Introducing Hyperledger

Open source collaborative effort to advance cross-industry **blockchain technologies**

Hosted by **The Linux Foundation,** fastest-growing project in LF history

Global collaboration spanning finance, banking, IoT, supply chains, healthcare, manufacturing, technology and more.

HYPERLEDGER
BLOCKCHAIN TECHNOLOGIES FOR BUSINESS

Hosted By The Linux Foundation

For the last 16 years, The Linux Foundation® has provided unparalleled support for open source communities through financial and intellectual resources, governance structure, IT infrastructure, services, events, and training.

Dedicated to building sustainable ecosystems around open source projects, The Linux Foundation is working with the global technology community to solve the world's hardest problems through open source and **creating the largest shared technology investment in history**.

The Linux Foundation is the umbrella organization for **more than 60 open source projects** accelerating open technology development and commercial adoption. Some of the game-changing initiatives hosted by The Linux Foundation include:

> "The Linux Foundation has achieved an unbelievable feat in bringing together a community of traditionally competitive institutions. To facilitate such extensive collaboration between startups, financial and nonfinancial corporations and technology giants is an enormous win for the whole distributed ledger industry as firms look to leverage mutually beneficial code for the common good."

– *Blythe Masters*

CEO, Digital Asset,
Governing Board Chair, Hyperledger
The Linux Foundation 2016 Annual Report

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OCTOBER 2015

Bloomberg Markets

IT'S ALL ABOUT THE

BLOCKCHAIN

BLYTHE MASTERS IS BETTING THE DIGITAL LEDGER BEHIND BITCOIN WILL REVOLUTIONIZE THE WAY WE TRADE BONDS, LOANS, DERIVATIVES, AND MUCH ELSE.

THE INNOVATORS

BRAD KATSUYAMA'S NEXT CHAPTER

A BANK FOR PEOPLE WHO HATE BANKS

WHO WANTS TO START AN ETF?

A HUNDRED APPS BLOOM IN CHINA

Shared Ledger Database

Blockchain allows multiple different parties to securely interact with the same universal source of truth

Finance

Streamlined settlement, improved liquidity, increased transparency and new products/markets

Healthcare

Unite disparate processes, increase data flow and liquidity, reduce costs and improve patient experience and outcomes

Supply Chain

Track parts and service provenance, ensure authenticity of goods, block counterfeits, reduce conflicts

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Hyperledger Goals

Where open source teams build diverse approaches for business blockchain technology systems

Create enterprise grade, open source, distributed ledger frameworks & code bases

to support business transactions
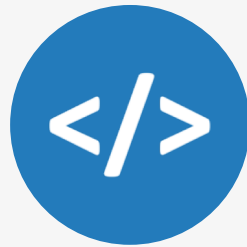
Provide neutral, open, & community-driven infrastructures

supported by technical and business governance

Build technical communities

to develop blockchain and shared ledger POCs, use cases, field trials and deployments

Educate the public

about the market opportunity for blockchain technology

Promote our community of communities

taking a toolkit approach with many platforms and frameworks

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Hyperledger Modular Approach

Infrastructure
Technical, Legal, Marketing, Organizational

Ecosystems that accelerate open development and commercial adoption

THE **LINUX** FOUNDATION

Cloud Foundry	Node.js	**Hyperledger**	Open Container Initiative

Frameworks

Meaningfully differentiated approaches to business blockchain frameworks developed by a growing community of communities

Hyperledger **Indy**	Hyperledger **Fabric**	Hyperledger **Iroha**	Hyperledger **Sawtooth**	Hyperledger **Burrow**

Tools

Typically built for one framework and ported to other frameworks through common license and community approach

Hyperledger **Quilt**	Hyperledger **Composer**	Hyperledger **Explorer**	Hyperledger **Cello**	Hyperledger **Caliper**

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Hyperledger Business Blockchain Frameworks

- **Hyperledger Fabric**: Intended as a foundation for developing applications or solutions with a modular architecture, Hyperledger Fabric allows components, such as consensus and membership services, to be plug-and-play.
- **Hyperledger Iroha**: A business blockchain framework designed to be simple and easy to incorporate into infrastructural projects requiring distributed ledger technology.
- **Hyperledger Sawtooth**: A modular platform for building, deploying, and running distributed ledgers. Hyperledger Sawtooth includes a novel consensus algorithm, Proof of Elapsed Time (PoET), which targets large distributed validator populations with minimal resource consumption.
- **Hyperledger Burrow**: A permissionable smart contract machine. The first of its kind when released in December, 2014, Burrow provides a modular blockchain client with a permissioned smart contract interpreter built in part to the specification of the Ethereum Virtual Machine (EVM).
- **Hyperledger Indy**: Tools, libraries, and reusable components for providing digital identities rooted on blockchains or other distributed ledgers so that they are interoperable across administrative domains, applications, and any other silo.

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Hyperledger Technical Scope

Out of Scope	Custom Applications	App Layer
	API libraries and GUIs Specialized consensus algos Membership policies Gateway Operations dashboard	**Value Added Systems**
In Scope	Core APIs	**Core APIs**
	Code execution environment Ledger data structures Modular consensus framework Modular identity services Network peers	**Shared Ledger**

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Leadership

"

2016 was full of growth for the organization and community. Not only did we exceed 100 members, Hyperledger met significant development milestones across our several Umbrella projects, thanks to the community's hard work. As 2016 was a year of exploration, R&D and prototyping, we're excited for 2017 to be the year we start to see case studies of Hyperledger Business Blockchain Technologies in production environments."

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Brian Behlendorf
Executive Director

Apache Web server – Primary developer

Apache Software Foundation – Founding member

Mozilla Foundation – BOD since 2003

Electronic Frontier Foundation – BOD since 2013

CollabNet – Founding CTO

World Economic Forum – CTO

Most recently, managing director at **Mithril Capital Management LLC**, a global technology investment firm

Governing Board

Comprised of one voting representative from each Premier Hyperledger member and attended by the TSC and Marketing Committee Chairs, the Governing Board's responsibilities include:

- Approving a budget

- Electing a Chair to preside over Governing Board meetings, authorize expenditures approved by the budget and manage any day-to-day operations

- Overseeing all Project business and marketing matters

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Blythe Masters

Governing Board Chair

Digital Asset – CEO

Digital Asset builds distributed, encrypted straight through processing tools to improve efficiency, security, compliance and settlement speed.

Blythe was previously a senior executive at J.P. Morgan, which she left in 2014 after a career spanning 27 years, following the successful sale of the bank's physical commodities business which she built.

Named J.P. Morgan's head of Global Commodities in 2007, Blythe was responsible for building an integrated physical and financial commodity business, including market-making, structuring, risk management, financing and warehousing capabilities across the full spectrum of commodity asset classes.

Technical Steering Committee

The TSC is the technical governance heart and soul of the project. As new code bases get contributed to the project they get reviewed and approved by this committee.

Committing members appoint and vote the TSC Chair annually.

Meets weekly on Thursday, 10:00 AM to 11:30 AM ET

All are invited to attend these calls and encouraged to join the TSC mailing list for more information:

https://lists.hyperledger.org/mailman/listinfo/hyperledger-tsc

![HYPERLEDGER — BLOCKCHAIN TECHNOLOGIES FOR BUSINESS]

Chris Ferris

TSC Chair

IBM Distinguished Engineer and CTO Open Technology in the IBM Cloud organization

Involved in the **architecture, design, & engineering of distributed systems** for most of his 36+ year career

Actively engaged in open standards and open source development since 1999

Overall technical responsibility for all of IBM's strategic open technology initiatives, including **OpenStack, Cloud Foundry, Hyperledger Project, Open Container Initiative, Cloud Native Computing Foundation, Mesos, Node.js, Docker**, and more

Marketing Committee

The Hyperledger Marketing Committee is open to all Hyperledger members and is charged with defining and executing the marketing and outreach strategy.

MC- Meets every other Tuesday 10:00 AM to 10:30 AM PT

To date, the Committee has established these standing Working Groups – PR, Messaging & Events – member only by request/invitation.

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Dan O'Prey

Marketing Committee Chair

Digital Asset – CMO

Dan was the co-founder and CEO of Hyperledger, a San Francisco-based technology firm that developed an innovative distributed ledger to allow financial institutions to clear and settle transactions in real-time.

Hanna Zubko

Marketing Committee Vice Chair

IntellectEU – CEO

Hanna Zubko has over 10 years of experience in technology for the financial services industry.

She is the founder of IntellectEU, an integration and development company,

Additional Community Working Groups

Working Groups are open to the public

Technical Working Group, China (TWG - China)	**Requirements Working Group**	**Identity Working Group**
Architecture Working Group	**Whitepaper Working Group**	**Healthcare Working Group**

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Hyperledger Momentum

190+
Members
(30+ in China)

10
Hyperledger
projects

2
Production 1.0
releases

3.6M+
Lines of Code

47K+
Commits

Hosted the most popular webinar in history of The Linux Foundation on Hyperledger Fabric v1.0

77K+
Enrolled in 1st Edx
course
(2k+ completed)

10
Active Community
Working Groups

40K+
Twitter Followers

1.5K+
Avg. monthly press
mentions in 2017

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15

Community and Ecosystem Engagement

Behlendorf is a regular keynoter and Hyperledger exhibits at cross-industry events.

Hyperledger Member Summit and first annual Hyperledger Global Forum.

Active engagement with technology and finance journalists and analysts to continue educating the market on Hyperledger. hyperledger.org/news

Technical Steering Committee hosts regular online and face-to-face hackathons. Join our mailing lists to learn about these and other technical activities. hyperledger.org/community

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Hyperledger Global Meetups
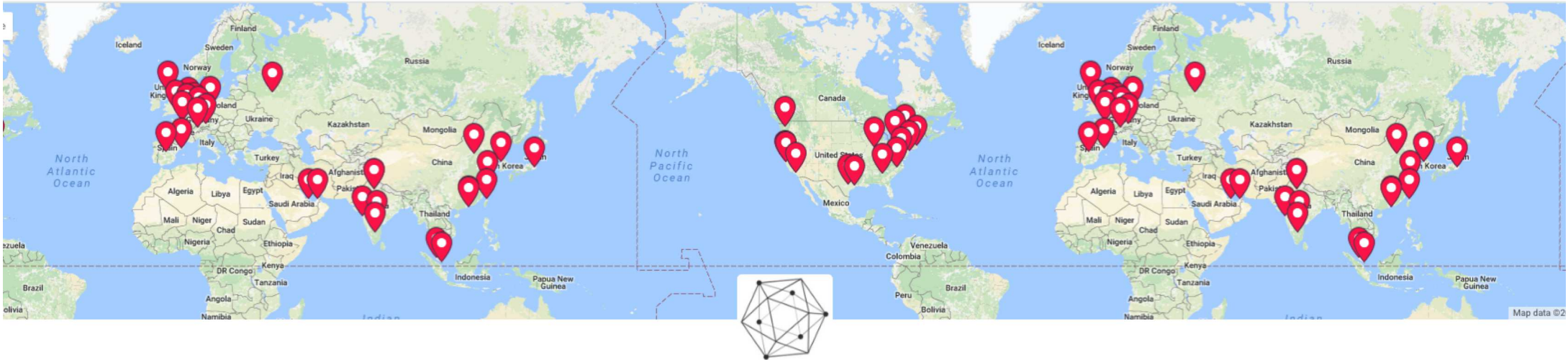
Hyperledger Meetups

We are **28k+** **members** across **110+** **Meetups**

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Join Your Industry Peers

Hyperledger Premier Members Serving on the Governing Board.

Join Your Industry Peers

General Members

8base
8Common
ABN Amro
Aetna
Agavon
AlphaPoint
Altoros Americas LLC
Aktsiaselts Eurostep Digital
AMIHAN Global
ANNE
ANZ
ArcBlock
B9lab
BBVA
Beijing Botuzongheng
  Science & Technology
  Co., Ltd.
Beijing RZXT Technology
  Development
Beijing Truth Technology
Beijing Xiaomi Mobile
  Software
Belink Technologies
Bitmark
BitSE
Blockchain
Blockchain Technology
  Partners
Blockchain Training Alliance
BLOCKO Inc.
Bloq

BNP Paribas
Broadridge Financial
  Solutions
BTS
CA Technologies
Calastone
Capgemini
Centra Tech
ChainNova
China Merchants Bank
China Minsheng Bank
CITIC
Clause, Inc
Cloudsoft Corporation
  Ltd.
CLS Bank International
CME Group
Cognition Foundry
Coinplug
CollectorIQ Inc.
CULedger
Data Deposit Box
Dealer Market Exchange
Deloitte Consulting LLP
Deutsche Börse Group
DLT Labs
Easy Visible Supply Chain
  Management
EBPI BV
Elementrem
Eli Lilly & Company

Embleema
Energy Blockchain Labs
Ernst & Young
Factom Foundation
Filament
FORFIRM
ForgeRock
FZG360 Network Co. Ltd
GameCredits
Gem
Gibraltar Stock Exchange
  (GSX)
Global Blockchain
  Technologies
Global Peersafe
  Technology Corp.
GM Financial
Greenstream Technology
Guardtime
GXChain
Hangzhou Fuzamei
  Technology
Hashed Health
Huawei
Hyperchain Technologies
Information Builders
Inspur
IntellectEU
Kaiser Permanente
KompiTech
Korea Exchange

Korea Security Depository
Koscom
KrypC Corp
LedgerDomain
Libra
Loyyal Corporation
Lykke
MadHive
Majid Al Futtaim
MATRIX Foundation
Medicalchain
MetaX
MIRACL UK Limited
Monax Industries Limited
MonetaGo
Moscow Exchange
Murphy & McGonigle,
  P.C.
National Stock Exchange
  of India
New H3C Technologies
NEX Optimisation
Nexiot
Norbloc
NTT Data
Oracle
Orange Magic Cube
Patientory
Paxos
PetroBloq
PDX Technologies

Pravici
PwC
R3
RadarWin Cyber
  Technology
Red Hat
REMME
Revelry Labs
Ripple
Robert Bosch
Samsung SDS
Sberbank
ScanTrust SA
Schroder Investment
  Management Limited
SecureKey Technologies
~sedna GmbH
Sempre IT
Shanghai Ginkoo
  Financial Technology
Shanghai Onechain
  Information
  Technology
Shenzhen Forms Syntron
  Information Shenzhen
Shenzhen Rongxun
  Technology
Sinolending Ltd
Smart Block Laboratory
Smartchains
Smart Link Lab

Soramitsu
Spin Systems
State Street
SWIFT
Swisscom AG
Tai Yi Yun
Tencent Cloud
Thales
Thomson Reuters
TMX Group Limited (TSX)
TradeIX Limited
Turkcell
United Traders
Versia
VitalHub Corp.
VMware
Wipro
Xiilab Co.
Xinguodu
  Technology CO., LTD
YDreams Global
Yuphant Blockchain
Zhejiang Shuqin
  Technology
Beijing Smart Card
  Technology Research
  Institute
Ziggurat Technology

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Associate Members

Accord Project
Bank of England
Blockchain Research
    Institute
Cambridge Centre for
    Alternative Finance
    (University of Cambridge)
Chamber of Digital
    Commerce
Cloud Security Alliance
Colored Coins
IC3
IFSE
Infrachain
Kerala Blockchain Academy
Mercy Corps
Ministry of Finance of the
    Republic of Lithuania
Nxt Foundation
OSCRE
Peking University
Produce Marketing
    Association
ShareIT.io
Sovrin Foundation
Smart Dubai Office
Taiwan Fintech
    Association
Tecnalia Research &
    Innovation

TNO
University College London
University of Luxembourg
University of Rome Tor
    Vergata/Inuit
    Foundation
Vilnius Gediminas Technical
    University
VSP Global
Zhejiang University
The Illinois Blockchain
    Initiative

View the complete list of Hyperledger members.

Get Involved!

Ensure the strength and longevity of a core technology to your business.

Publicly proclaim your leadership in the blockchain space.

Work with other blockchain leaders to develop and promote Hyperledger blockchain for business technologies.

Visit hyperledger.org/about/join
or email info@hyperledger.org.