



BIX Ledger

Secure, Distributed Ledger for
Blockchain Applications

**BIX LEDGER
DELIVERS TRUST,
SECURITY, AND
SCALABILITY TO
BLOCKCHAIN
APPLICATIONS. IT IS
THE ONLY TRULY
PEER-TO-PEER
BLOCKCHAIN
PLATFORM.**

BLOCKCHAIN FOR FINTECH & ENTERPRISE

BIX Ledger is a fully distributed, customizable ledger platform developed for the needs of the financial and enterprise markets. Unlike many other blockchains which are still in a white-paper stage, BIX Ledger is fully operational on a worldwide secure infrastructure. The platform has numerous security certifications and has been vetted by numerous academic computer and network security researchers.

NO HASH CHAINING OR THIRD-PARTY MINERS

A distinguishing feature of the BIX Ledger is its ability to validate transactions and secure trust without the need of third-party miners. Furthermore, the platform ensures immutable records and transactions without blocks or hash chaining. The transactions in BIX Ledger are validated instantly and executed with no delays.

BIX Ledger’s patented design and architecture address the weaknesses of the existing blockchain solutions while securing the trust on the platform and the anonymity of transactions on the blockchain. Depending on the application need, the BIX Ledger can run in either a permissioned or unpermissioned mode. This secure hybrid design of the ledger ensures the platform can be customized for any type of deployment and use-case.

BIX Ledger delivers on the promise of the Blockchain economy - frictionless, secure, cost effective, distributed platform for exchange of goods and services without the need of trusted third parties.



BIX LEDGER WAS DEVELOPED SPECIFICALLY TO ADDRESS THE INHERENT DESIGN FLAWS OF THE EXISTING BLOCKCHAINS SOLUTIONS SUCH AS BITCOIN-BLOCKCHAIN, ETHEREUM, HYPERLEDGER, RIPPLENET, AND OTHERS.



BIX LEDGER SECURITY

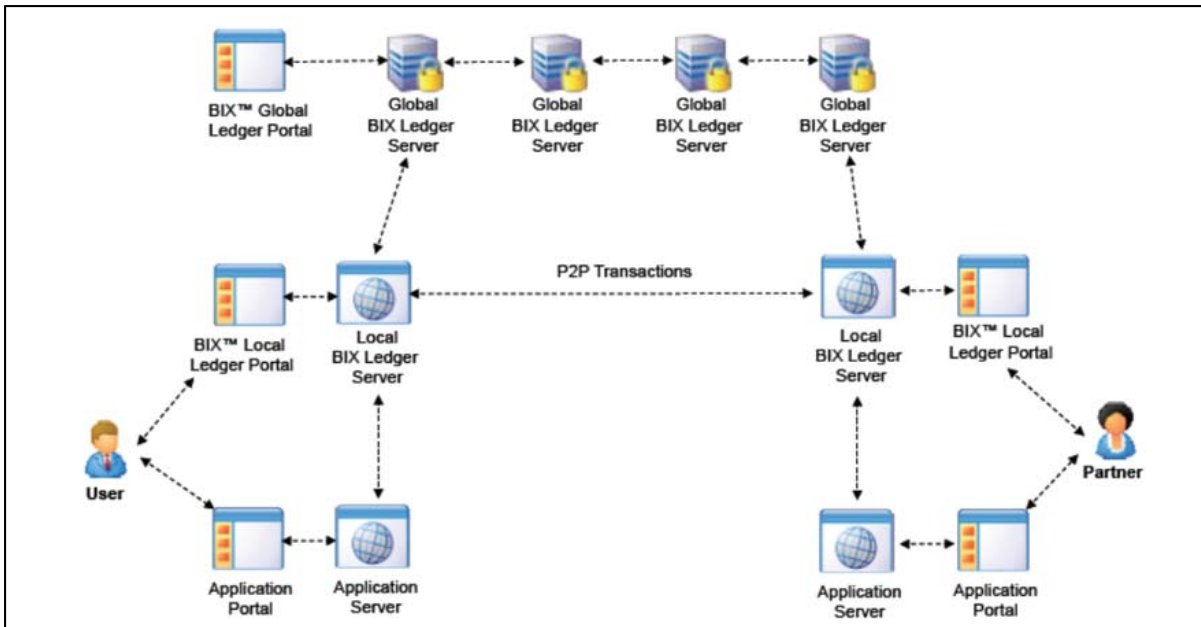
BIX Identities and Certificates form the core of the BIX Ledger security infrastructure. The BIX Identities are used by parties to verify that intended and correct counter parties are participating in the transaction. The identities are encoded and cryptographically encapsulated using government-certified strong encryption algorithms.

The ledger performs an accurate and reliable validation of identities of the parties engaged in a transaction **without assistance of trusted third parties.**



BIX LEDGER INFRASTRUCTURE

BIX Ledger infrastructure is comprised of two layers. Global BIX Ledger servers (currently deployed at 11 locations worldwide) form the back-bone of the platform. Additional Global ledger servers can be added quickly to handle any level of transaction volumes. These servers are fully synchronized and fault-tolerant ensuring guaranteed uptime and near-instant execution of any transactions on the ledger which require communication to or from the Global BIX Ledger servers.



Individual, Local BIX Ledgers can be deployed on premises or in the cloud and are used to support the local instances of enterprise applications that use the Ledger. With BIX Ledger supporting true peer-to-peer transactions, the majority of transactions between parties can and do happen on the local Ledger, without the involvement or the need to communicate with the global BIX Ledger servers. This makes the

HORIZONTAL AND VERTICAL SCALABILITY

BIX Ledger's platform architecture makes it easy to scale to handle any number of transactions. A true peer-to-peer design and implementation of the system creates virtually unlimited throughput – since all transactions are executed on a peer to peer basis there is no network congestion or throughput issues.

Depending on the use case and your application requirements, we can install a single or multiple clusters of the BIX Ledger to ensure optimum performance and minimal infrastructure costs.



BIX LEDGER CORE BENEFITS

BIX Ledger infrastructure is comprised of two layers. Global BIX Ledger servers form the back-bone of the platform. Additional Global ledger servers can be added quickly to handle any level of transaction volumes. The servers are fully synchronized and fault-tolerant ensuring guaranteed uptime and near-instant execution of any transactions on the ledger which require communication to or from the Global BIX Ledger servers.

1. SECURE

The triple-helix security layer, government-level security certifications, and best-in-class cryptography. BIX Ledger is the most secure blockchain platform, bar none. With so many security breaches and vulnerabilities reported with traditional blockchains currently on the market, none of these can be applied in financial industry or enterprises which require the highest levels of security.

2. SCALABLE

Many other blockchain solutions claim peer-to-peer design, but look beyond the scenes and discover they are based on centralized architecture. BIX Ledger is a true peer-to-peer platform, the transactions between two parties are made with direct connection between them. The native peer-to-peer design of BIX Ledger enables it to scale horizontally and vertically, and handle any volume of

3. INTEROPERABLE

Current Blockchain platforms like Bitcoin-based Blockchain, Ethereum, Hyperledger, RippleNet do not have the ability to communicate with one another. BIX Ledger is interoperable with BTC Blockchain right out of the box, and with customizations and APIs it can be made interoperable with any other blockchain platform.

4. OPERATIONAL

BIX Ledger infrastructure is operational and tested. Unlike other commercial Blockchain projects which are at a White-paper stage or a “non-working prototype stage”, BIX Ledger is operational, tested, and ready for any financial institution or enterprise deployments.

BUILT-IN SMART CONTRACTS SUPPORT

Similar to Ethereum, BIX Ledger supports execution of Smart Contracts on its blockchain. Unlike Ethereum’s smart contracts, however, the BIX Ledger’s implementation of smart contracts is secure, reliable, and tamper-proof. BIX Ledger infrastructure supports complex multi-party, multi-documents and multi step applications with protocols for resolution of business conflicts.

The peer-to-peer architectural approach to designing the BIX Ledger infrastructure and protocols makes BIX Ledger the ideal platform for supporting smart contracts.

BIX Ledger is the only business-ready, security-conscious smart contract platform.

Combined with the strongest cryptography support and unmatched security features, the smart contracts are ready for business on the BIX Ledger platform.



PEER-TO-PEER TRANSACTIONS. NO CHAINS, NO MINERS

Other blockchain platforms fall short in one or more aspects of the true blockchain – they either require third party involvement in validating transactions or they require some level of centralized authority which negates the idea of transactions being truly peer to peer. BIX Ledger's transactions are truly peer-to-peer.

BIX Certificates

BIX certificates are cryptographic tokens for anonymous transactions based on certificate public ledger. With BIX Certificates users' public keys can still be distributed to their transaction partners, but identities of users are hidden even from BIX Servers.

BIX Identities

BIX Identity Management System controls the security of members on the BIX Ledger. BIX Identities are verifiable by the parties participating in the transactions yet the true identities themselves remain protected in the system.

The BIX Certificate verifies all digital signatures by the entities in the transaction and is used to extract the Ledger Server's public key. The BIX Identities are used by parties to verify that the intended counter parties are participating in the transaction. BIX Identities are encoded and cryptographically encapsulated using strong encryption algorithms.

Finally, the public keys from BIX Certificates are used by recipients to open digital envelopes of objects which they are authorized to open & use. The end result is a secure, reliable peer-to-peer transaction without any third-party involvement. A true promise of blockchain - realized!

Theft of private keys is a significant vulnerability with other blockchains. If someone steals your private key, they can impersonate you and execute transactions on your behalf (in all likelihood, malicious transactions).

BIX Ledger's PKI never stores or exposes private keys that correspond to public keys in certificates. This means that the risk of theft of private keys and impersonating users is eliminated.



BIX LEDGER USE CASES

BIX Ledger platform is live and operational. Benefit from the worldwide network of ledger servers, or get a custom-designed BIX Ledger solution for your enterprise. Our team can customize the deployment and the functionality according to your business needs.

As the most secure Blockchain platform on the market today, BIX Ledger is best suited for Enterprise applications which Require the highest level of Network and blockchain security.



DEPLOYMENT EXAMPLES

We are working with many institutions around the world to customize and deploy BIX Ledger instances to serve their blockchain applications.

- A European Venture Fund will use BIX Ledger to track virtual services and assets tokens for their investments
- A technology company in Gibraltar will use BIX Ledger to provide secure identities and protection of users' personal data
- A South African Real Estate company will use BIX Ledger for transactions with real estate asset tokens
- A US-based payments company will use BIX Ledger to manage payment tokens with consumers for donations and remittance
- A European secure email company provider will use BIX Ledger to provide Identities and Certificates for users.
- A European company managing drug clinical trials enrollment will use BIX Ledger to provide GDPR to members
- A US Blockchain-based company will use BIX Ledger to provide security for their loyalty tokens
- A US Real Estate company will use BIX Ledger for security services of their investment system for real estate properties
- An Asian FinTech company will use BIX Ledger to establish secure assets settlement platform
- A European Financial Provider will use BIX Ledger to validate micro payments for their m-tethering platform
- A European Travel Services provider will use BIX Ledger ledger for their hotel booking, payments and loyalty rewards program



BIX SYSTEM CORP, BLOCKCHAIN EXPERTS

BIX System Corp, the company behind BIX Ledger, assembled a team of foremost experts in the areas of computer security and distributed networks. Decades of academic research and practical network security implementations led the BIX System team to design and architect the world's most secure and most capable blockchain platform, BIX Ledger. BIX Ledger's architecture and design is protected by several US patents by the company's founder, Dr. Sead Muftic.



Dr. Sead Muftic, Founder & CEO

Dr. Muftic is an entrepreneur and an internationally-recognized expert in the area of IT security. He has been full professor at The Royal Institute of Technology in Stockholm, Sweden and a visiting professor at the George Washington University in Washington, DC. Dr. Muftic is registered as an International Expert for security of blockchain technologies and virtual currencies by the European Commission and as the visiting scientist by the CSIR Institute in South Africa.

A leading expert in the fields of computer security and blockchain, Sead worked with the World Bank and the European Commission on charting the vision & the future of secure digital and virtual currencies. Dr. Muftic currently serves as a project coordinator for blockchain and smart contracts at BAFT international trade organization.

Dr. Muftic is the author of five U.S. patents in the area of Blockchain, Identity Management, and Secure Financial transactions. He is the author more than 50 research papers, expert reports, and three books.

sales@bixsystem.com

<https://bixsystem.com/bixledger>

<https://bixledger.com>

