

Arrikto

Whitepaper

The Rok Network

A P2P network for sharing VMs and Containers

In today's enterprise world, IT infrastructure is not only growing rapidly, but also spreading across multiple locations and domains, getting more and more diverse.

You now run infrastructure in more than one private location, with multiple environments in each one, for test & dev, QA, production, backup, DR, analytics. You have remote teams that work either from their laptops or a branch office, and you most probably run some workloads on one or even more public clouds. And you just started using Containers too!

And now, a number of VMs and Containers are trapped inside each separate infrastructure silo. This happens because the underlying data that VMs and Containers depend upon, is practically impossible to move among all these distinct silos.

So, what does your enterprise do, to allow your VMs and Containers to move around in such environment? There's not much it can do right now, actually. Your IT administrators struggle with painful migrations, backup and restore procedures, and belated manual recoveries.

What if you could have your VMs and Containers available everywhere, anytime, without having to coordinate with IT at all?

Arrikto builds the Rok Network: the world's first P2P Network for sharing VMs and Containers.

End users can now share their VMs and Containers efficiently and transparently, independently of the infrastructure they are running on. And boot them instantly. Anywhere.

The Rok Network consists of two parts:



Rok

A thin data services layer that abstracts the underlying persistent storage and provides instant, parentless clones and snapshots. Rok is a software-only virtual appliance that runs on compute/hypervisor nodes, and integrates both with VMs and Containers.

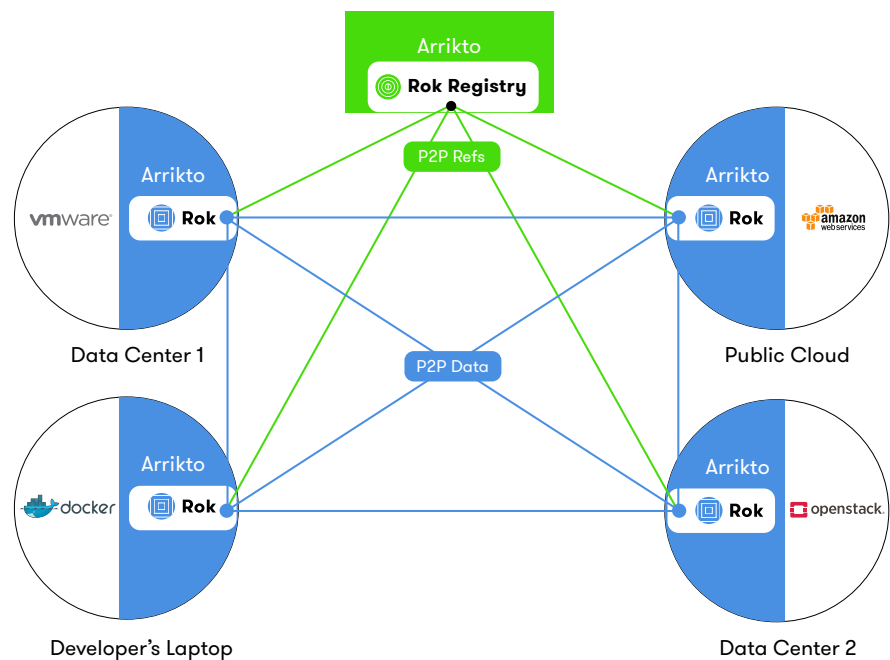


Rok Registry

A global, or private service, which brings together many Rok instances in a peer-to-peer network. The Rok Registry stores only references to data, not the actual data, and allows Rok instances to exchange snapshot pieces over a P2P network. Eventually, when users create new snapshots, only the changed parts have to traverse the network.

The combination of Rok and the Rok Registry creates a new way of sharing VMs and Containers for end users, that never existed before. Your data can now move transparently across any kind of infrastructure, private or public.

Rok is currently fully integrated with VMware vSphere, Amazon Web Services (AWS), Docker, OpenStack, plain QEMU/KVM, Google Ganeti, VMware Workstation, and Oracle VirtualBox.



Key Features

End user sharing

With current solutions, it is really painful to move data among multiple domains. By multiple domains we mean that the user on the source is not the same as the user on the destination.

For the first time, end users can share their VMs and Containers without having to trust one another. They can negotiate with each other directly,

letting the IT admin get out of the way, since a single administrator with access to both ends of the infrastructure is no longer necessary. With the Rok Network, they are able to share data with other data centers, public clouds, branch offices, and even laptops, without requiring each one having administrative access to the other's infrastructure. In large organizations with security and compliance procedures, the IT administrator is now promoted from an inhibitor, to an expeditor, applying the governance policies.

Mobility across platforms and clouds

With Rok and the Rok Registry, your data can move transparently across different virtualization, container and cloud platforms. Move your VMs from one virtualization platform to another, and vice versa, seamlessly. Build your apps on Containers, and run them on VMs. Migrate to the cloud anytime, or even switch between different public cloud providers. Everything is managed using a single, intuitive Web UI or complete RESTful APIs.

Streamline traditional data operations

With Rok and the Rok Registry, VMs and Containers are synced on multiple on-site, off-site, and cloud locations in a peer-to-peer way. Data is distributed and deduplicated across the Rok Network. If a link goes down, users have all the other peers there to serve them. Backup and management of multiple data copies are now possible in multiple locations, each running diverse compute platforms, and having different underlying storage technologies. Eventually, by solving the problem of data mobility, the data operations become policies, and the end users become the ones that are now defining and driving them, the way they choose.

Key Benefits

Unmatched operational efficiencies

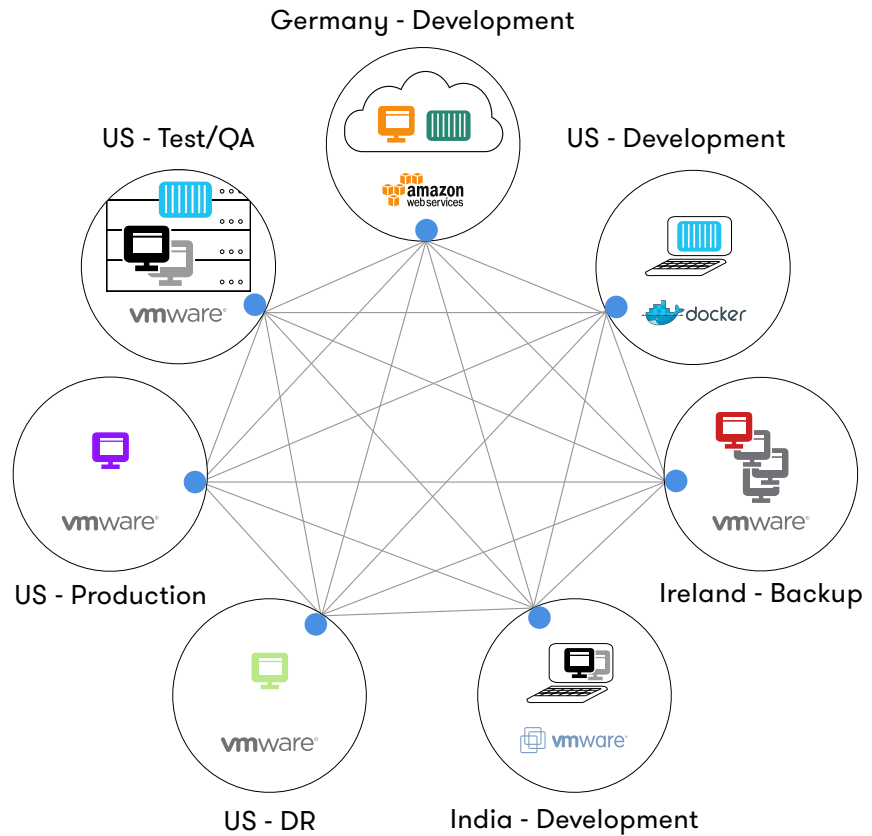
By using the Rok Network, end users, the application/data owners, can now share VMs and Containers without having to trust each other's underlying infrastructure. Therefore, the IT administrator gets out of the way regarding all operations that have to do with moving data around. We bring down operational overhead by bridging teams, and enabling them to cross the operational boundary for the first time.

We are squashing down OPEX, and we unify the use of diverse platforms to bring down planning and asset costs, resulting in an aggregated 70% TCO reduction, for moving workloads.

End user driven workflows

We empower the application/data owners with workflows that never existed before. We enable them to share enterprise data, and drive traditional IT operations independently: the end user can perform on-site and off-site Backup, and manage all of their data copies in a far more fine-grained manner. The users can now move their apps or data to the cloud easier

than ever before, share them with other users across the world, and download other users' content using a peer-to-peer network.



No vendor lock-in

With Rok you can use any type of hardware for compute and storage. You can also move to the cloud provider of your choice, or even move among different cloud providers. Rok allows you to gradually migrate from old to new hardware and/or from legacy technologies to completely different new ones, without worrying about each solution's vendor, and with minimal or no application downtime. Rok enables you to move fast and transparently across environments, vendors, and providers, freeing you up, so you can instantly adjust your infrastructure to your critical business needs, and succeed in getting competitive pricing for each service you consume.

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