

# Monitoring of EIA blockchain platform



# Sockchain Services Public status service on blockchainotarius.cz



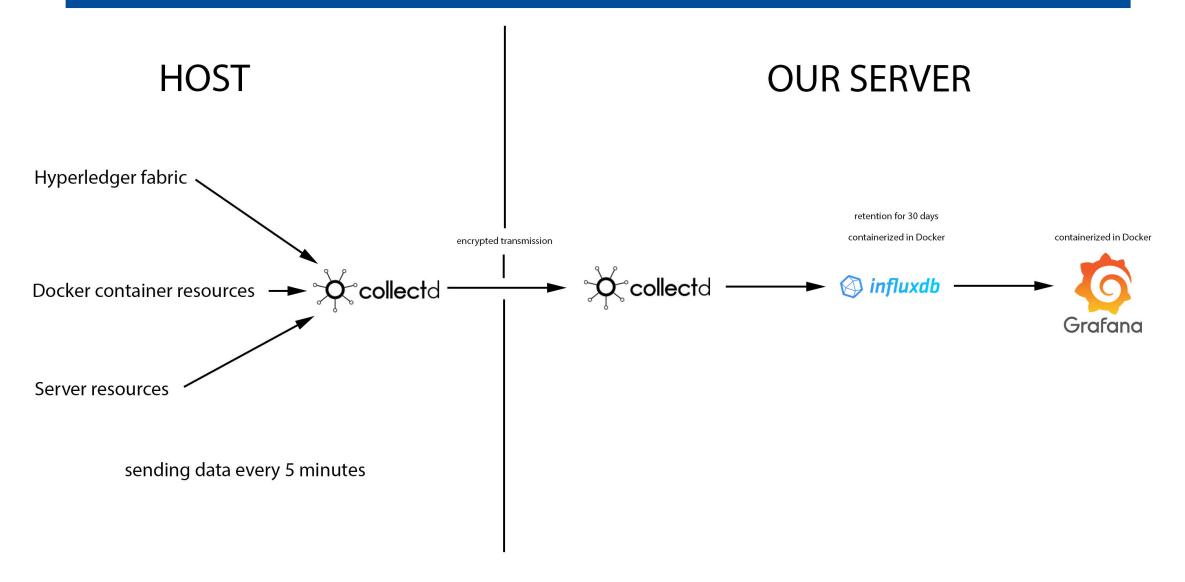


Directory of Blockchain Notarius providers. Registred document can be verified at every from them free of charge. Document registration requires login to private part of Blockchain Notarius. Login data provides node owner, service can be paid.

Node name	Node owner	♦ Owner locality	Contatct	÷	Availability 🄻	Go to web
MULT	MULTIMA a.s.	Česká republika	anovotny@multima.cz			Link
NXP	NEXPRO Communication s.r.o	Česká republika	lenka.cilova@nexpro.cz		•	Link
EBS-JPN	ELA Blockchain Services a.s.	Česká republika	kozak@elachain.cz			Link
HKCR	Hospodářská komora České republiky	Česká republika	kaspar@komora.cz		•	Link
ELP	Elitera Publishing, s.r.o.	Česká republika	ritter@elitera.cz			Link
VER	Verifier4U	Česká republika	sojka@verifier4u.com		•	Link
EBS	ELA Blockchain Services a.s.	Česká republika	havle@elachain.cz		•	Link
ALM	Almeto s.r.o	Česká republika	pesek@almeto.cz			Link
SPCR	Svaz průmyslu a dopravy České republiky	Česká republika	oferdus@spcr.cz		•	Link
CPS	Jan Prokš, soudní znalec	Česká republika	jan.proks@seznam.cz			Link



## Scheme of new private HFC monitoring





## Custom dashboards

# Home				<ul> <li>Image: Image: Ima</li></ul>
Welcome to Grafana				Need help? Documentation Tutorials Community Public Stack
Basic The steps below will guide you to quickly finish setting up your Grafana installation.	TUTORIAL DATA SOURCE AND DASHBOARDS Grafana fundamentals Set up and understand Grafana if you have no prior experienc tutorial guides you through the entire process and covers the source" and "Dashboards" steps to the right.		COMPLETE Create your first dashboard	Remove this panel
Dashbo Starred dashboards	oards	My goals as a newly elected OpenTelemetry Go	Latest from the blog	lis 01
Docker containers Elis_admn Orderer metrics - admin, notarius, ela-sys, spchannel1	*	I joined Grafana Labs as a software engineer in Octob	per to help build out a team focused on OpenTelemetry, ar community holds elections for a few seats on the Govern	nd within a few weeks, I was promptly encouraged to run for a seat on the ance Committee board, which oversees the project at large. The results of this
EBS.#dmin Peer metrics - admin. notarius			ted Grafana, Loki, and Grafana Agent for their new	
	*	LMA2. Jon Seager is an engineering director at Canor	nical with responsibility for Juju, the Charmed Operator Fr	architect of the new system of Charmed Operators for observability known as amework, and a number of Charmed Operator development teams which operate
Peer metrics - spchannel1 EBE_admin	*			jines the world of operating software securely, reliably, and at scale.
Resource monitor EBS_stimin	*	How Changelog monitors and optimizes websi Developers around the world get their news from Cha		nspiring content for software developers. Through their popular podcasts,
			It!, the team at Changelog helps listeners stay up-to-date podcasts and interacting with website content across tin	on the latest happenings, trends, and tools in a constantly evolving industry. With ne zones, monitoring Changelog.
Resource monitor		What's new in Grafana Cloud for October 2021:	Machine Learning, Grafana 8.2, new integrations,	and more říj 26
Docker containers EBS_sdmin	*	here's a roundup of all the new features and improven		oud. To help our new and existing customers learn about the latest and greatest, a Cloud. Get started with Grafana Cloud: If you're not already familiar with it, ski), traces (Grafana Tempo), and dashboards.
Peer metrics - admin, notarius EBS_admin			with TomTom, Unity, TripAdvisor, Snyk, and Citiban	k říj 25



## Hyperledger fabric data from nodes

EBS_admin / Peer metrics - admir							
Hostname blockchain.elachain.cz + blockch	ain.felk.cvut.cz + blockchain.multima.cz >	er peer0 ~					
<ul> <li>blockchain.elachain.cz</li> </ul>							
Blockchain height	Total peers	Time taken in seconds for committing b	Time taken in seconds for ledger block	The number of proposals received	The number of successful proposals	i HFC version 2.2.4	
Admin Notarius 1074 1371	Admin Notarius 41 39	0	0	1177	1128	1	
~ blockchain.felk.cvut.cz							
Blockchain height Admin Notarius	Total peers Admin Notarius	Time taken in seconds for committing b	Time taken in seconds for ledger block	The number of proposals received	The number of successful proposals	i HFC version 2.2.4	
1074 1371	34 34	0	0	767	767	1	
<ul> <li>blockchain.multima.cz</li> </ul>	rs dur d						
Blockchain height	Total peers	Time taken in seconds for committing b	Time taken in seconds for ledger block	The number of proposals received	The number of successful proposals	i HFC version 2.2.4	
Admin Notarius 1074 1371	Admin Notarius	0	0	772	772	1	
<ul> <li>blockchain.spcr.cz</li> </ul>							
Admin Notarius 1074 1371	Admin Notarius 32 32	Time taken in seconds for committing b	Time taken in seconds for ledger block	The number of proposals received	The number of successful proposals	HFC version 2.2.4	
v blockchain.verifier4u.com							
Blockchain height Admin Notarius	Total peers Admin Notarius	Time taken in seconds for committing b	Time taken in seconds for ledger block	The number of proposals received	The number of successful proposals	HFC version 2.2.4	



# Hyperledger fabric data from nodes

- Blockchain height
- Total known peers
- Time taken in seconds for committing block changes to state database
- Time taken in seconds for ledger block processing
- The number of proposals received
- The number of successful proposals
- The active version of Fabric

All available StatsD metrics for peers can be found on:

https://hyperledger-fabric.readthedocs.io/en/release-2.2/metrics\_reference.html#id2



## Hyperledger fabric data from orderers

<b>(</b> ) 0 +	<ul> <li>         ⊞ EBS_admin / Orderer metrics - a     </li> <li>         Hostname All → Orderer orderer1 →         v blockchain.elachain.cz     </li> <li>         The time from first transaction enqueing to     </li> </ul>	Number of orderers in this channel The block number of the latest block committed							배상 법 ⓒ Last 7 days ~ Q 것 The leadership status of the current orderer					℃ 5m ~						
) © Ф © II	Admin Notarius	spchannel1 <b>2.0</b>	Admin 5	Notarius 5	ELA-sys 5.0	spchannel1	Admin 5	Notarius 5	ELA-sys	spchannel1	Admin 1071	Notarius 1367	ela-sys 23	spchannel1 551	Admin Notarius	ELA-sys 5 0	spchannel1			
Ø	The number of leader changes since p Admin Notarius ELA-sys 6.7 6.7 10	spchannel1			s received for con		Admin	nber of proposals Notar	rius s	prmal type t spchannel1 5.2		The number of pr		ta	HFC	version 2.2.4				
	v blockchain.fccps.cz The time from first transaction enqueing to	n the block bei		Number of a	tive orderers		Number of orderers in this channel The block number of the latest block committed						The leadership status of the current orderer							
	Admin Notar 2.0 2.	ius	Admin 5	Notarius	ELA-sys	spchannel1 5	Admin 5	umber of orderer Notarius 5	ELA-sys	spchannel1 5	Admin 1071	Notarius 1367	ELA-sys 23	spchannel1 551	Admin Notarius 0.35 0.3	ELA-sys	spchannel1			
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<b>5</b>	- blockchain.electroindustry.cz The time from first transaction enqueing to Non da	o the block bei	Admin 5	Number of an Notarius	ELA-sys	spchannel1 5	Admin	umber of ordered Notarius 5	rs in this chann ELA-sys <b>5</b>	spchannel1 5	The block Admin 1071	k number of the Notarius 1367	latest block com ELA-sys 23	nmitted spchannel1 551	The leadership st Admin Notarius O O	ELA-sys	spchannel1 0			



# Hyperledger fabric data from orderers

- The time from first transaction enqueing to the block being cut in seconds
- Number of active orderers
- Number of orderers in channel
- The block number of the latest block committed
- The leadership status of orderer
- The number of leader changes since process start
- The total number of proposals received for config type transactions
- The total number of proposals received for normal type transactions
- The number of proposal failures
- The active version of Fabric

All available StatsD metrics for orderers can be found on:

https://hyperledger-fabric.readthedocs.io/en/release-2.2/metrics\_reference.html#statsd



#### Docker containers data





## Docker containers data

- CPU
- Memory
- Network traffic
- Block IO



#### System resources data





## System resources data

- Load longterm
- CPU
- Memory
- Disk space
- Network traffic



# Why is it useful?

- Monitoring load of the whole blockchain network
- Optimization of HW for nodes
- Setting limits for Docker containers
- Helpful for solving problems on the client's side



# Usable for your own blockchain network

- You can monitor your own network with customized dashboards
- Relatively easy to set up
- User groups in Grafana for child organizations
- Open source
- Data push model HOST  $\rightarrow$  SERVER



## Thank you for your attention

https://www.elachain.cz/

https://www.blockchainotarius.cz/

https://www.hyperledger.org/

