






IBM Blockchain Platform Explained

An Introduction to the IBM Blockchain Platform



Blockchain Explained Series

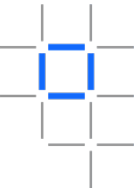
-  Blockchain Explained
-  **IBM Blockchain Platform Explained**
-  Solutions Explained
-  What's New
-  Labs Explained

V2.02, 6 June 2019

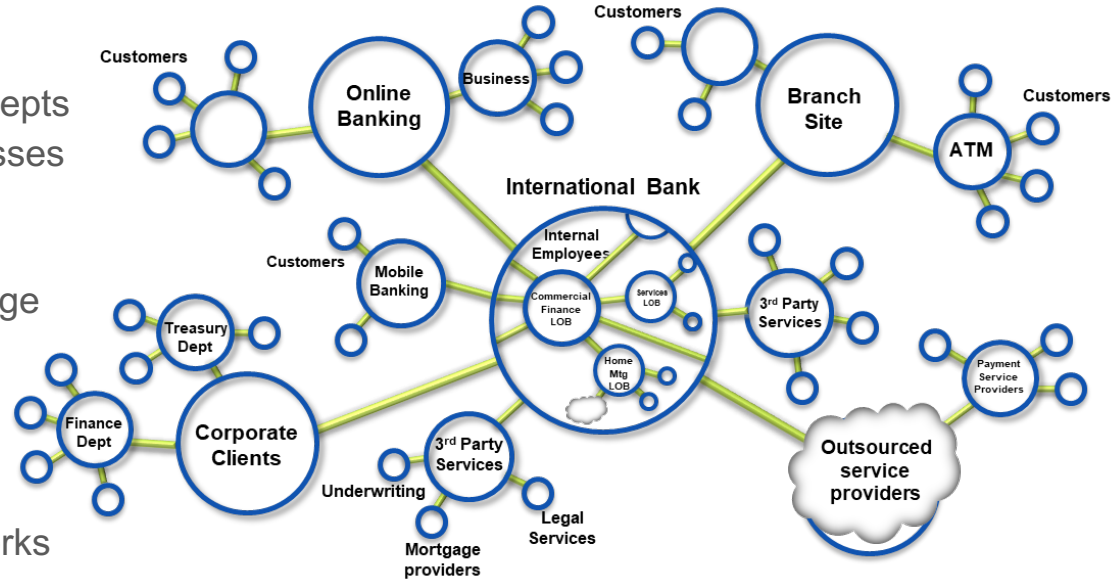
IBM Blockchain



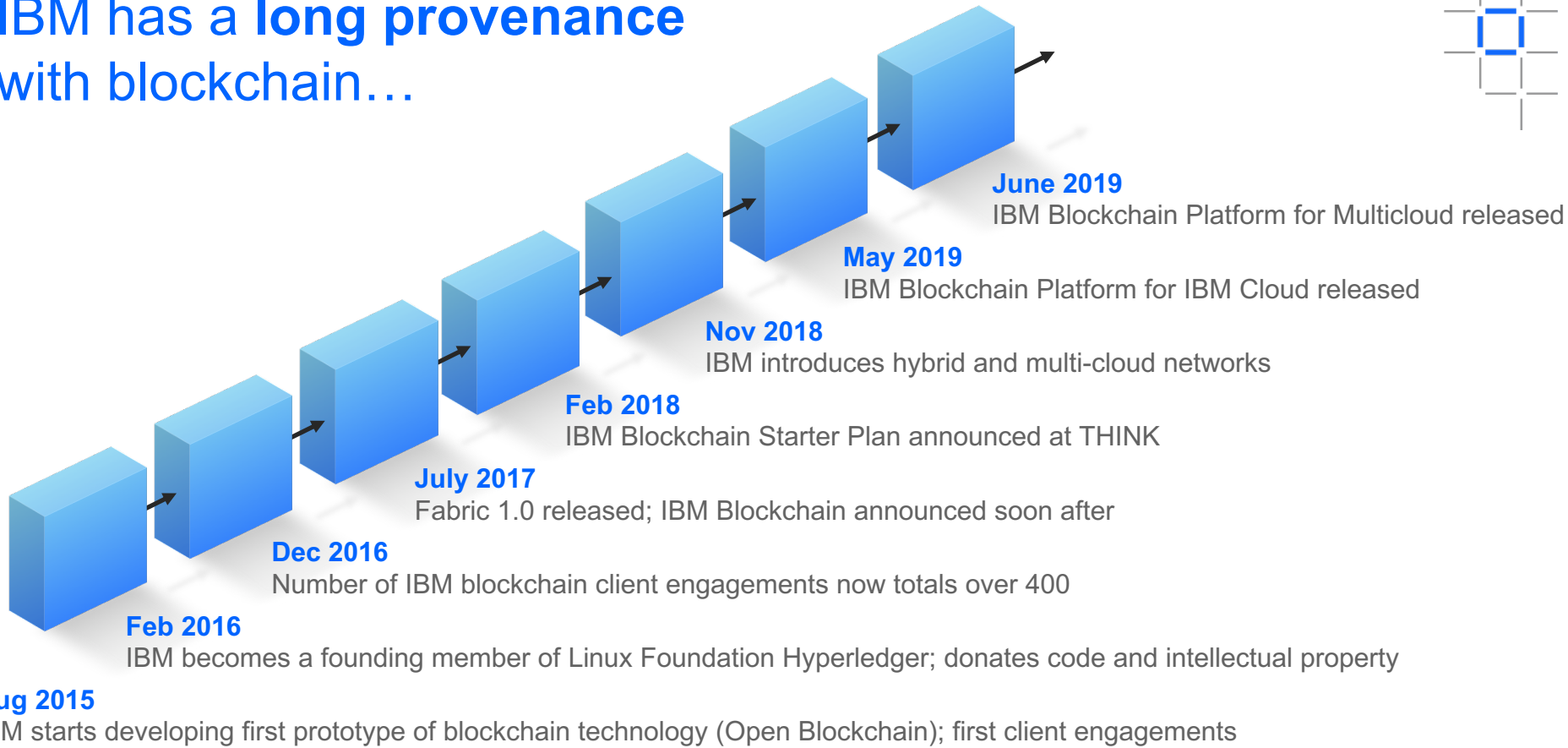
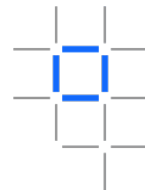
What is blockchain?



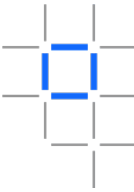
- Blockchain lets you build a decentralized **business network**
- Blockchain builds on basic business concepts
 - **Business networks** connect businesses
 - **Participants** with Identity
 - **Assets** flow over business networks
 - **Transactions** describe asset exchange
 - **Contracts** underpin transactions
 - The **ledger** is a log of transactions
- **IBM Blockchain Platform** allows you to build, operate and grow blockchain networks in heterogeneous environments



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

IBMers 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.



Unlisted Securities



Clearing & Settlement

Provenance



stellar



Bank Guarantees



Trade Finance



Universal Payments

BBVA



Global Trade

Healthcare



Belastingdienst



Food



Identity



Insurance



Smithfield



Government



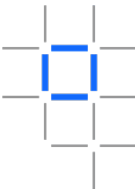
Distributed Energy



IBM Blockchain



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

IBM Blockchain Platform

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

Open technology
uses the popular
Hyperledger Fabric
distributed ledger

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



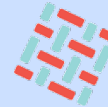
Build



Operate



Grow



**HYPERLEDGER
FABRIC**



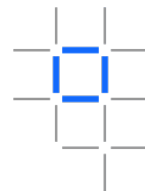
IBM Cloud

On-Premises

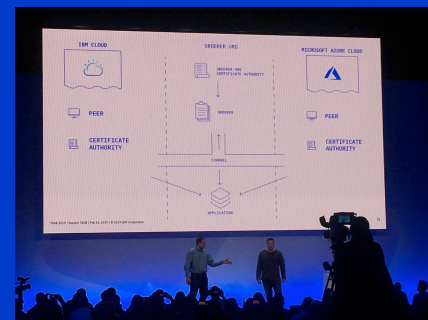
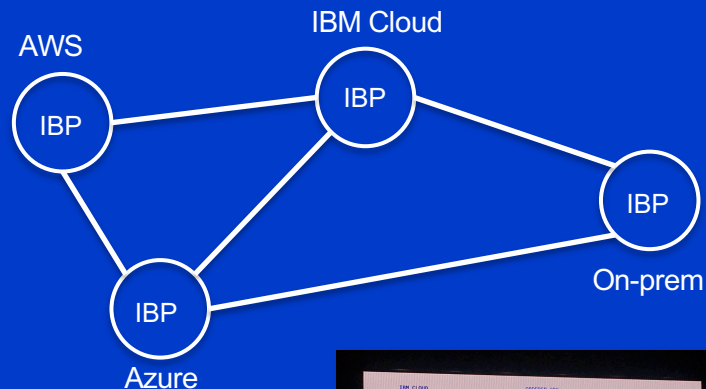
Other clouds



IBM Blockchain Platform: Deploy anywhere

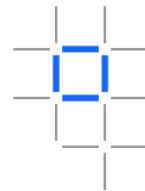


- IBM Blockchain Platform can be deployed wherever you want
 - **IBM Cloud** for a fully IBM-managed service
 - **On-premises** for greater deployment flexibility
 - In **other cloud providers** (e.g. AWS, Azure)
- **Fully heterogeneous**: different components can be deployed in different environments
- Caters for different vendor biases in the business network and **avoids lock-in**

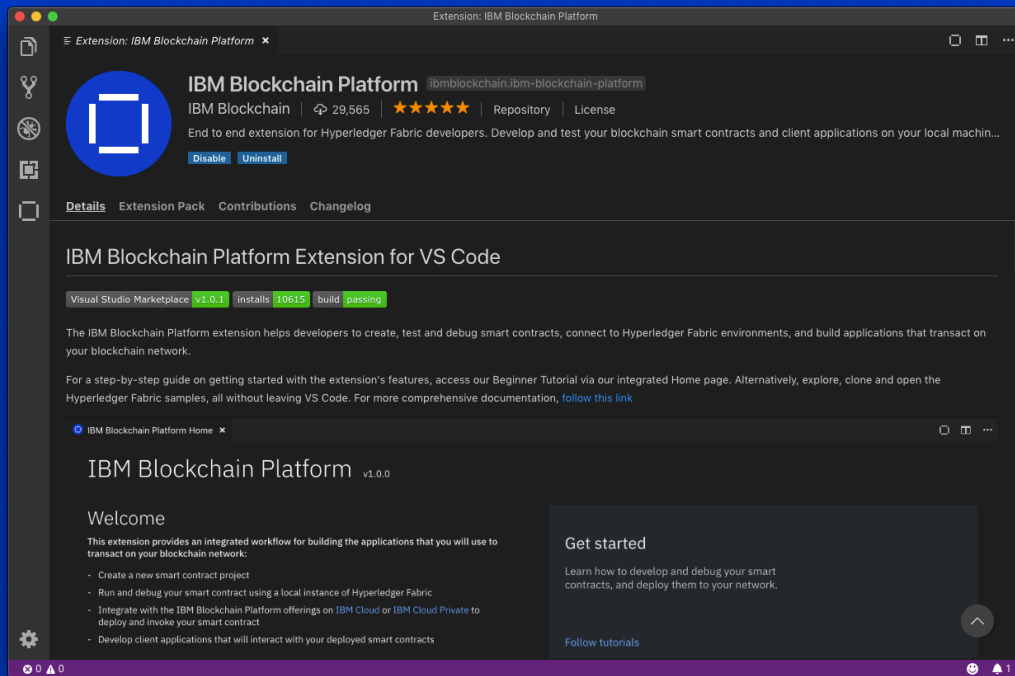




IBM Blockchain Platform's advanced tooling: Build

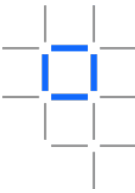


- Comprehensive developer tools for smart contracts and client applications, based on the popular **Visual Studio Code** environment
- Broad range of industry code samples and tutorials; smart contracts in JavaScript, TypeScript, Java and Go
- Simplified DevOps** allows you easily move from development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





IBM Blockchain Platform's advanced tooling: Operate



- 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

IBM Blockchain Platform

Euro Credentials

Get started

Root Certificate Authority | TLS Certificate Authority | Usage and info | Patch available

Certificate Authority (CA)

The root CA provides keys to your nodes and applications. Normally this is the CA you will use to create the identities that are required to deploy, operate, and interact with your network.

Registered users

Register user +

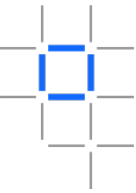
Enroll ID	Type	Affiliation
admin	client	
tester2@test.com	client	org1
tester3@test.com	client	org1
tester@test.com	client	org1
user2	client	org1

Cookie Preferences



IBM Blockchain Platform's advanced tooling:

Grow



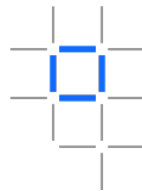
- Start small, pay as you grow for what you use with **no upfront investment** and upgrade easily through Kubernetes
- Easily connect** a single peer to multiple industry networks
- Connect to nodes running in any environment (on-premises, public, hybrid clouds)

The screenshot displays the IBM Blockchain Platform interface. The main content area is divided into several sections:

- Nodes:** A section with a 'Nodes' header and a 'Peers' sub-header. It contains four peer cards: 'DVI Euro - 1', 'DVI Euro - 2', 'DVI Euro - 3', and 'DVI Euro - Test'. Each card shows the peer name, 'Peer' role, 'euroadmin' user, and 'IBM Cloud' environment. A 'Patch available' button is present on each card.
- Certificate Authorities:** A section with a 'Certificate Authorities' header. It contains four CA cards: 'AP Credentials', 'Dev Credentials', 'Euro Credentials', and 'Staging Creden...'. Each card shows the CA name, 'Certificate Authority' role, 'euroadmin' user, and 'IBM Cloud' environment. A 'Patch available' button is present on each card. A fifth card, 'US Credentials', is partially visible at the bottom left, and a blue 'Add Certificate Authority' button is highlighted in the center.
- Notifications:** A sidebar on the right titled 'Notifications 7' showing a list of events from 'Today' (9 May 2019). The notifications include: 'Signature request submitted by euroadmin', 'New channel flexnettest2 created by euroadmin', 'New channel flexnetstagingus created by euroadmin', 'New channel flexnetstagingeuro created by euroadmin', 'New channel flexnetus created by euroadmin', 'New channel flexnettest created by euroadmin', and 'New channel flexneteuro created by euroadmin'. Each notification includes a timestamp and a 'View channel information' link.



Starting with IBM Blockchain Platform for IBM Cloud



Blockchain Platform

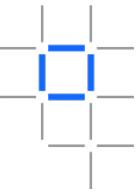
IBM • IAM-enabled

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



Starting with IBM Blockchain Platform for IBM Cloud



Blockchain Platform

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The screenshot displays the 'Images' section of the IBM Cloud console, which includes a carousel of images and a 'Pricing Plans' section. The pricing table is as follows:

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

Monthly prices shown are for country or region: United States

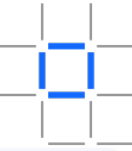
Quickly progress from development, to pilot, to production with a single plan that scales as you grow. Please note that you will be charged additionally for infrastructure and storage. File storage will be provisioned unless you change your Kubernetes storage preferences.

Buttons: Add to estimate, Create

2. Create your blockchain service instance



Starting with IBM Blockchain Platform for IBM Cloud



Blockchain Platform

IBM • IAM-enabled

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

Resource list / Blockchain Platform-gv

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

- 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 →

3. Create and attach an IBM Kubernetes Service cluster

Images

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

Pricing Plans Monthly prices shown are for country or region: united states

PLAN	FEATURES	PRICING
Basic	All the tools you need to build, operate, and grow your blockchain solution.	\$0.24 USD/Virtual Processor Core-Hour

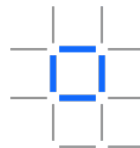
Quickly progress from development, to pilot, to production with a single plan that scales as you grow. Please note that you will be charged additionally for infrastructure and storage. File storage will be processed when you change your Kubernetes storage preferences.

[Add to cart](#) [Create](#)

2. Create your blockchain service instance



Starting with IBM Blockchain Platform for IBM Cloud



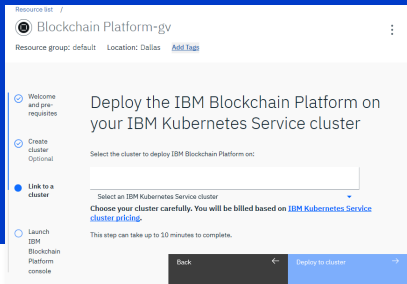
Blockchain Platform

IBM • IAM-enabled

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

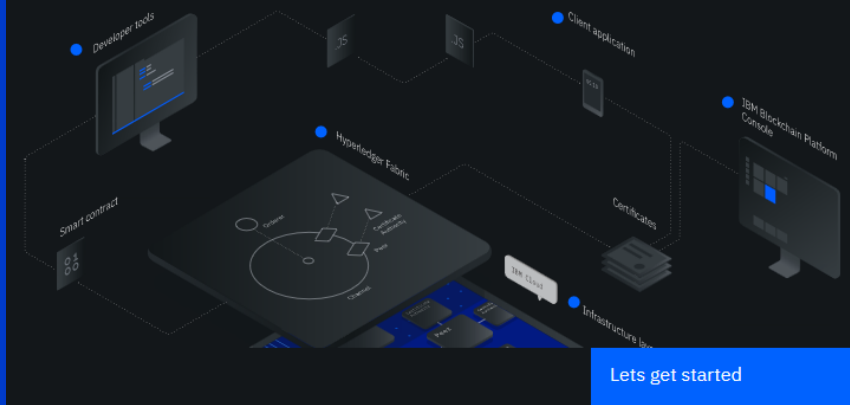
1. Go to the IBM Cloud console (cloud.ibm.com) and search the catalog for blockchain

3. Create and attach an IBM Kubernetes Service cluster



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.



4. Launch blockchain console

Images

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



Pricing Plans

Monthly prices shown are for country or region: United States

PLAN	FEATURES	PRICING
Basic trial		
Blockchain	All the tools you need to build, operate, and grow your blockchain solution.	\$0.24 USD/Virtual Processor Core-Hour

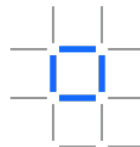
Quota: progress from development, to pilot, to production with a single plan that scales as you grow. Please note that you will be charged additionally for infrastructure and storage. The storage will be processed when you change your Kubernetes storage parameters.

[Add to cart](#) [Create](#)

2. Create your blockchain service instance



Starting with IBM Blockchain Platform for IBM Cloud



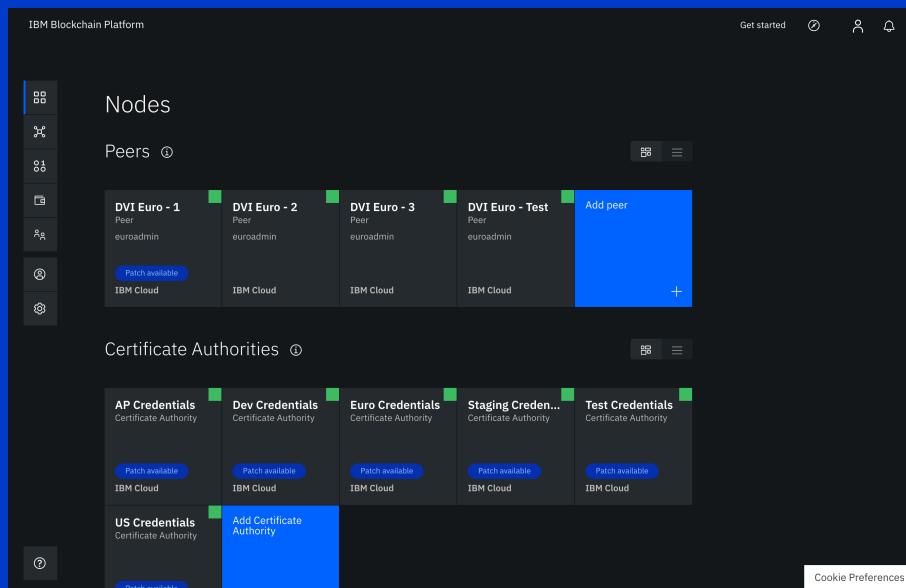
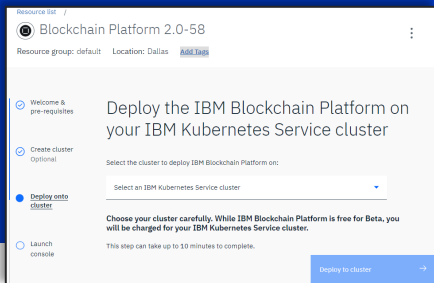
Blockchain Platform

IBM • IAM-enabled

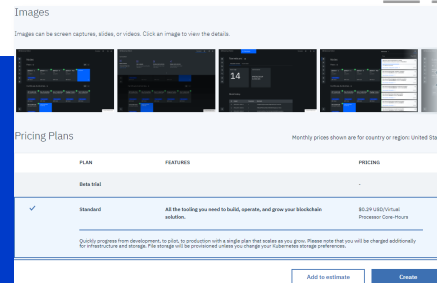
Welcome to the fast, flexible way to build, operate, and grow blockchain solutions.

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

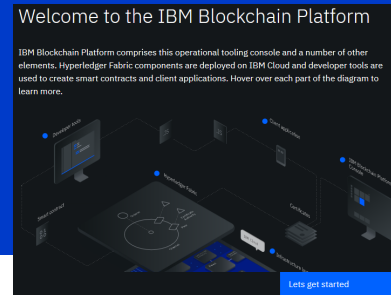


5. Success! Create or join networks, scale, customize, add HA...



2. Create your blockchain service instance

4. Launch blockchain console

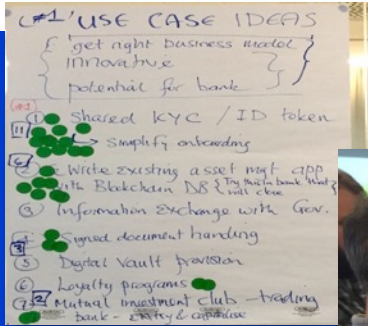
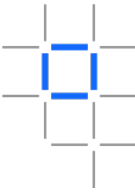


IBM Blockchain

...and you're on your way!



IBM can help you make your blockchain a success

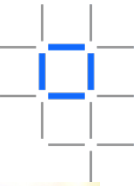


Business Value Assessment

Problem	90% of goods in global trade are carried by the ocean shipping industry each year. Costs associated with trade documentation processing and administration are estimated to be up to 20% the actual physical transportation costs.	Solution	Manage and track the paper trail of tens of millions of shipping containers across the world by digitizing the supply chain process.	Participants	Supplier, carriers (C1), customs (C2), ports (C3), shipper and retailer...	Asset & Trust	Need for trust around paperwork associated with a container.	Transactions	Supplier prepares to ship, release container to carrier, load at ship, clear customs, retailer receipt.	Pain Points	<ul style="list-style-type: none"> Transportation is highly diverse. Shipping information must pass through multiple parties. One shipment can require significant communications. One set form is not approved by all. The entire process can take weeks. Fraudulent changes may be made.
Benefits benchmarks - Value Tree		Baseline	Phase 1	Phase 2-3	Blockchain - Deep Points						
New revenue	# new value propositions	-	-	1 to 3	- Find new value propositions to engage the network of all network members.						
Improve Client experience	Increase in customer satisfaction	-	+5%	+10%	- Securely and transparently trace the container's path through the supply chain on the blockchain.						
	Increase in trade volumes	-	+5%	+10%	- Add trust (Open-ability and Provenance) around the B/Ls and other customer paperwork.						
Reduce transport costs	Cycle times (transit & shipping)	30 days	25 days	15 days	- Automate the transit and shipping process with Smart Contracts, reducing cycle times and delays.						
	Waste as % of total shipped	6%	5%	1%	- No reconciliation or reworking of documentation with new return capabilities, eliminates the need for audit and verification.						
	Fraud and errors as % of total costs	5%	4%	0.5%	- Removes paper and reinteraction.						
	Documentation admin. as % of total costs	20%	15%	5%							

- 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 **Blockchain Labs** 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

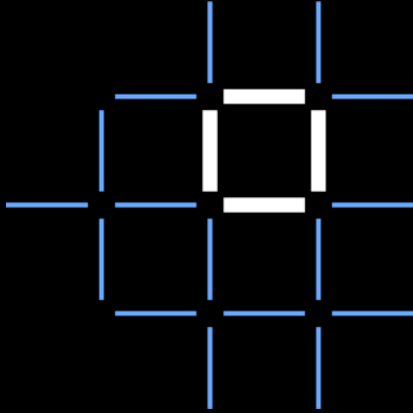
- **Learn** more about IBM Blockchain Platform
- Ready to start developing and testing? **Signup** and **try-out** the IBM Blockchain Platform



ibm.com/blockchain/platform

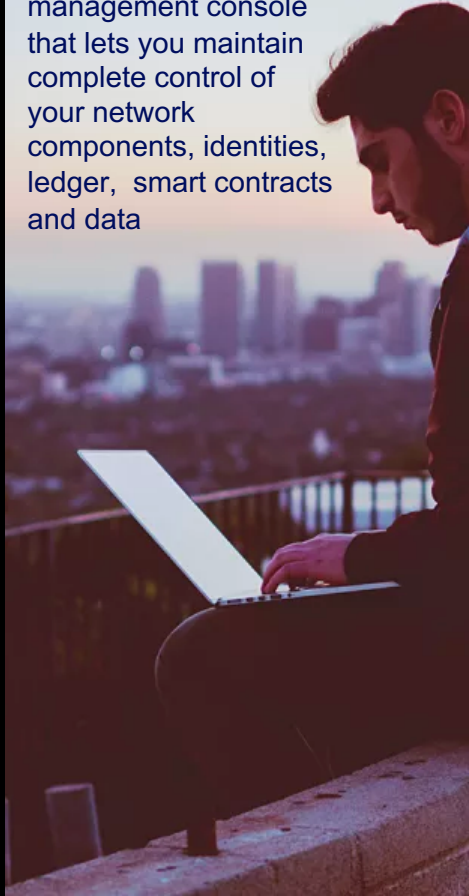
What's New

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

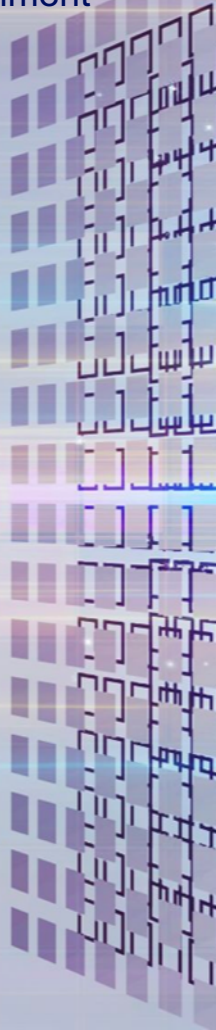
Deploy only the components you need, and even connect a single peer to multiple networks, to quickly join other industry networks



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




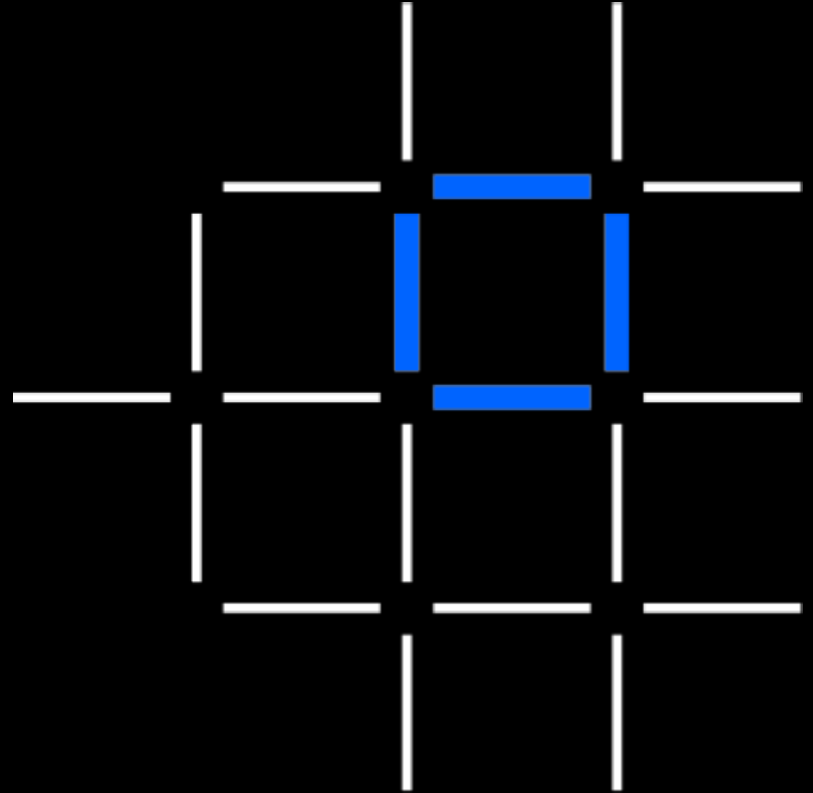
Thank you

*Questions? Tweet us or
go to ibm.com/blockchain*

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