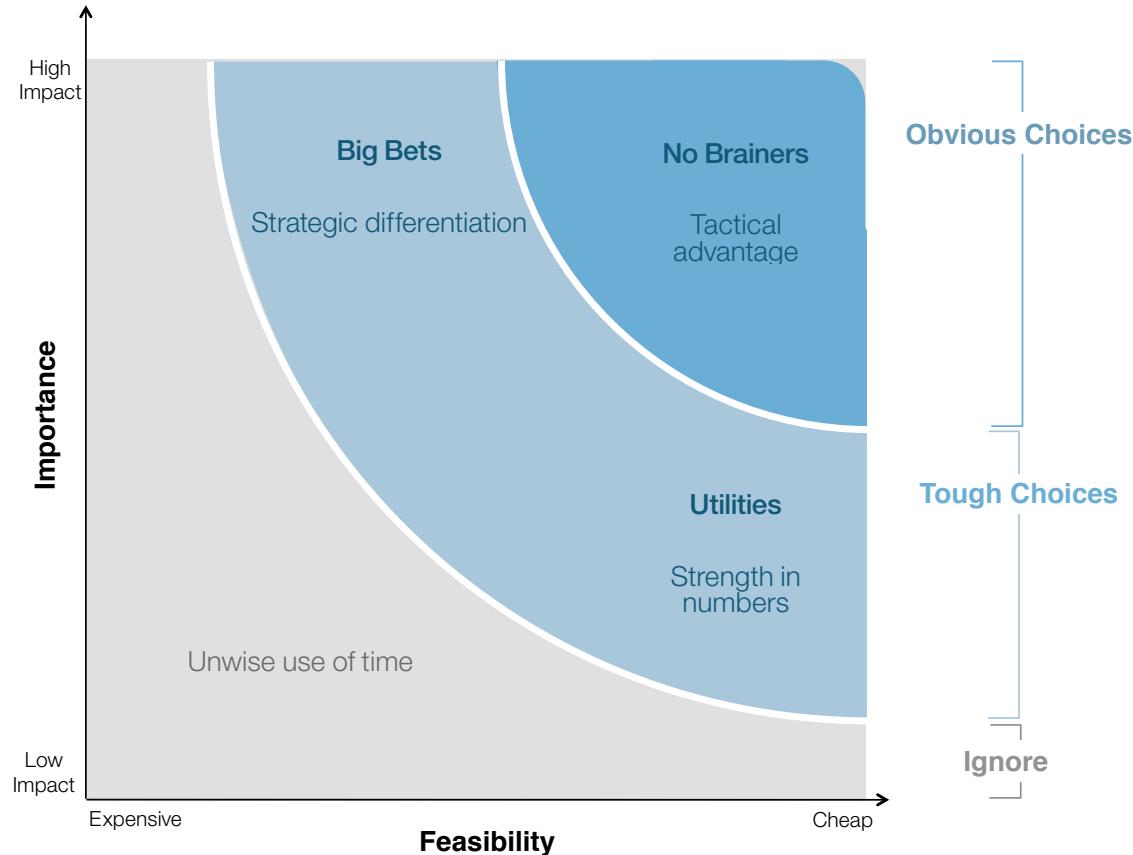
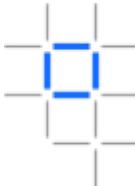
Common attributes in processes that *could* leverage Blockchain



- There are at minimum 2 participants in the process.
- Pain points / challenges in existing business process.
- Missing information / visibility in the current process.
- Asset of value (e.g. physical, virtual, financial, legal, etc.) changes ownership.
- There are inefficiencies in the verification process.
- There is latency in the process.
- There are numerous trusted third parties guaranteeing transactions.



Prioritize your Use Case



Supply Chain



What	Benefits
<ul style="list-style-type: none">• Provenance of each component part in complex system hard to track• Manufacturer, production date, batch and even the manufacturing machine program recorded on immutable ledger and transactions are recorded against	<ol style="list-style-type: none">1. Increased transparency2. Enhanced asset provenance, integrity, and security3. Trust increased, no authority "owns" provenance4. More effective resource planning and system utilization
<ul style="list-style-type: none">• Blockchain holds complete provenance details of each component part• Accessible by each manufacturer in the production process, the asset owners, maintainers and government regulators	

Only 1 in 4 consumers trust today's food ecosystem

Food Safety



1 out of 10 people get sick each year, and 420,000 die from foodborne illness

Supply Chain Inefficiency



80% of Consumer Packaged Goods business are partially or entirely paper-based

Food Waste



1 / 3 of fresh food is thrown out because it is considered unacceptable

Food Fraud



1 in 5 seafood samples is mislabeled worldwide
(43% mislabeled in NYC)

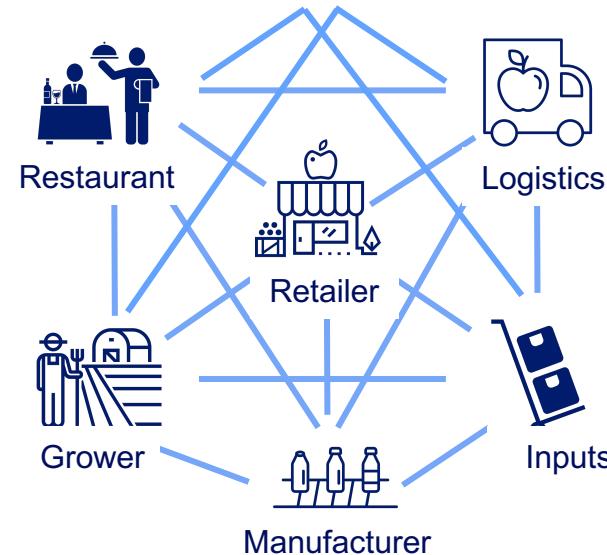
The root of these issues, and many others, are the lack of trust and transparency

Today, traditional system constructs limit transparency

The Problem:

- Data is siloed within each company and accessing it requires a request and time
- Exchange of information takes place between a pair of partners; to get information from a distant partner may require intermediaries, time, resources
- Most transactions are still paper-based, creating inefficiencies and opportunities for fraud
- Because everyone maintains their own record of transactions, differences take time and resources to reconcile

The food industry today

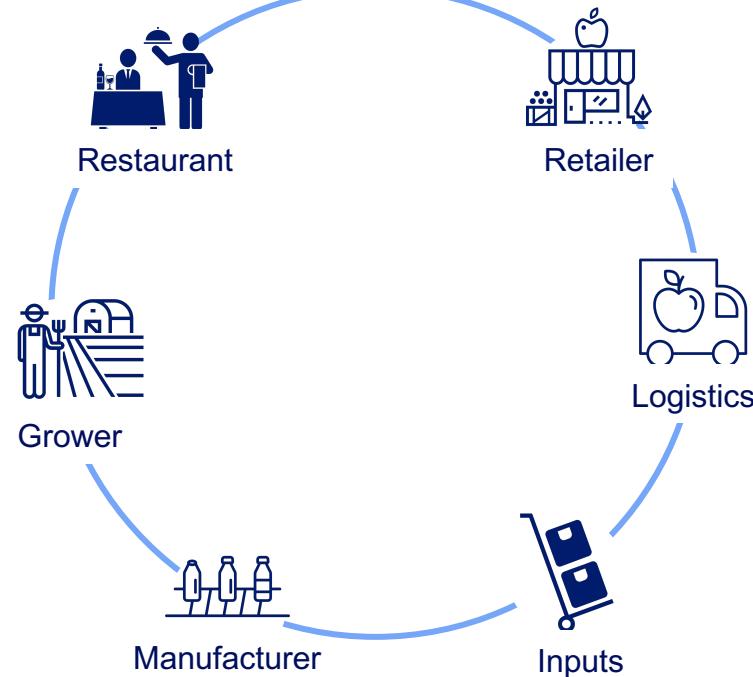


Blockchain transforms systems with trust and transparency

The Solution:

- Because blockchain provides an **independent data-sharing platform**, participants **trust it**
- Once data is shared in a single data-sharing platform, everyone has **instant transparency** into the transactions they are authorized to view; no intermediation required
- Data immutability** creates an auditable record of all transactions, disincentivizing fraudulent behavior
- Dispute resolution** from the shared ledger can be automated saving time and resources

The food industry with blockchain



Built on a blockchain platform, IBM Food Trust offers industry-specific functionality targeted at key pain points

Trace

Trace the location and status of food products upstream and downstream across the supply chain

Certifications

Enable reliability and accountability with instant access to digitized records and documents

Fresh Insights

Access real-time and aggregate supply chain data to extend product freshness and shelf life

Third-party

Partner to expand functionalities and deliver new value across the food system through our APIs

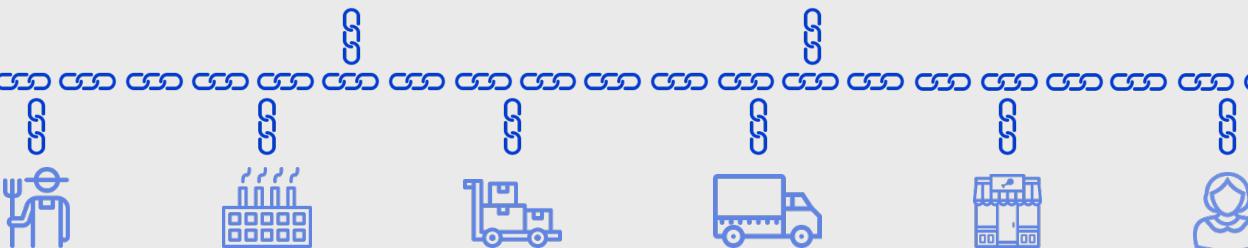
Capabilities

APIs can be used to retrieve platform data to create new applications for internal and consumer facing applications

Blockchain Technology



Food Supply Ecosystem



IBM Blockchain Platform

Hyperledger Fabric

GLOBAL TRADE IS HIGHLY INEFFICIENT AND BURDENED BY PAPER-BASED PROCESSES

+ Data trapped in organizational silos

Information is held in paper and various digital formats across dozens of service providers along the supply chain, requiring complex, cumbersome, and costly peer-to-peer messaging. The result is inconsistent information across organizational boundaries, latency in obtaining shipment visibility, and blind spots that hinder the efficient flow of goods.

+ Manual, time-consuming, paper-based processes

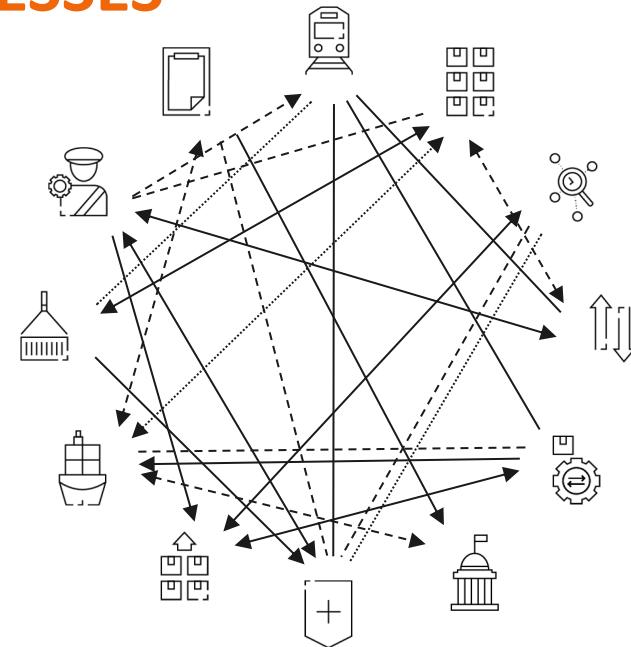
The collection and processing of up-to-date data, as well as inefficient trade document exchange, requires manual checks and frequent follow-ups and results in errors, delays and high compliance costs. Late filings are common due to missing information.

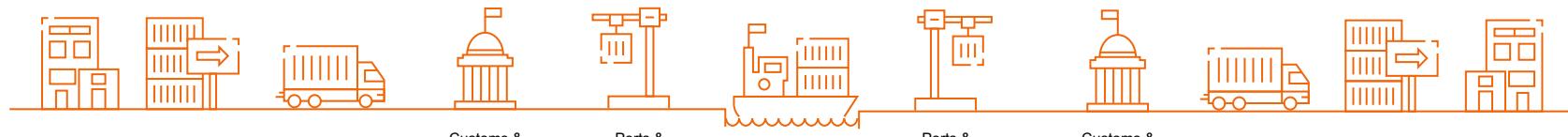
+ Clearance takes too long and is often subject to fraud

Risk assessments by customs authorities lack sufficient and trusted information resulting in high inspection rates, added prevention measures against fraud and forgery, and delayed customs clearance.

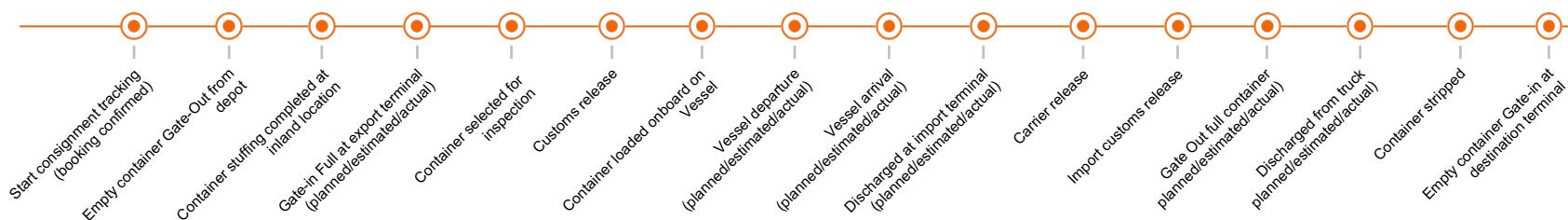
+ High costs and poor customer service

These challenges have significant downstream repercussions. The inability to forecast and plan effectively, address supply chain disruptions in near real-time, and share trusted information across the supply chain leads to excessive safety stock inventory, high administrative costs, operational challenges, and ultimately poor customer service.





SHIPPING MILESTONES AND SHIPMENT DATA*



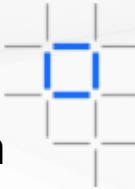
STRUCTURED AND UNSTRUCTURED DOCUMENTS*



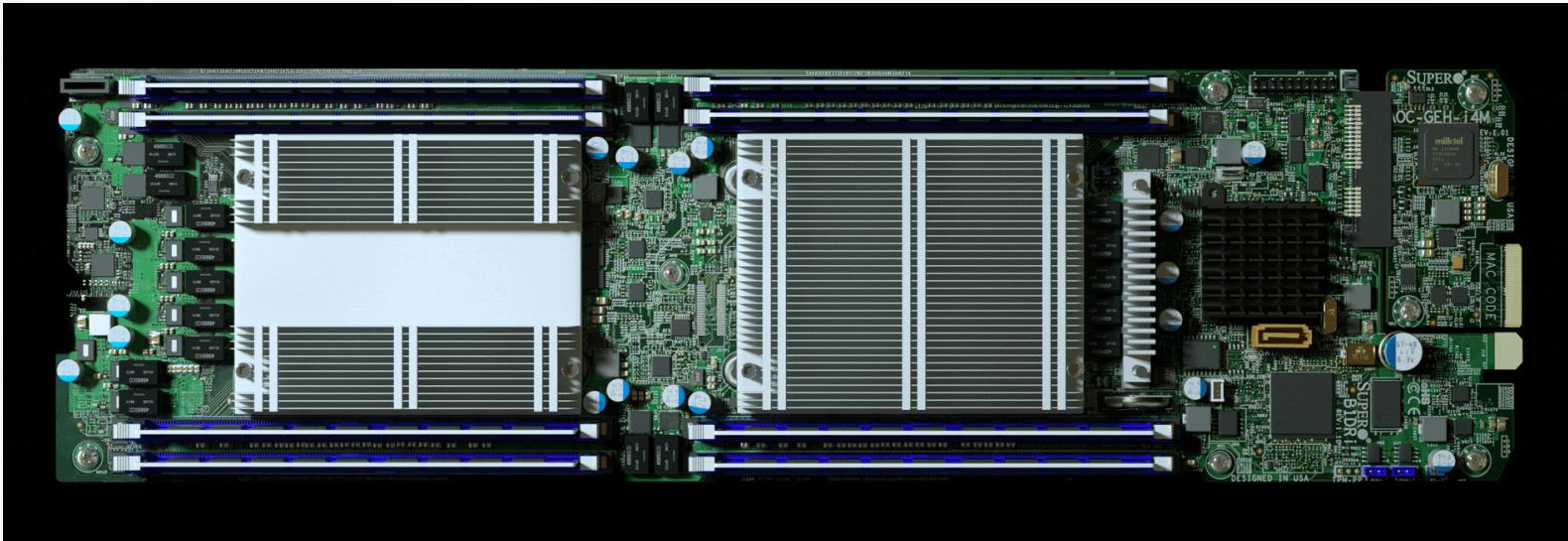
TRADELENS BLOCKCHAIN BUSINESS NETWORK



Blockchain + AI for Supply Chain – Asset Verification

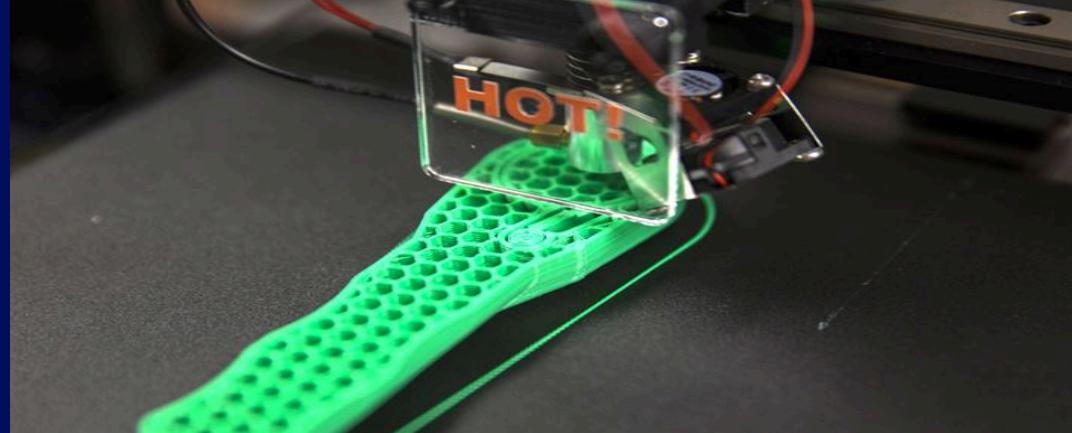


Couple blockchain with Visual Recognition to eliminate the integrity gap between digital and physical assets



Create digital signature with images of legitimate physical asset, record it on an immutable ledger, and then validate the physical asset against the signature

Additive Manufacturing



What

- Prevent introduction of wrong or counterfeit 3D-models into manufacturing processes
- Create audit trail for design modification and approval
- Secure the digital thread of 3D printed assets

How

- 3D-model hash values stored on chain with pointer to design.
- Access and permissions assigned to design managed via blockchain

Benefits

1. Detection of unauthorized modifications
2. Reduce costs from delays or re-work caused by using the wrong digital models
3. Securely share models
4. Track creation of components

Secure Information Sharing & Governance



What

- Sensitive data in government is dispersed throughout many depts, agencies, and industry partners
- Audit and Compliance needs indelible record of all key transactions against sensitive data

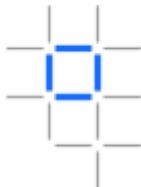
How

- Blockchain collects transaction records from diverse set of information systems
- Append-only and tamperproof qualities create high confidence audit trail
- Privacy features to ensure authorized user access

Benefits

1. Lowers cost of audit and regulatory compliance
2. Increases ability to share sensitive data with internal and external entities
3. Enhanced security and integrity of data

CDC: Reference Data Chain of Custody & Consent for EHR

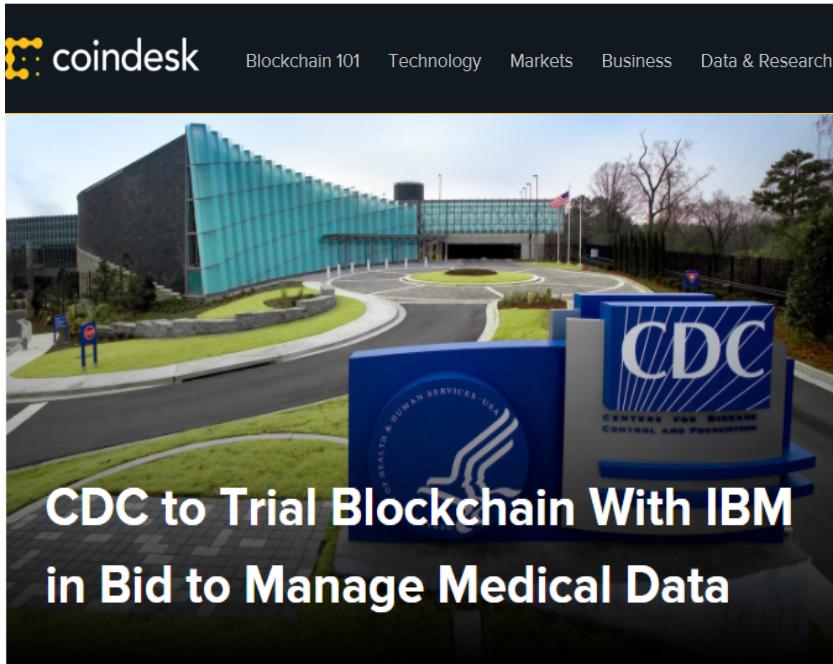


What?

- Track the chain of custody of the EHRs and how they are stored, accessed and moved through the lifecycle in compliance with specific governmental regulations
- Manage consent and sharing of EHRs

How?

- Each participant agrees to capture the access and storage of EHR data on the blockchain
- Blockchain creates single view of the EHR reference data
- Include consent model so that owners of data can quickly and easily provide consent for others to access their data and then record consent to avoid dispute



A screenshot of a news article from Coindesk. The header features the Coindesk logo and navigation links for "Blockchain 101", "Technology", "Markets", "Business", and "Data & Research". Below the header is a photograph of the CDC headquarters building, a modern structure with a dark facade and a prominent blue glass-enclosed section. In the foreground, a blue sign for the "Centers for Disease Control and Prevention" is visible. The main title of the article is "CDC to Trial Blockchain With IBM in Bid to Manage Medical Data".

Procurement



Blockchain Acquisition Assistance - “Accelerate”



What

- Record vendors' interactions with HHS on the blockchain. Vendors can access a time-stamped record of all financial information, requests-for-information, reference checks and other data provided in the past

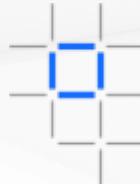
How

- Machine learning algorithms cleanse the data of five separate contract-writing systems and put it in a structured data taxonomy to track through blockchain technology.
- The blockchain automatically updates transaction information in a secure, compartmentalized cloud infrastructure.

Benefits

1. Trims acquisition lifecycle
2. Provides enterprise wide visibility
3. Innovates without large capital commitments
4. Mitigates Risk
5. Improves procurement cycle
6. Savings at point-of-purchase

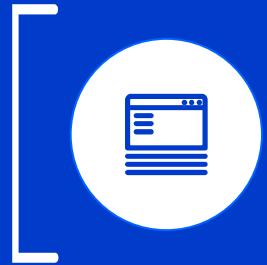
Blockchain + AI for Acquisition Compliance



Couple blockchain with Watson Compare & Comply to improve Federal Acquisition Regulation compliance



Blockchain serves as trusted platform for transacting and sharing data between government and industry. Watson C&C helps identify potential areas of non-compliance



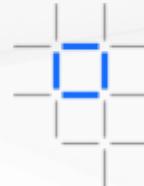
IBM Solutions



Your Solution



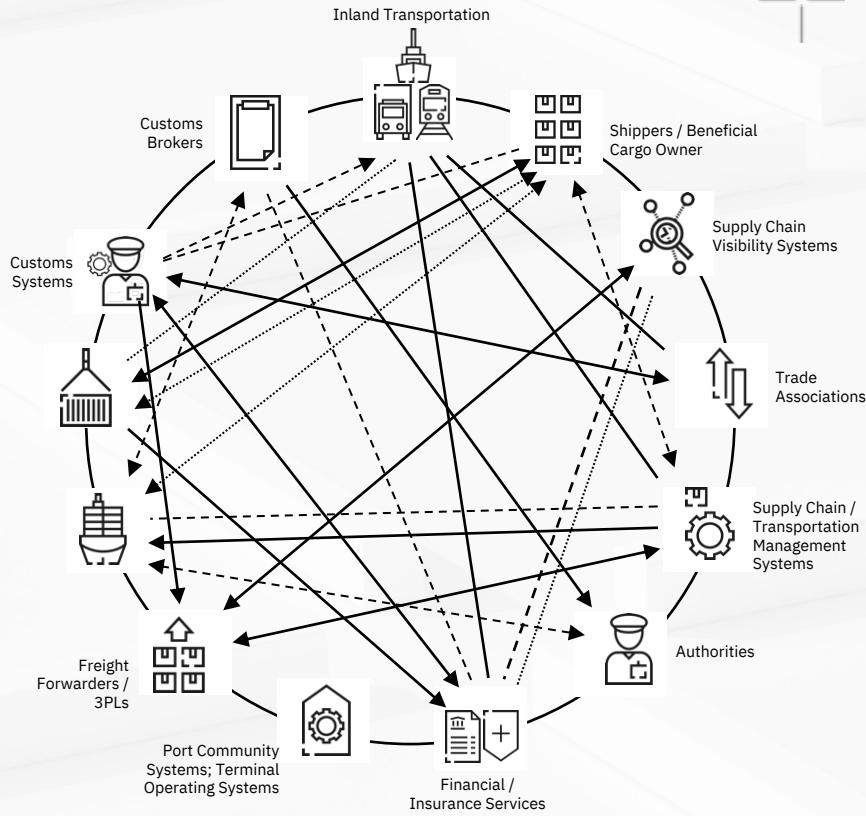
TradeLens improves global trade efficiency



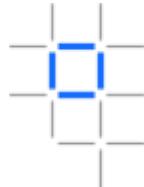
- TradeLens is an open, extensible platform for sharing shipping events, messages, and documents across all the actors and systems in the supply chain ecosystem.
- It provides shared visibility and shared state for container shipments

Benefits

- Increase speed and transparency for cross border transactions through real time access to container events.
- Reduced cost and increased efficiency through paperless trade



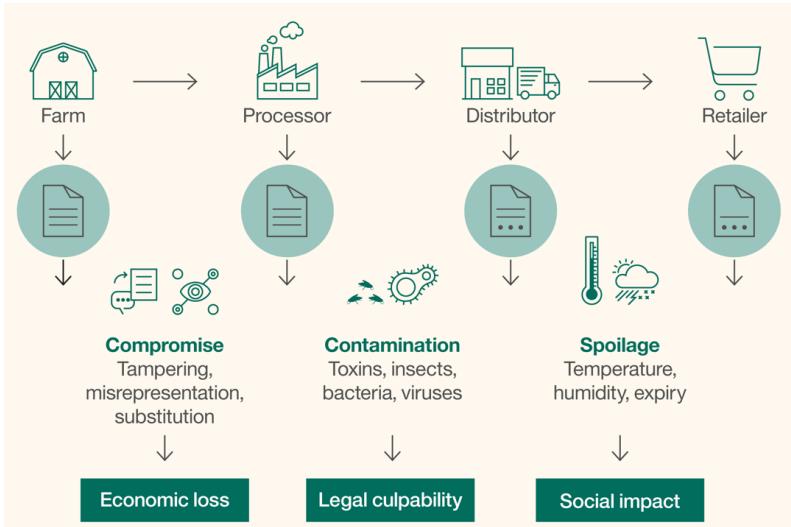
IBM Food Trust for supply chain transparency



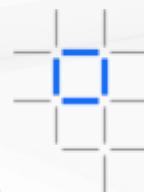
- IBM Food Trust is a set of modules providing traceability to improve food transparency and efficiency
- Blockchain is used to create a trusted connection with shared value for all ecosystem participants, including end consumers.

Benefits

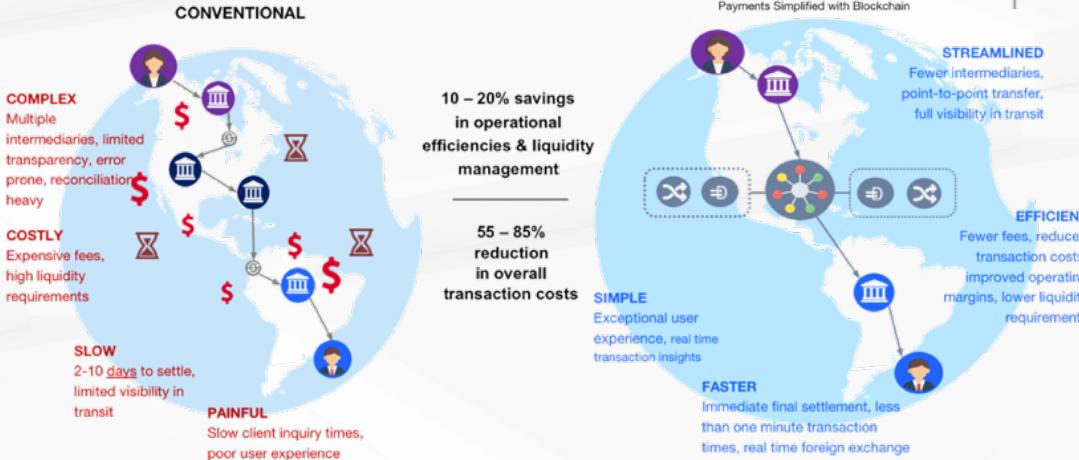
- Reduce impact of food recalls through instant access to end-to-end traceability data to verify history in the food network and supply chain.
- Help to address the 1 in 10 people sickened and 400,000 fatalities world wide which occur every year from food-born illnesses.



World Wire is revolutionizing global payments



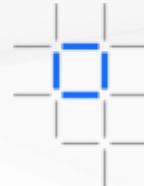
- IBM Blockchain World Wire is an integrated network for real-time clearing and settlement.
- Allows banks and financial institutions to send and settle payments around the globe with finality in a matter of seconds
- Eliminates enduring challenges that have long hampered the cross-border payments industry.



Benefits

- Payment support regardless of size, origination, destination or asset type
- Higher visibility for streamlined transactions with reduced disputes and reconciliation needs
- Enhanced regulatory compliance through improved transparency
- Secure network with interaction and eligibility criteria as well as robust access controls

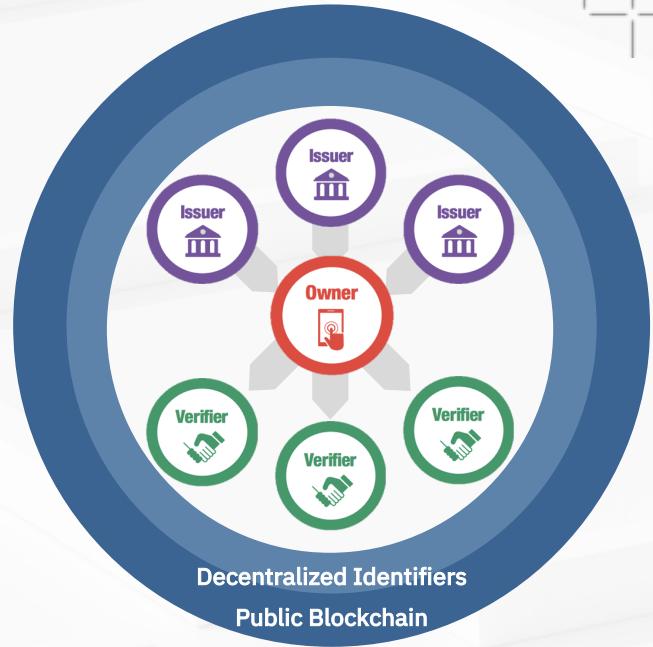
Decentralized trusted identity



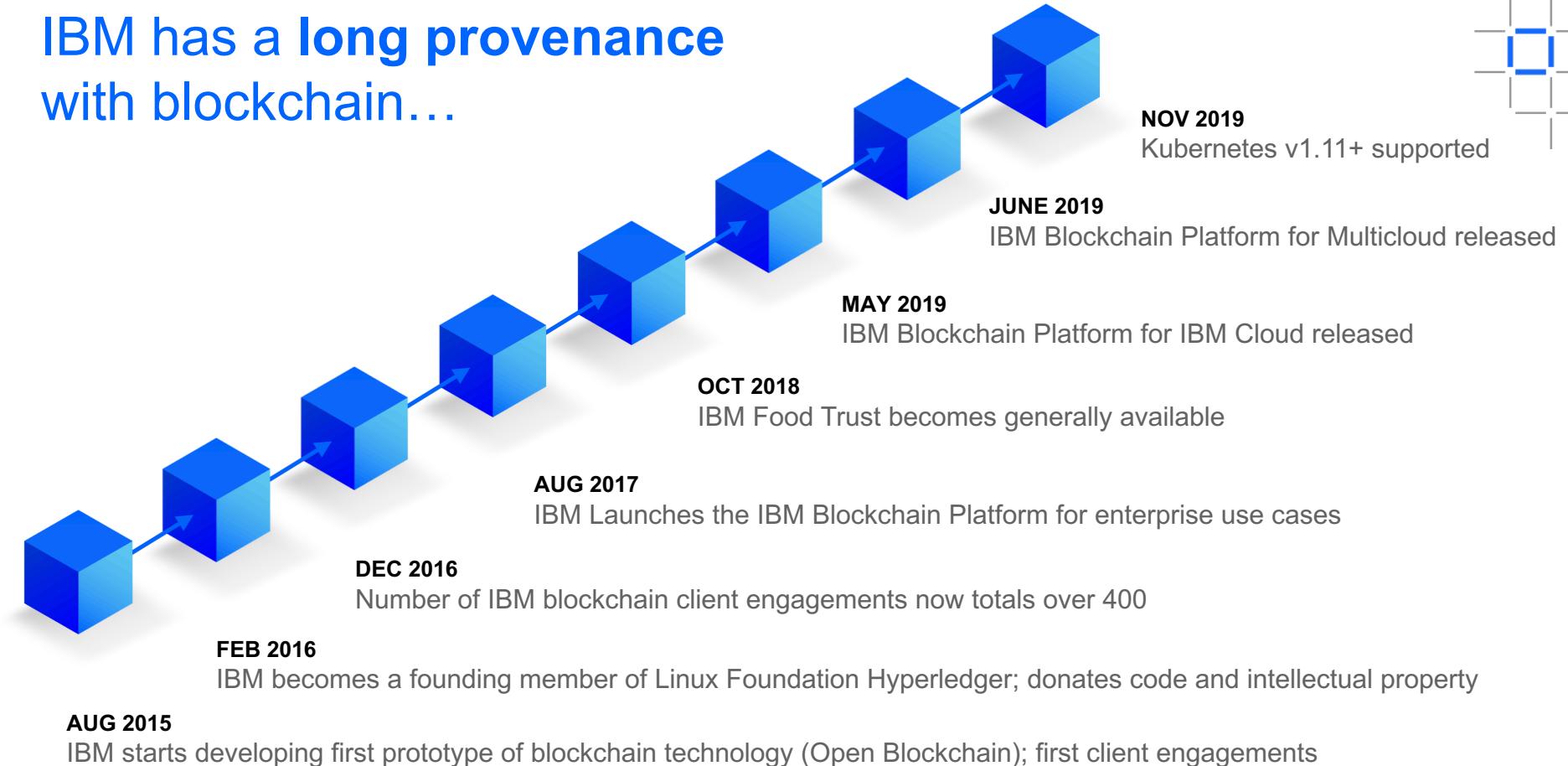
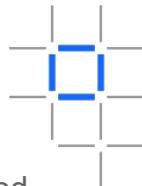
- Sovrin pushes identity to the edge of the network
- Cryptographic, point to point exchange of identity
- Based on Hyperledger Indy technology

Benefits

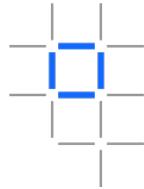
- A decentralized approach that establishes trust and puts the end user in control
- Every person, organization, and thing has a digital wallet to control the flow of their identity
- No PII is stored on the public ledger!



IBM has a **long provenance** with blockchain...



IBM is the leader in enterprise blockchain technology



We are the only provider of end to end enterprise blockchain services in the industry

IBMer are the undisputed enterprise blockchain experts

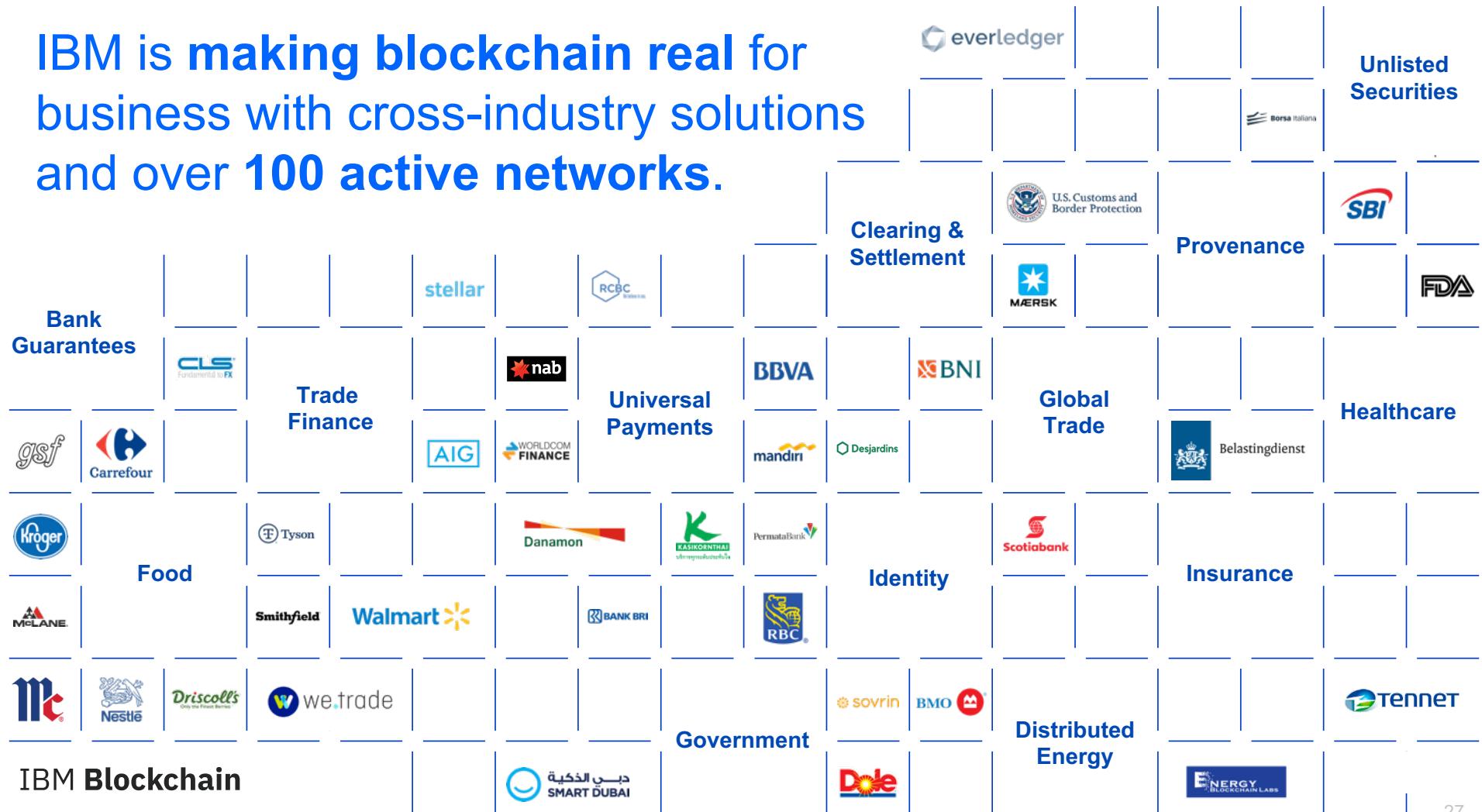
IBM has more production blockchain networks than any other competitive platform

Only enterprise blockchain platform with true multi-cloud capabilities

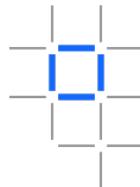
Most advanced developer and operator tools that make network configuration simple

Only blockchain platform that doesn't lock you in to a single vendor

IBM is making blockchain real for business with cross-industry solutions and over 100 active networks.



IBM Blockchain Platform is a key part of IBM's Blockchain Strategy



Services

Collaborate
with services
teams from
ideation all the
way to
production



Ecosystem

Tap into our diverse ecosystem to develop strategic partnerships and create your competitive advantage



Solutions

Solve critical industry challenges by building and joining new business networks and applications



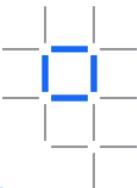
IBM Blockchain Platform

Build, operate and grow blockchain networks in heterogeneous environments



HYPERLEDGER

A founding, premier member of Hyperledger, IBM is committed to open source, standards & governance

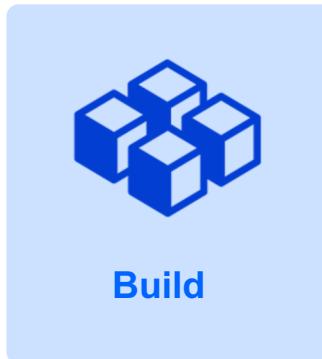


What is the IBM Blockchain Platform?

Advanced tooling
allows you to quickly build,
operate & govern and grow
blockchain networks

Open technology
uses Hyperledger Fabric, the
industry standard for
enterprise blockchain

Deploy anywhere
fully managed, or flexible
deployment on-premises or on
other cloud vendors



Build



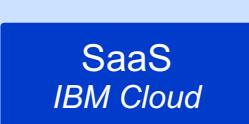
Operate &
Govern



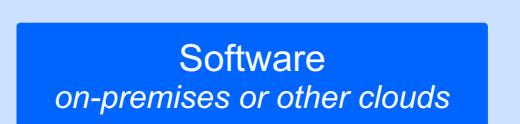
Grow



Kubernetes



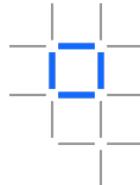
SaaS
IBM Cloud



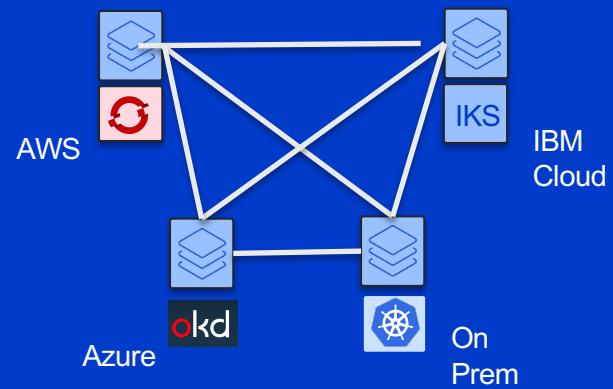
Software
on-premises or other clouds



IBM Blockchain Platform: Deploy anywhere

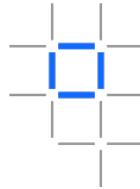


- IBM Blockchain Platform can be deployed wherever you want
 - **IBM Cloud** for an IBM-managed service, using IBM Kubernetes Service
 - **On-premises** or in **other cloud providers** for greater deployment flexibility, using any Kubernetes v1.11+ environment (e.g. RH OpenShift, OKD, AKS, Rancher)
- **Fully heterogeneous**: different components can be deployed in different environments
- Caters for different vendor biases in the business network and **avoids lock-in**

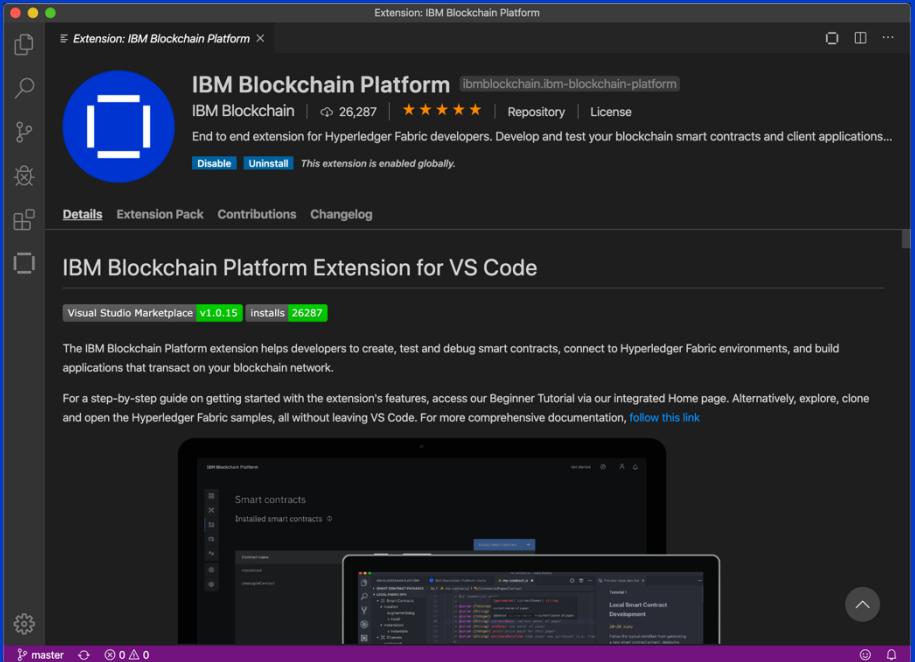




IBM Blockchain Platform's advanced tooling: Build

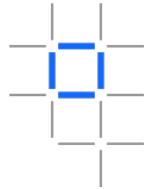


- Comprehensive developer tools for smart contracts and client applications, based on the popular **Visual Studio Code** environment
- Broad range of industry code samples and tutorials; smart contracts in JavaScript, TypeScript, Java and Go
- **Simplified DevOps** allows you easily move from development to test to production from a single console





IBM Blockchain Platform's advanced tooling: Operate & Govern

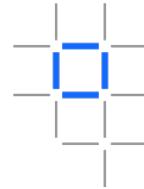


- Maintain **complete control** of your blockchain: govern and operate ledgers, channels, identities and other assets in one intuitive console
- Deploy only the blockchain components you need and manage them - wherever they are hosted
- Support for **highly available** environments and **disaster recovery** scenarios

Enroll ID	Type	Affiliation
admin	client	
tester2@test.com	client	org1
tester3@test.com	client	org1
tester@test.com	client	org1
user2	client	org1



IBM Blockchain Platform's advanced tooling: Grow



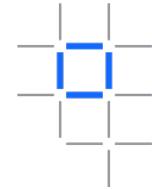
- Start small, pay as you grow for what you use with **no upfront investment** and upgrade easily through Kubernetes
- **Easily connect** a single peer to multiple industry networks
- Connect to nodes running in any environment (on-premises, public, hybrid clouds)

The screenshot displays the IBM Blockchain Platform dashboard. On the left, a sidebar contains icons for Nodes, Peers, Certificate Authorities, AP Credentials, Dev Credentials, Euro Credentials, Staging Credentials, US Credentials, and Add Certificate Authority. The main area is divided into three sections: **Nodes**, **Peers**, and **Certificate Authorities**.
Nodes: Shows four nodes: DVI Euro - 1, DVI Euro - 2, DVI Euro - 3, and DVI Euro - Test, all listed as Peers under euroadmin and running on IBM Cloud.
Peers: Shows four peers: DVI Euro - 1, DVI Euro - 2, DVI Euro - 3, and DVI Euro - Test, all listed as Peers under euroadmin and running on IBM Cloud.
Certificate Authorities: Shows six certificate authorities: AP Credentials, Dev Credentials, Euro Credentials, Staging Cred..., US Credentials, and Add Certificate Authority, all listed as Certificate Authorities under euroadmin and running on IBM Cloud.
Notifications: A sidebar on the right shows 7 notifications from Today (9 May 2019). The notifications include:

- Signature request submitted by euroadmin Proposed channel configuration update on flexneuro
- 1/2 signatures received
- [View channel configuration updates →](#) 13:23
- New channel flexnettest2 created by euroadmin New channel flexnettest2 created by euroadmin
- [View channel information →](#) 13:17
- New channel flexnetstagings created by euroadmin New channel flexnetstagings created by euroadmin
- [View channel information →](#) 13:16
- New channel flexnetstagingeuro created by euroadmin New channel flexnetstagingeuro created by euroadmin
- [View channel information →](#) 13:15
- New channel flexnexus created by euroadmin New channel flexnexus created by euroadmin
- [View channel information →](#) 13:15
- New channel flexnettest created by euroadmin New channel flexnettest created by euroadmin
- [View channel information →](#) 13:14
- New channel flexneteuro created by euroadmin New channel flexneteuro created by euroadmin



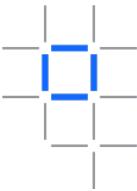
IBM Blockchain Platform has **affordable pricing** that scales with your network



- Get what you need and **only pay for what you use**
- **Pay less** per CPU-hour as your network grows
- **Customize** your components and compute allocation to fit your use-case and budget with **no fixed membership fees!**

Pricing options** (1 VPC = 1 CPU = 1 vCPU)	Test Network	Join a Network
CPU allocation	1.65 vCPU Includes: - 1 peer (1.1 vCPU) - 2 CAs (0.1 vCPU x 2) - 1 ordering node (0.35 vCPU)	4.5 vCPU Includes: - 2 peers (for HA) (2x default compute = 2 x 1.1 x 2) - 1 CA (0.1)
Hourly cost: IBM Blockchain Platform	\$0.48 USD (1.65 vCPU x \$0.29 USD/VPC-hr)	\$1.31 USD (4.5 vCPUs x \$0.29 USD/VPC-hr)
Hourly cost: IBM Cloud Kubernetes cluster	\$0.27 USD (Compute: 4 x 16 lowest tier; 1 worker node; 1 zone) (IP Allocation: \$16 USD/month)	\$0.46 USD (Compute: 8 x 32 lowest tier; 1 worker node; 1 zone) (IP Allocation: \$16 USD/month)
Hourly cost: Storage	\$0.07 USD 340GB <u>Bronze</u> 2 IOPS/GB	\$0.13 USD 420GB <u>Silver</u> 4 IOPS/GB
Total hourly cost	\$0.82 USD	\$1.90 USD

US pricing as of Nov 2019. See <https://cloud.ibm.com/docs/services/blockchain?topic=blockchain-ipb-saas-pricing>



Benefits of Red Hat OpenShift and IBM Blockchain Platform

1. Decentralization

A major benefit of blockchain is decentralization, reducing the possibility of a single point of failure rendering the network unusable. Applications and network nodes can be **multi-zone, multi-region, and high availability**. A failure in one or more network nodes will still allow the network to continue communicating.

2. More infrastructure options

OpenShift allows Fabric nodes to be installed onto a large variety of infrastructure, **including public or private clouds, hybrid clouds, on-premise, and highly customizable environments.**

3. Scale

The combination of OpenShift and IBM Blockchain Platform allow network administrators to **quickly and easily deploy nodes**. Applications that are built to communicate with the blockchain network and the network nodes itself can be scaled up or down with a few simple clicks.

4. Developer and SysAdmin Friendly

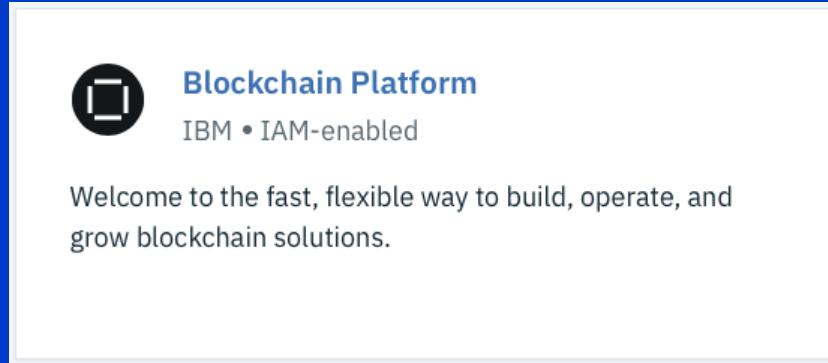
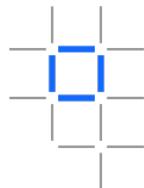
OpenShift comes with CI/CD tooling to make developers' lives easier. SysAdmins have access to monitoring tools and the OpenShift console that helps make managing the cluster and nodes a breeze.

5. Security

OpenShift's **security by default approach** brings another layer of protection to your blockchain network and nodes. Red Hat's certified Docker images in combination with IBM certified Hyperledger Fabric images guarantees that the most up to date, production grade containers are running on your cluster.



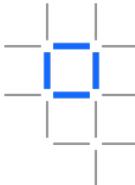
Starting with IBM Blockchain Platform for IBM Cloud



1. Go to the IBM Cloud console (cloud.ibm.com) and search the catalog for blockchain



Starting with IBM Blockchain Platform for IBM Cloud



Blockchain Platform

IBM • IAM-enabled

Welcome to the fast, flexible way to build, operate, and grow blockchain solutions.

1. Go to the IBM Cloud console (cloud.ibm.com) and search the catalog for blockchain

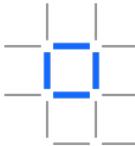
The screenshot shows the IBM Cloud catalog interface. On the left, there's a sidebar with the 'Blockchain Platform' service selected. The main area displays four thumbnail images of the platform's user interface, followed by a section titled 'Pricing Plans'. This section includes a table comparing different plan options: 'Beta trial', 'Standard', and 'Basic'. The 'Standard' plan is highlighted with a checkmark and described as providing 'All the tooling you need to build, operate, and grow your blockchain solution.' It costs '\$0.29 USD/Virtual Processor Core-Hours'. At the bottom of the page are two buttons: 'Add to estimate' and 'Create'.

PLAN	FEATURES	PRICING
Beta trial	-	-
✓ Standard	All the tooling you need to build, operate, and grow your blockchain solution.	\$0.29 USD/Virtual Processor Core-Hours
Basic	Quickly progress from development, to pilot, to production with a single plan that scales as you grow. Please note that you will be charged additionally for infrastructure and storage. File storage will be provisioned unless you change your Kubernetes storage preferences.	-

2. Create your blockchain service instance



Starting with IBM Blockchain Platform for IBM Cloud



Blockchain Platform

IBM • IAM-enabled

Welcome to the fast, flexible way to build, operate, and grow blockchain solutions.

1. Go to the IBM Cloud console (cloud.ibm.com) and search the catalog for blockchain

The screenshot shows the 'Resource list' for the 'Blockchain Platform-gv' service instance. It includes details like 'Resource group: default' and 'Location: Dallas'. A sidebar on the left lists steps: 'Welcome and pre-requisites' (checked), 'Create cluster' (Optional), 'Link to a cluster' (selected), and 'Launch IBM Blockchain Platform console' (unchecked). The main panel displays instructions to 'Deploy the IBM Blockchain Platform on your IBM Kubernetes Service cluster'. It asks to 'Select the cluster to deploy IBM Blockchain Platform on:' and provides a dropdown menu with 'Select an IBM Kubernetes Service cluster'. A note says 'Choose your cluster carefully. You will be billed based on [IBM Kubernetes Service cluster pricing](#)'. A progress bar at the bottom indicates the step can take up to 10 minutes to complete. Navigation buttons 'Back' and 'Deploy to cluster' are at the bottom.

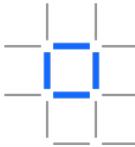
3. Create and attach an IBM Kubernetes Service cluster

The screenshot shows the 'Pricing Plans' section of the IBM Cloud catalog. It features a grid of three images showing different service configurations. Below the images is a table with columns 'PLAN', 'FEATURES', and 'PRICING'. One row is highlighted for the 'Standard' plan, which includes 'All the tooling you need to build, operate, and grow your Blockchain solution.' and a price of '\$0.19/GB2 Virtual Processor Core Month'. Buttons for 'Add to estimate' and 'Create' are at the bottom right.

2. Create your blockchain service instance



Starting with IBM Blockchain Platform for IBM Cloud



Blockchain Platform
IBM • IAM-enabled

Welcome to the fast, flexible way to build, operate, and grow blockchain solutions.

1. Go to the IBM Cloud console (cloud.ibm.com) and search the catalog for blockchain
3. Create and attach an IBM Kubernetes Service cluster

Resource list /

Blockchain Platform-gv

Resource group: default Location: Dallas [Add New](#)

Welcome and pre-requisites

Create cluster Optional

Link to a cluster

Launch IBM Blockchain Platform console

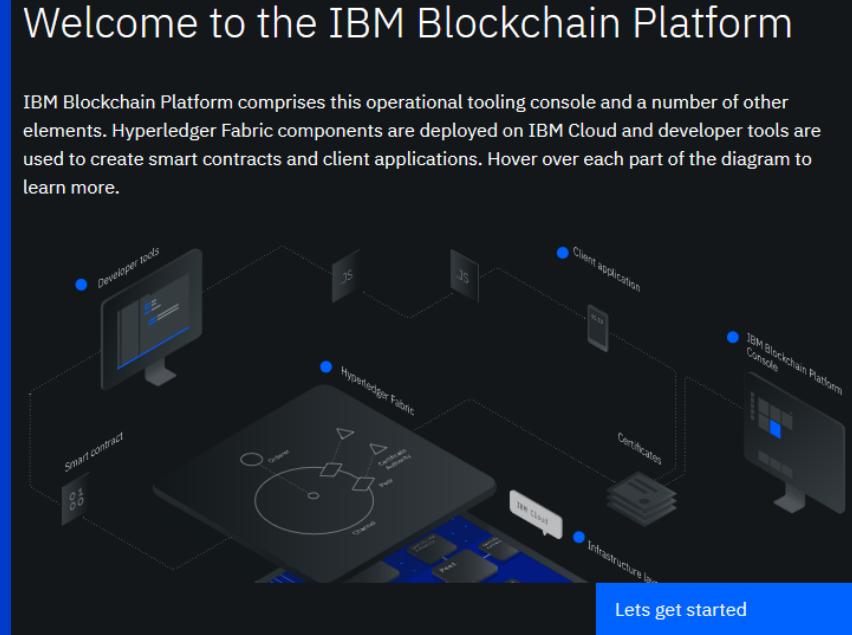
Deploy the IBM Blockchain Platform on your IBM Kubernetes Service cluster

Select the cluster to deploy IBM Blockchain Platform on:

Select an IBM Kubernetes Service cluster
Choose your cluster carefully. You will be billed based on [IBM Kubernetes Service cluster pricing](#).
This step can take up to 10 minutes to complete.

[Back](#) [Deploy to cluster](#)

IBM Blockchain



4. Launch blockchain console

Images

Images can be screen captures, slides, or videos. Click an image to view the details.

PLAN	FEATURES	PRICING
Beta trial	All the tooling you need to build, operate, and grow your blockchain solution.	\$0.14 per Virtual Processor Core Month
Standard	All the tooling you need to build, operate, and grow your blockchain solution.	\$0.14 per Virtual Processor Core Month

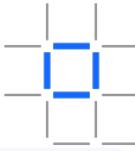
Add to estimate [Create](#)

2. Create your blockchain service instance

IBM



Starting with IBM Blockchain Platform for IBM Cloud



Blockchain Platform
IBM • IAM-enabled

Welcome to the fast, flexible way to build, operate, and grow blockchain solutions.

1. Go to the IBM Cloud console (cloud.ibm.com) and search the catalog for blockchain

Nodes

Name	Type	Owner	Status	Action
DVI Euro - 1	Peer	euroadmin	Patch available	IBM Cloud
DVI Euro - 2	Peer	euroadmin	Patch available	IBM Cloud
DVI Euro - 3	Peer	euroadmin	Patch available	IBM Cloud
DVI Euro - Test	Peer	euroadmin	Patch available	IBM Cloud
Add peer				+

Certificate Authorities

Name	Type	Owner	Status	Action
AP Credentials	Certificate Authority		Patch available	IBM Cloud
Dev Credentials	Certificate Authority		Patch available	IBM Cloud
Euro Credentials	Certificate Authority		Patch available	IBM Cloud
Staging Cred...	Certificate Authority		Patch available	IBM Cloud
Test Credentials	Certificate Authority		Patch available	IBM Cloud
US Credentials	Certificate Authority		Patch available	IBM Cloud
Add Certificate Authority				+

3. Create and attach an IBM Kubernetes Service cluster

Resource list: 1

Blockchain Platform 2.0-58

Resource group: default Location: Dallas [Add Tags](#)

Welcome & pre-requisites

Create cluster Optional

Deploy onto cluster

Launch console

Select the cluster to deploy IBM Blockchain Platform on:

Deploy to cluster →

Deploy the IBM Blockchain Platform on your IBM Kubernetes Service cluster

Select an IBM Kubernetes Service cluster

Choose your cluster carefully. While IBM Blockchain Platform is free for Beta, you will be charged for your IBM Kubernetes Service cluster.

This step can take up to 10 minutes to complete.

Images

Images can be screen captures, slides, or videos. Click an image to view the details.

Pricing Plans

PLAN	FEATURES	PRICING
Standard	All the tooling you need to build, operate, and grow your blockchain solution.	\$0.19/GB Virtual Processor Core Month

Monthly prices shown are for country or region: United States

Add to estimate Create

2. Create your blockchain service instance

Welcome to the IBM Blockchain Platform

IBM Blockchain Platform comprises this operational tooling console and a number of other elements. Hyperledger Fabric components are deployed on IBM Cloud and developer tools are used to create smart contracts and client applications. Hover over each part of the diagram to learn more.

Blockchain Platform

Hyperledger Fabric

Developer Tools

IBM Cloud

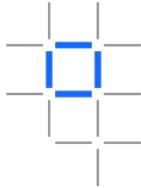
Let's get started

IBM

5. Success! Create or join networks, scale, customize, add HA...

...and you're on your way!

IBM can help you make your blockchain a success

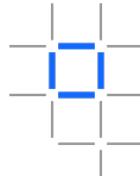


The collage includes:

- A whiteboard titled "#1 USE CASE IDEAS" listing various blockchain applications such as shared KYC / ID token, simplified onboarding, asset management, information exchange with Gov., signed document handling, digital vault provision, loyalty programs, and mutual investment clubs.
- A person writing on a wall covered with colorful sticky notes during a workshop.
- A screenshot of a "Business Value Assessment" spreadsheet. It details a problem with 90% of goods in global trade being delayed by the ocean shipping industry each year, and a solution involving managing and tracking a paper trail of tens of millions of shipping containers across the world. Participants include suppliers, couriers, customs, ports, shippers, and retailers. Asset & Trust involve need for trust around paperwork associated with a container. Transactions involve supplier preparing to ship, releasing container to courier, load to ship, clear customs, and retailer receipt. The spreadsheet also includes sections for Pain Points and Blockchain Design Points, along with a table comparing benefits benchmarks against baseline and Phase 1/2/3.

- Every **business** is different!
- IBM can help you with **all stages** of your blockchain network, for example:
 - Discovery workshop
 - Hands-on workshops
 - First Projects
 - Architectural Review
 - Services and Support
- Make use of the expertise located in the **IBM Garages** and in other locations worldwide

Continuing your blockchain journey...



Business Stakeholder

- Turn your blockchain strategy into **tangible** business outcomes.
- Request a **free** Discovery Workshop & talk to our experts

→ ibm.com/blockchain/services

Solution Architect

- **Learn** about blockchain use-cases and references
- **Find out** more about existing blockchain solutions
- **Join** an existing network

→ ibm.com/blockchain/use-cases

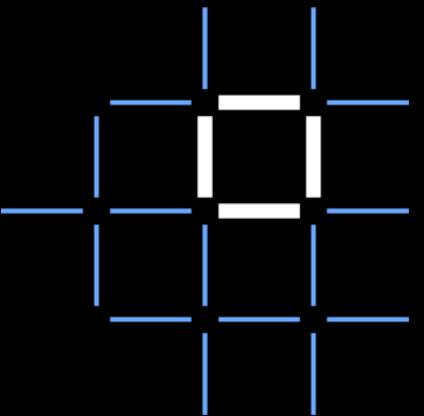
Developer

- **Learn** more about IBM Blockchain Platform
- Ready to start developing and testing? **Signup** and **try-out** the IBM Blockchain Platform

→ ibm.com/blockchain/platform

What's New

IBM Blockchain Platform is designed to provide you with best in class tools and support at every level of your blockchain maturity.



Ultimate Network Control

A totally redesigned management console that lets you maintain complete control of your network components, identities, ledger, smart contracts and data



Completely Customizable

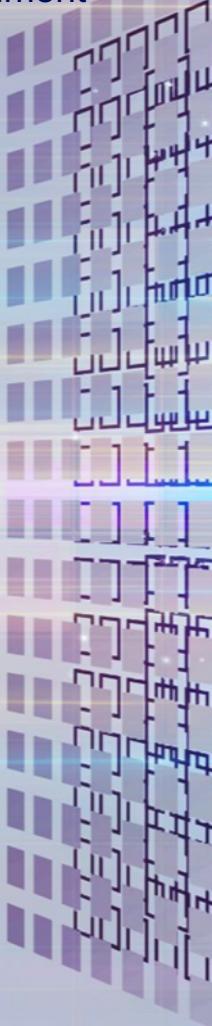
Deploy only the components you need, and even connect a single peer to multiple networks, to quickly join other industry networks



Same Environment at Scale

Now you can move from development to test to production in a single environment!

And our VSCode extension creates a seamless integration between smart contract development and network management



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Keyauri Kendrick
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IBM Hybrid Cloud Integration Software
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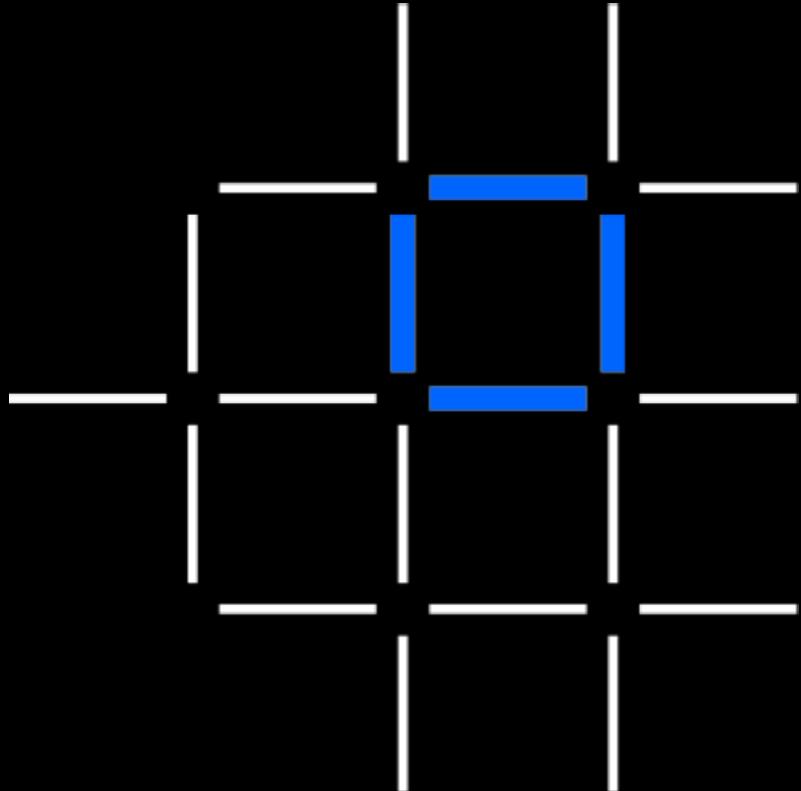
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*Questions? Tweet us or
go to ibm.com/blockchain*

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 IBM Blockchain

 IBM Blockchain





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