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Taking on Challenges of

Enterprise Blockchain Infrastructure

IDEATE

INNOVATE

IMPLEMENT

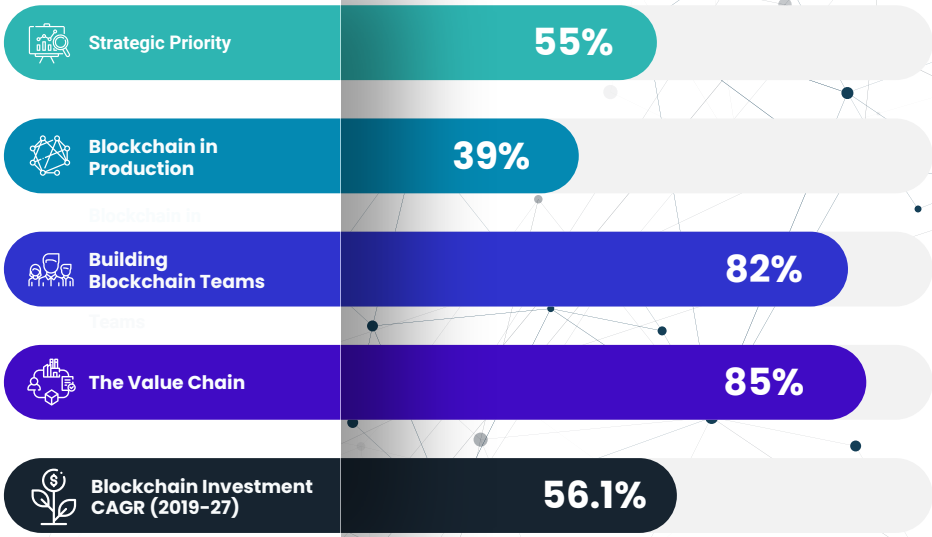
55%

of CIOs consider Blockchain as their #1 priority

Deloitte.

83% of respondents indicated their companies will lose competitive advantage if they don't adopt Blockchain

BLOCKCHAIN TRENDS -FROM PROMISE TO REALITY



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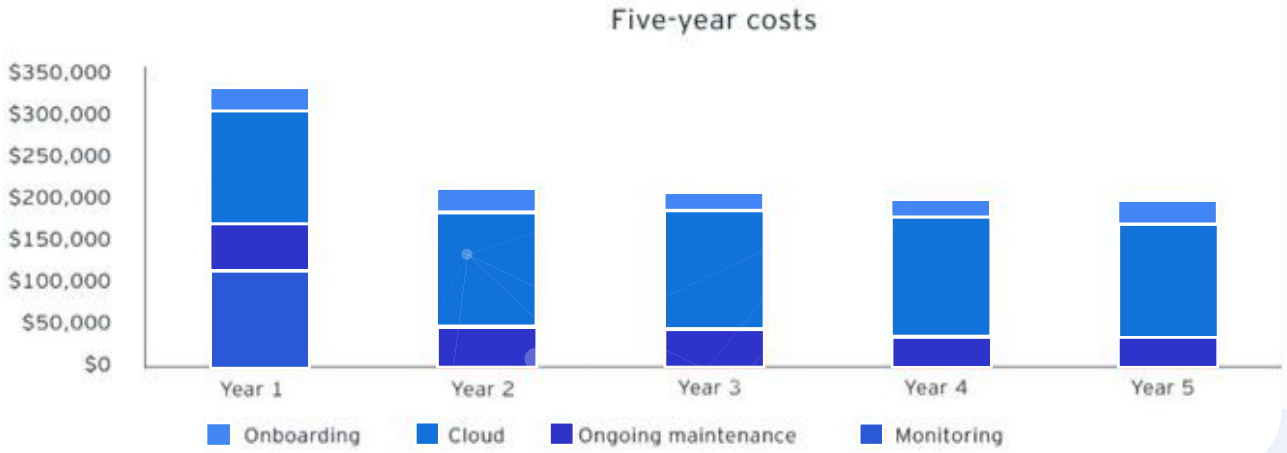
Lets talk about challenges

- Decentralization is missing
- Time to Market.
- Cost of Setup and Ownership
- Complexity of Scaling – Consortium Networks
- Complex to understand and adopt
- Lack of know-how and expertise
- Lack of standards for security and optimization

… and again, never underestimate the costs

Production Use-case Example

	Year 1	Year 2	Year 3	Year 4	Year 5
Onboarding costs	$115,146	$3,880	$3,688	$3,506	$3,335
Cloud costs	$50,006	$42,756	$36,557	$31,257	$26,725
Ongoing maintenance costs	$142,280	$142,014	$141,755	$141,505	$141,263
Monitoring costs	$19,663	$18,773	$17,928	$17,125	$16,362
Total costs	**$327,095**	**$207,423**	**$199,928**	**$193,393**	**$187,685**



What's needed - Blockchain Infra Automation

- The automation should be for, - in-depth configurations of protocols, monitoring of node and chain health, easy smart-contract design and management tools etc.
- Creating your consortium in few button clicks, without losing the decentralisation.
- Decide your infrastructure with no compromise, your cloud or on-premise. Every stakeholder in your consortium gets to make their own decision.
- Best in class security practices standard across all deployments.
- Analytics and Monitoring which can scale with your decentralised deployments.
- Control on costs with auto optimisations and scaling of the networks.

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A LOW CODE

BLOCKCHAIN AS A SERVICE

ENTERPRISE PLATFORM

- **Supports Multiple Blockchain Protocols**
  100% Automated and No Code
- **Heterogenous Cloud Deployments**
  Supports all major cloud providers including Private Cloud and On-Premise
- **Blockchain Analytic and Real time Monitoring**
  Advance Analytics and Monitoring Alerts and Notifications
- **Web Services for Faster DApp Development**
  CI/CD Integrations to Services like IoT, Governance, Storage, Secure Vault etc

>60%
Cost Savings

>90%
Faster Time to Market

>15,000
Developers on Board

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A structured platform approach to deliver operational excellence across Blockchain Networks and Decentralized Applications.

Network and Security

One Platform for all your needs

- Multiple Cloud Provisioning
- One Click Node Deployment
- Unified Dashboard
- Node Security inbuilt
- Blockchain Integration
- TEE as a Service
- Decentralized Storage

Ops and Management

100% Automation and DevOps

- Resource Monitoring
- Resource Optimization
- Auto-scaling and healing
- Unified Dashboard
- Intelligent Analytics
- Network Visualizer
- CI/CD Automation

Apps and Services

A complete toolkit

- GIT Integration
- IoT as a Service
- dApp Marketplace
- Decentralized Governance
- Key Secure Vault
- Asset Tokenization
- Federated Learning

PLATFORM AND PRODUCTS

Enterprise-grade infrastructure for **Permissioned Protocols**

Advanced **Blockchain Data Query API**

Service APIs with secure RPC endpoints

Enterprise-grade file system for **Distributed Storage (ZDFS)**

CLI tools and interfaces for seamless integrations with legacy CI/CD

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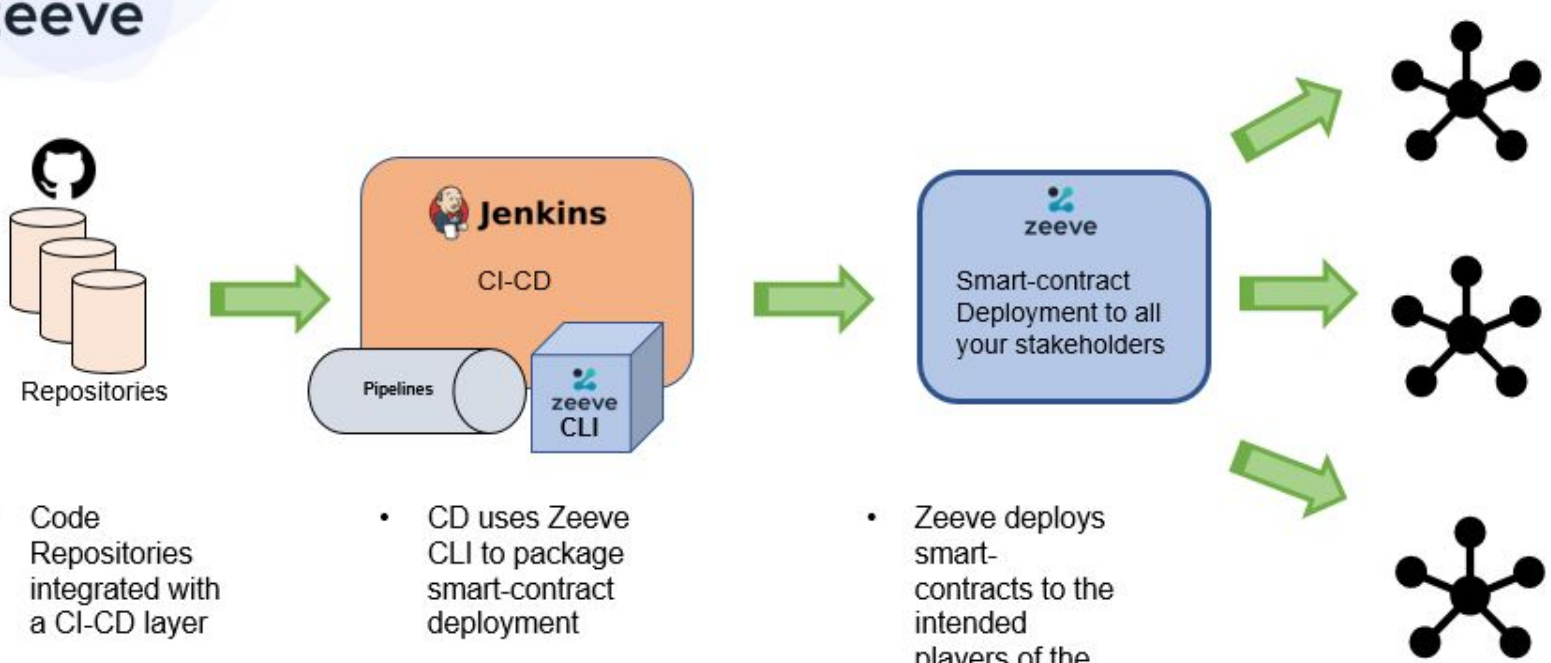
Zeeve for Hyperledger Fabric

- Network Management – Create, Scale & Onboard
- Node Management – add, stop, start
- Monitoring – Network & Node Level
- Chaincode packaging and deployment
- CLI Based operations for integrations with tools
- Alerts & Logging for the blockchain Services
- Fully flexible Fabric Topology – Organization ACLs
- 24x7 Support for Zeeve Blockchain Devops Experts

Zeeve with CI-CD



- Code Repositories integrated with a CI-CD layer
- CD uses Zeeve CLI to package smart-contract deployment
- Zeeve deploys smart-contracts to the intended players of the consortium as intended.

LEARNING EVERY DAY

Zeeve BaaS Platform is trusted by 15,000+ developers and 25+ Enterprises and Blockchain Consortiums

Customers

CASE STUDY

TradeReboot – Trade Finance Consortium

- Category – Trade Finance
- Blockchain Protocol – HyperLedger Fabric 2.2
- Cloud – AWS and GCP
- Network Size – 17 Nodes

Challenges

- Identify the most suitable Blockchain protocol to achieve the business goals.
- Enterprise grade network that has high availability, security and performance.
- Cloud agnostic deployment of nodes so that third party stakeholders are not locked to a single cloud service provider.
- Continuous monitoring of the deployed network as a service to reduce upfront and ongoing costs.
- An enterprise level support the Blockchain network.

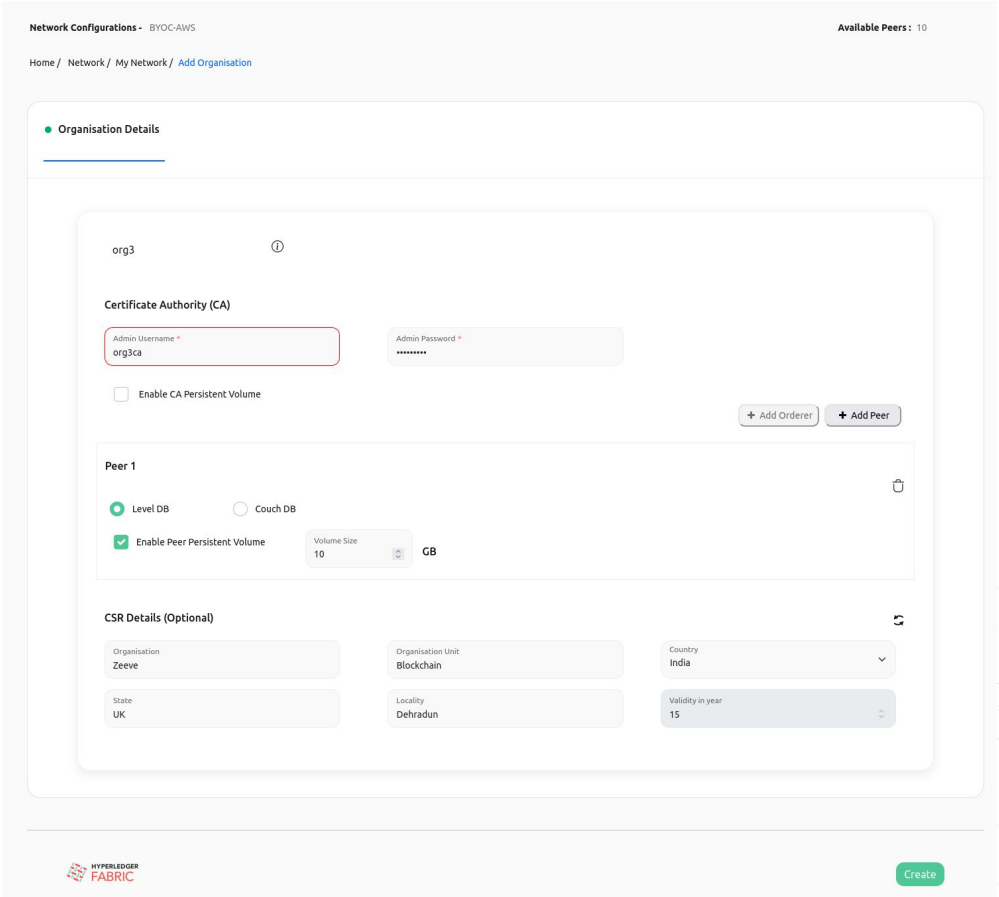
Zeeve Approach

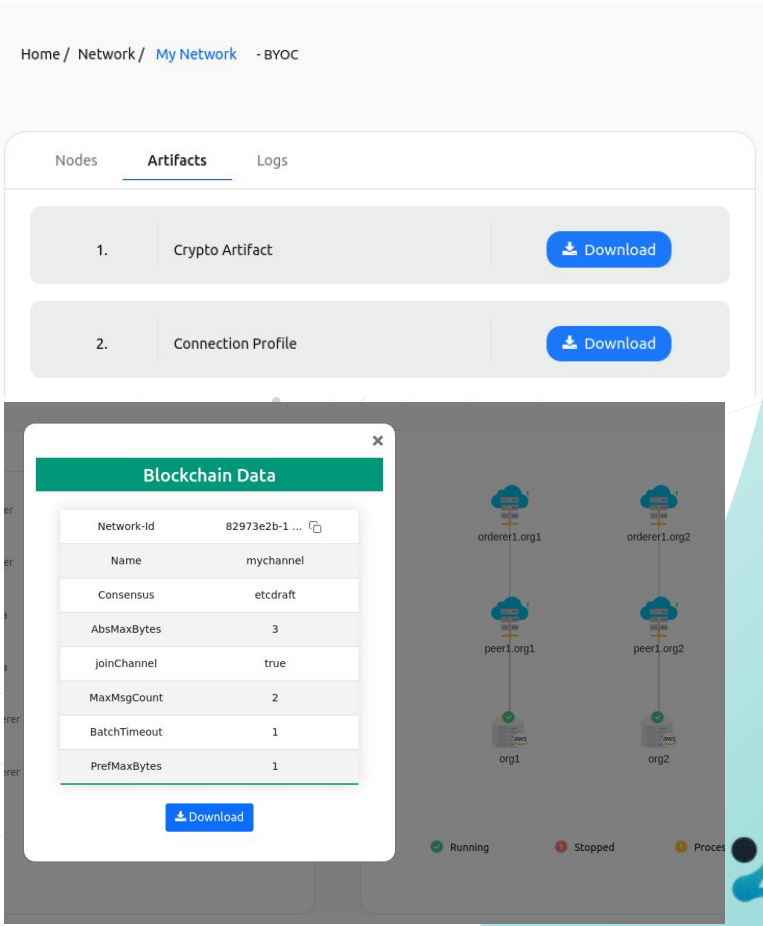
- AWS cloud architecture including node application instances, RDS for off-chain database, security rules, load balancers and the backup plan.
- Build the Trade Finance DaApp and Smart Contracts
- Governance smart contract to govern the rules of the consortium
- Deployment of HyperLedger Fabric 2.2 on Kubernetes cluster on AWS..
- Enabled the invitation module to on-board the initial users on the platform.

Results

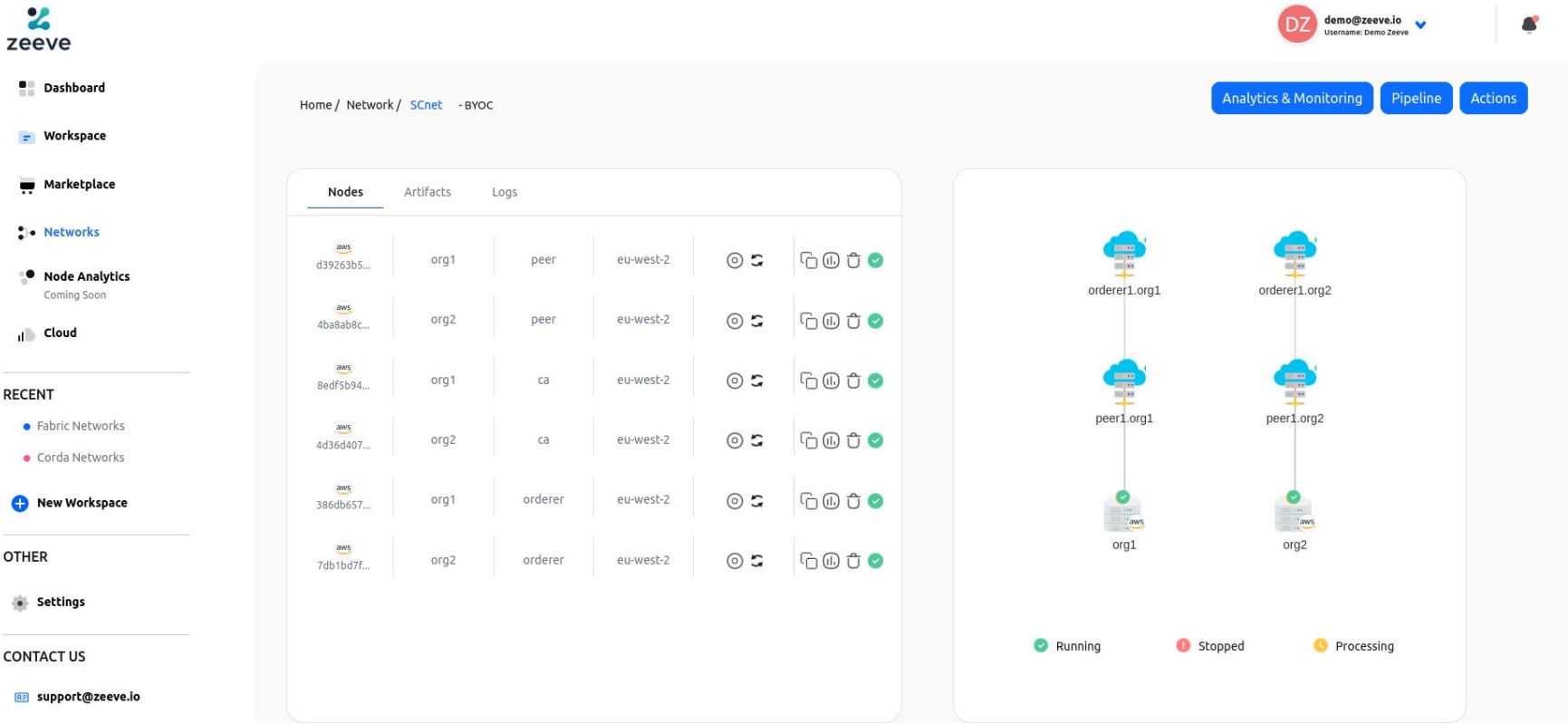
- Seamless Onboarding – Zeeve helped quick and hassle-free onboarding of users who wanted to host their own nodes.
- Cost Saving of ~45% –Zeeve helped optimized setting up of the nodes and network instances.
- Faster time to market by ~80% – Zeeve accomplished the complex deployment of trade finance network of Hyperledger Fabric on AWS in less than 30 minutes.
- Proactive Monitoring – Zeeve features advance analytics and proactive monitoring of Blockchain and cloud resources..
- 24/7 Support – Zeeve provided DevOps experts and Blockchain engineers for initial deployment architecture and ongoing management of the network.

CREATE AND SCALE NETWORKS

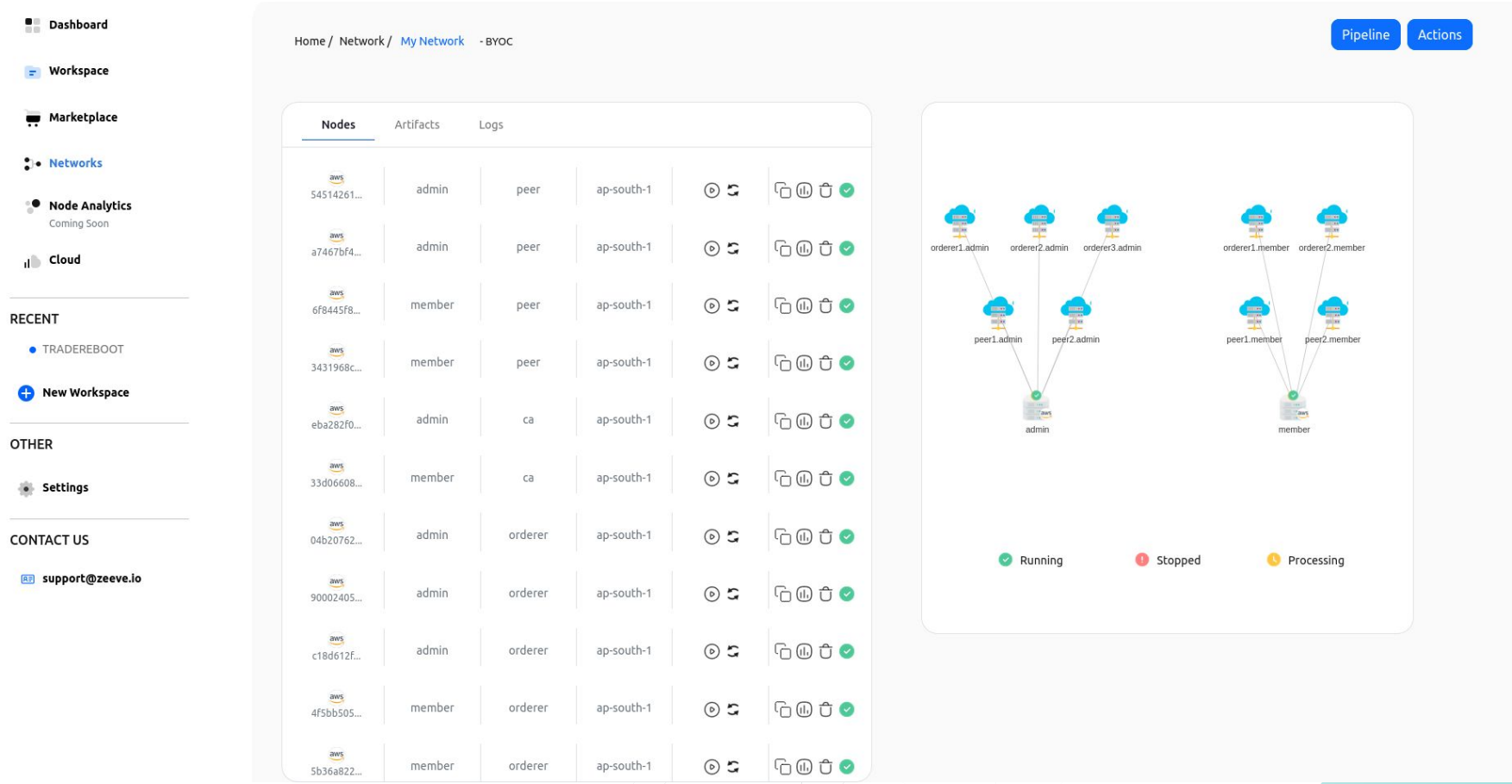




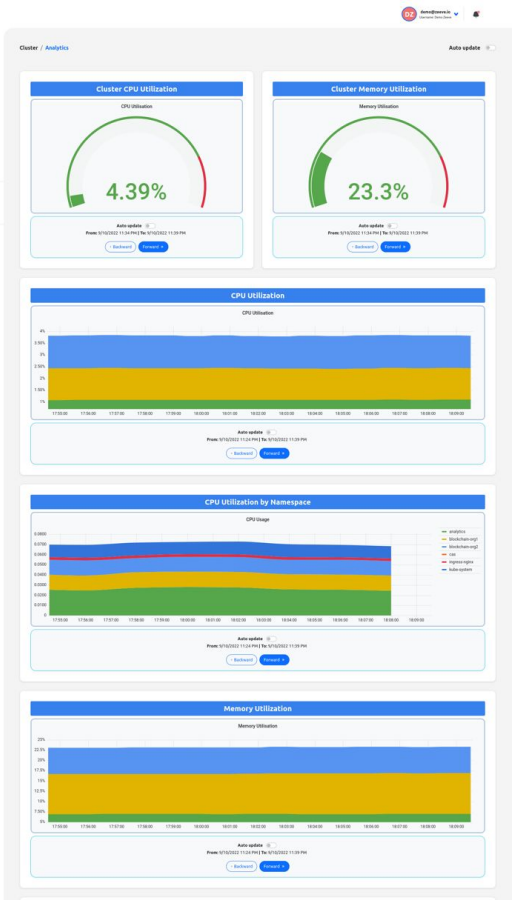
NETWORK TOPOLOGY

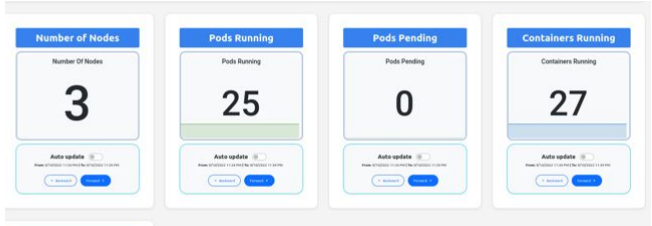


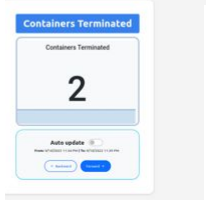
AS FLEXIBLE AS IT GETS

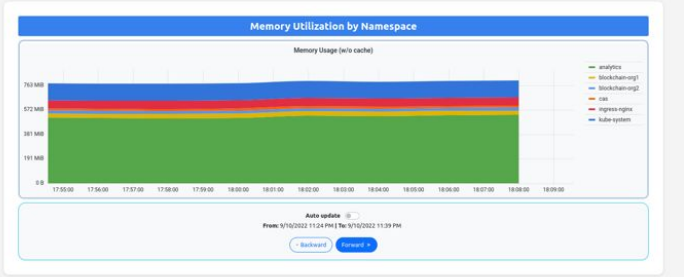


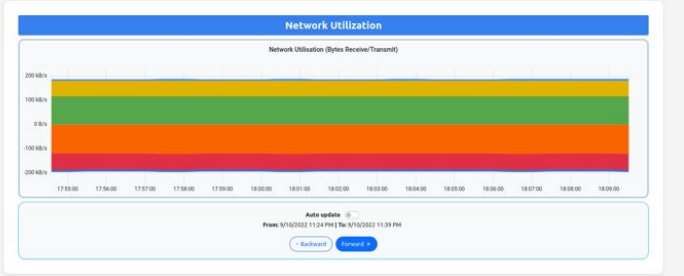
STAY IN COTROL

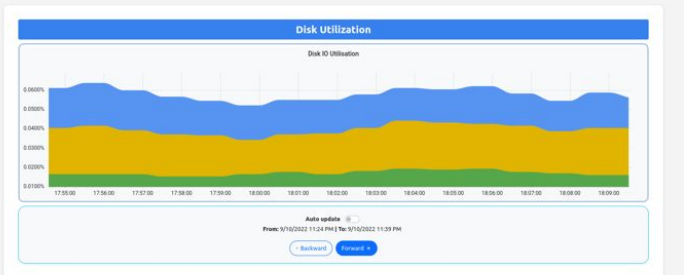




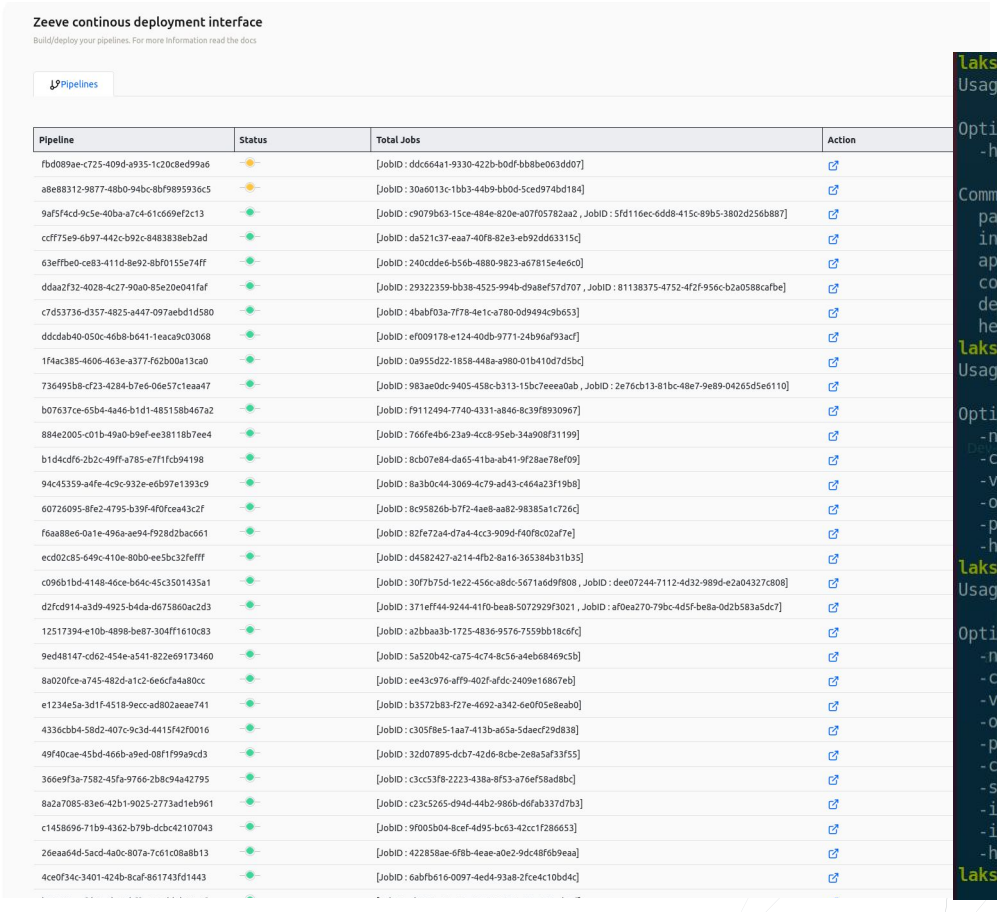








Zeeve CLI, CD PIPELINES




```
lakshayg@ubuntu:~$ zeeve fabric chaincode --help
Usage: zeeve fabric chaincode [options] [command]

Options:
  -h, --help         display help for command

Commands:
  package [options]
  install [options]
  approve [options]
  commit [options]
  deploy [options]
  help [command]     display help for command
lakshayg@ubuntu:~$ zeeve fabric chaincode install --help
Usage: zeeve fabric chaincode install [options]

Options:
  -n, --network-id <network-id>   Id of the Network
  -c, --chaincode <chaincode>     chaincode name
  -v, --version <version>         chaincode version
  -o, --org <org>                 chaincode organisation
  -p, --peer-urls <peer-urls...>  chaincode peer urls
  -h, --help                      display help for command
lakshayg@ubuntu:~$ zeeve fabric chaincode commit --help
Usage: zeeve fabric chaincode commit [options]

Options:
  -n, --network-id <network-id>     Id of the Network
  -cc, --chaincode <chaincode>      chaincode name
  -v, --version <version>           chaincode version
  -o, --orgs <org...>               chaincode organisation
  -p, --peer-urls <peer-urls...>    chaincode peer urls
  -ch, --channel <channel>          channel name to approve chaincode
  -s, --sequence <sequence>         chaincode sequence
  -ia, --init-args <init-args...>   Init method arguments ex; "marble1","blue","35","tom"
  -im, --init-method <init-method>  Init method name i.e, "init" or "initMarbles"
  -h, --help                        display help for command
lakshayg@ubuntu:~$
```

WHAT'S COMING

- Private Data Collections Support
- HSM Based Key Management
- **DMZ Based Security Architecture and High Availability Setup of Nodes**
- Logging Support
- Scaling Resources in Clusters
- Allow Private Node Connections with AWS Backbone
- Managed Node Deployment

Address

Zeeve Deeptech Pvt Ltd
1283, ATS Greens, Sector-93A
Noida, India 201304
+91 98185 92244

Zeeve Technologies Ltd.
2001, Regal Tower, Business Bay,
Dubai, UAE
+971 50 245 7978

Zeeve Inc.
395 Santa Monica Place, Unit 308,
Santa Monica, California - 90405
+1 (702) 979 5012

Contact

- Email: success@zeeve.io
  Email: ravi@zeeve.io
- http://www.zeeve.io