An introduction to iov42's zoned architecture
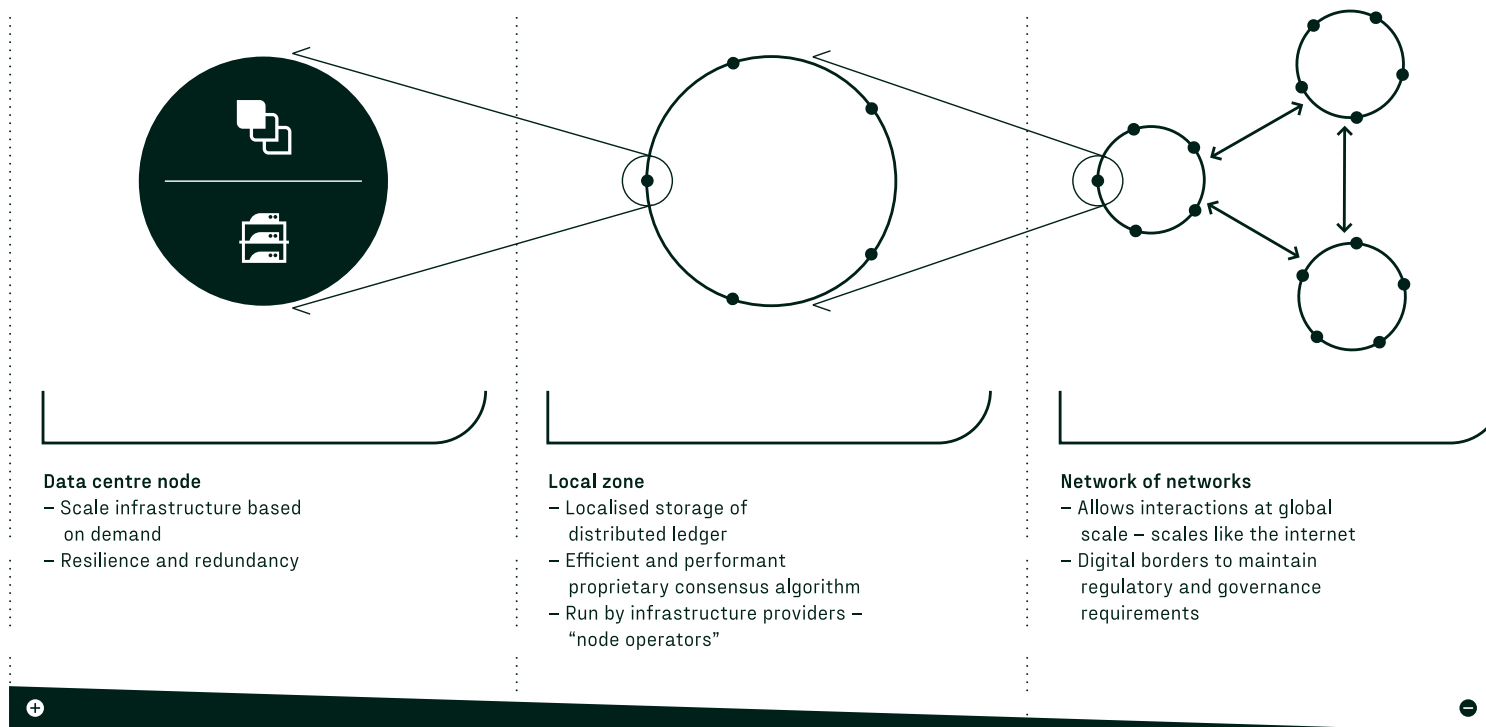
The iov42 Zone Model

The iov42 global platform is based on the formation of local, permissioned DLT networks called "zones." A zone is formed by a limited number of locally connected nodes, where each node is a data centre. The iov42 zone represented below has five nodes.

The nodes in a zone form the basis of a single DLT network. Every node in the zone participates in consensus and has a copy of the immutable history of all of the zone's activity. All data, including transactions, remain within the zone. This enables the data centre nodes to comply with any relevant data locality regulations.

An iov42 zone can be created based on factors such as geographical location, industry, or even regulatory requirements. In most cases, geography will be the determining factor.

For example, a group of petroleum suppliers could form a zone to allow their customers to trade fuel and

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Data centre node
– Scale infrastructure based
  on demand
– Resilience and redundancy

Local zone
– Localised storage of
  distributed ledger
– Efficient and performant
  proprietary consensus algorithm
– Run by infrastructure providers –
  "node operators"

Network of networks
– Allows interactions at global
  scale – scales like the internet
– Digital borders to maintain
  regulatory and governance
  requirements

carbon certificates within a certain region. Another example could feature telecommunications companies or internet service providers (ISPs) coming together to offer the iov42 platform as a service for their customers to develop DLT solutions.

The Advantages of the Zone Model

The zone approach has advantages for performance, security, and governance. Limiting the number of nodes and their geographical proximity to one another ensures a rapid consensus process and a higher number of transactions per second. Furthermore, since the nodes are all known entities to each other, there is little incentive for zone participants to undermine the zone's integrity. Lastly, governance is built into each zone through legal agreements made between the operators of the nodes. If a dispute occurs amongst the nodes in a zone, the geographical bounds of each zone allow appropriate and efficient legal proceedings to take place.

Connecting the Zones

Theoretically, an iov42 zone could be formed anywhere in the world, where the right infrastructure exists. The zones are designed to eventually be able to connect with one another and form a global network of networks. This would lead to the formation of digital borders across the platform that could truly meet demands of scalability, interoperability, and regulatory compliance.

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