Shahab

Distributed Cloud Infrastructure

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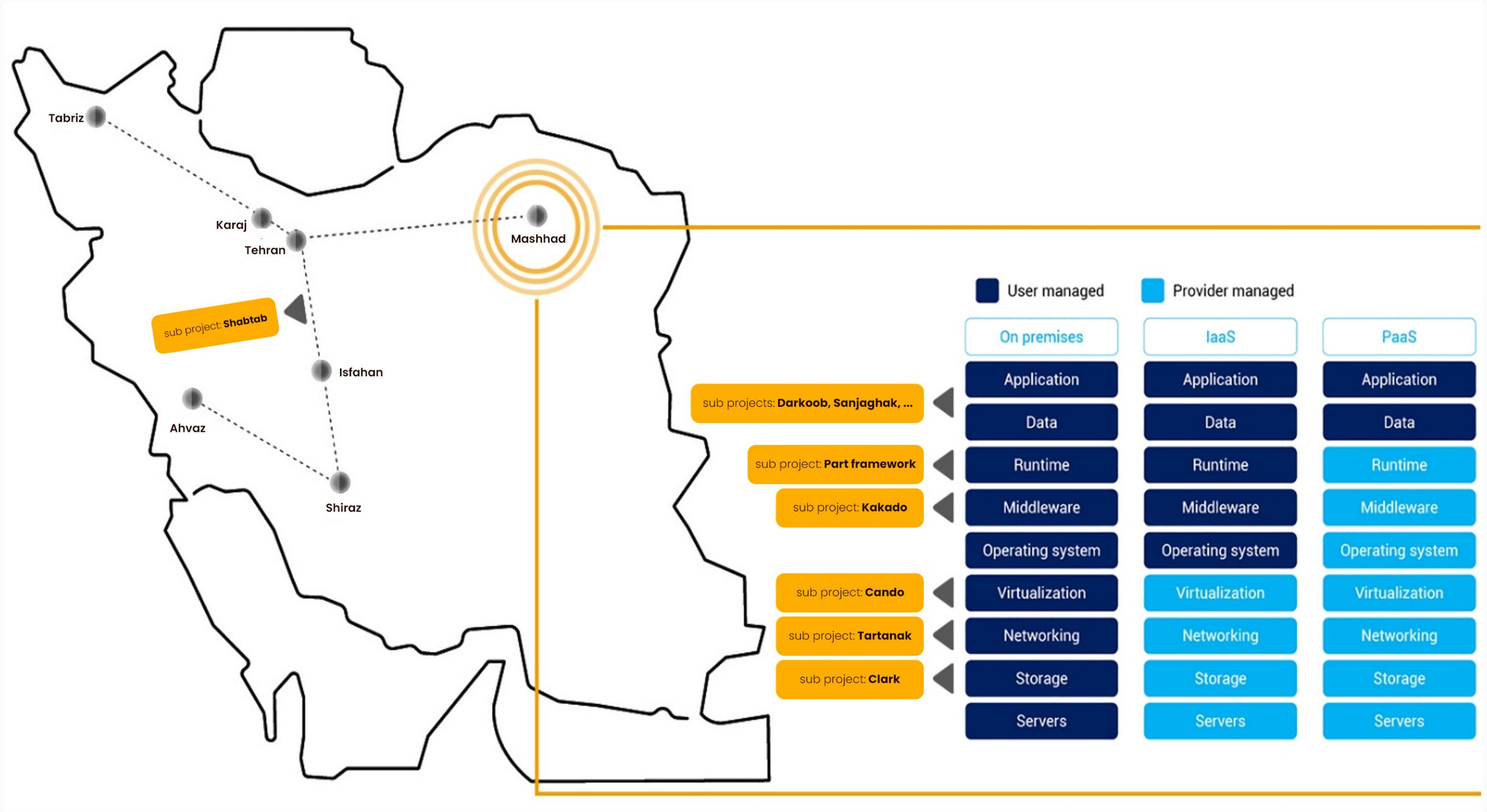
What Are We Talking About?

1. Architecture
2. Tartanak
   Software Defined Network
3. Clark
   Software Defined Storage
4. Shabtab
   Distributed Underlay Network
5. Cando
   Cloud Infrastructure
6. KK2
   Containers
7. Darkoob
   Task Runner
8. Sanjaghak
   Network Operation Center

Architecture

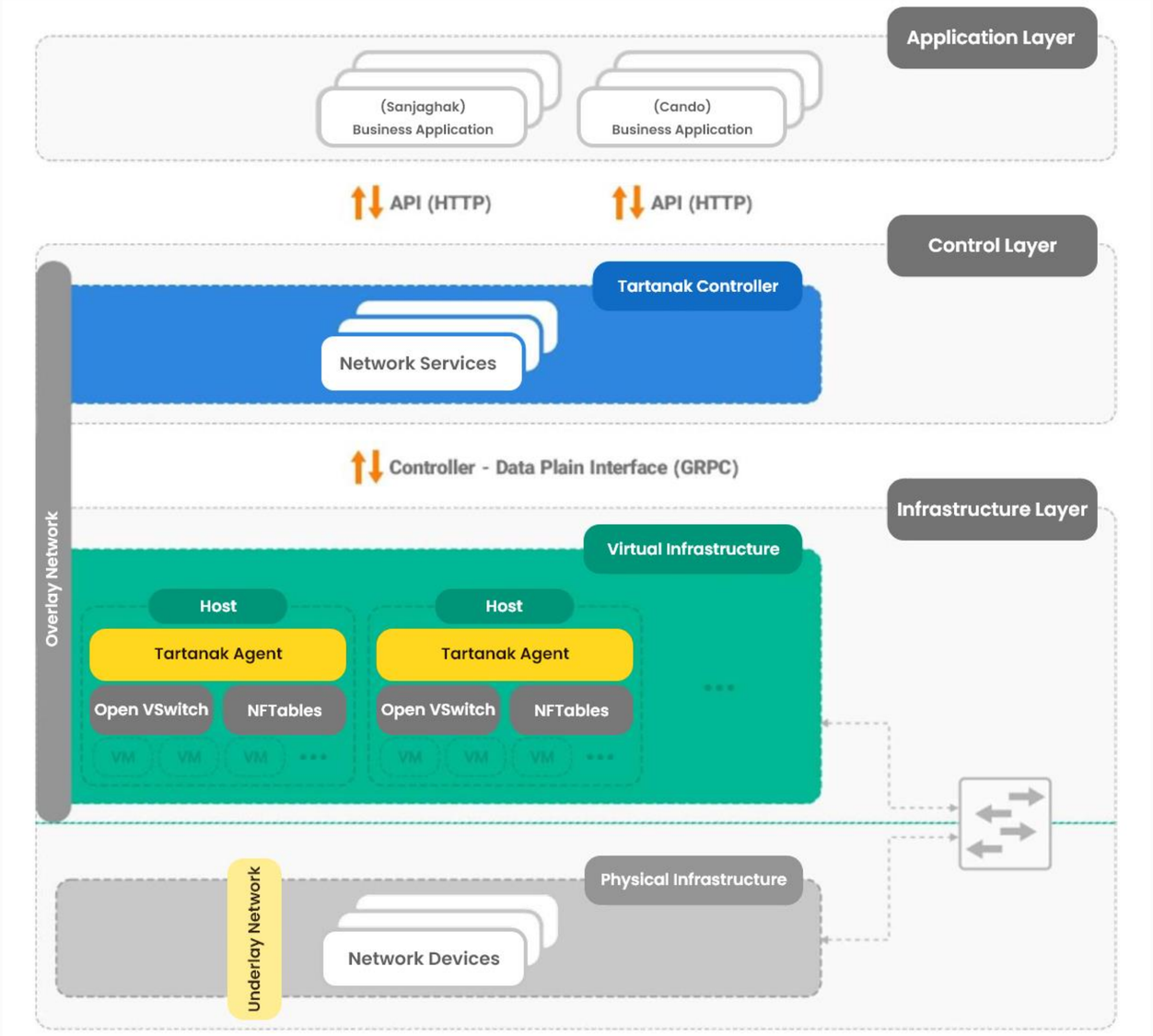


1

Sub Project

Tartanak

Tartanak


Application Layer
(Sanjaghak)
Business Application
(Cando)
Business Application
API (HTTP)
API (HTTP)
Control Layer
Tartanak Controller
Network Services
Controller - Data Plain Interface (GRPC)
Infrastructure Layer
Overlay Network
Virtual Infrastructure
Host
Tartanak Agent
Open VSwitch
NFTables
VM
VM
VM
Host
Tartanak Agent
Open VSwitch
NFTables
VM
VM
VM
Physical Infrastructure
Underlay Network
Network Devices

Tartanak

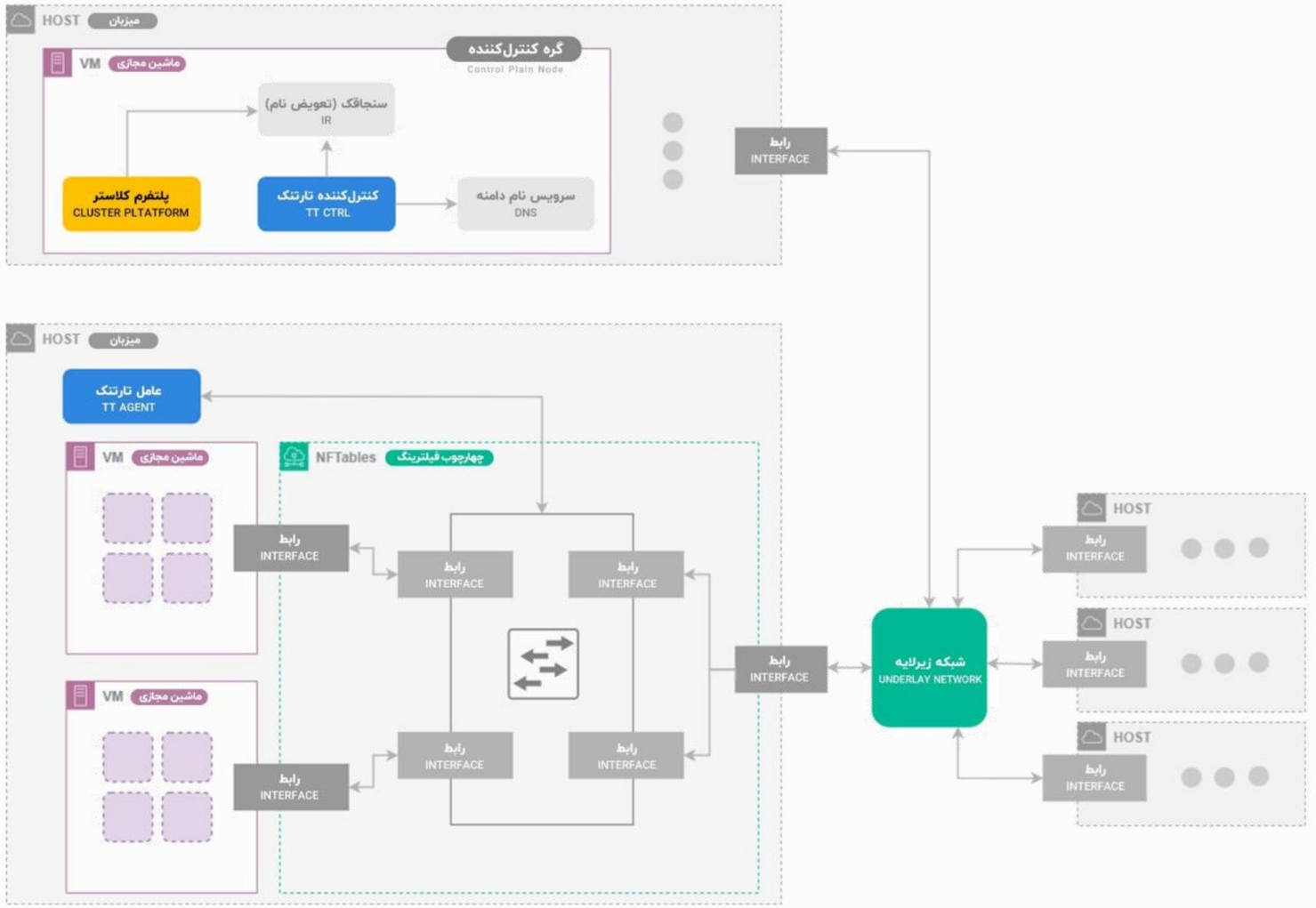
Challenge

- Depending on expensive hardware
- Complex setup
- Lack of automation
- No flexibility
- High opex overhead

Solution

- Designing a network intelligence

Tartanak


HOST
میزبان
VM
ماشین مجازی
گره کنترل‌کننده
Control Plain Node
سنجاقک (تعویض نام)
IR
پلتفرم کلاستر
CLUSTER PLTATFORM
کنترل‌کننده تارتنک
TT CTRL
سرویس نام دامنه
DNS
رابط
INTERFACE
HOST
میزبان
عامل تارتنک
TT AGENT
VM
ماشین مجازی
NFTables
چهارچوب فیلترینگ
رابط
INTERFACE
VM
ماشین مجازی
شبکه زیرلایه
UNDERLAY NETWORK
HOST
HOST
HOST

Tartanak

Features

- Independence from proprietary hardware
- Centralizing network intelligence
- More Automation
- Reducing capex and opex
- Increasing network setup speed

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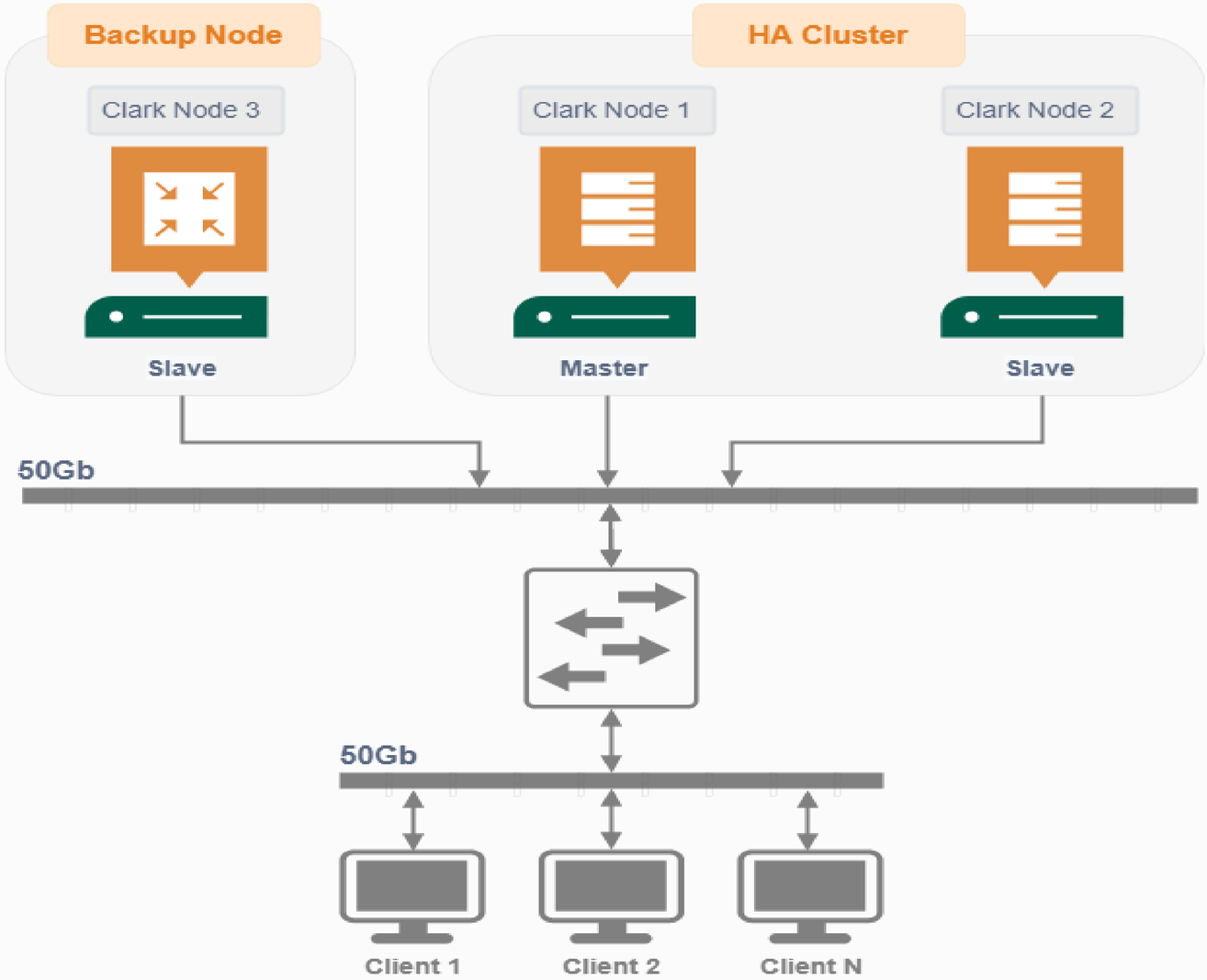
22

2

Sub Project

Clark

Clark


Backup Node
HA Cluster
Clark Node 3
Clark Node 1
Clark Node 2
Slave
Master
Slave
50Gb
50Gb
Client 1
Client 2
Client N

Clark

- Software defined Storage
- Using Linux based technologies
- Data distribution depending on setup

Features

- File system support
- Block Device support
- Load Balancing
- Availability
- Shared Storage
- Scalable up to 16 nodes and 10 petabytes
- No need proprietary hardware
- Automated setup and support
- Restful API

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Sub Project

Shabtab

Shabtab

Features

- Proximity to data sources
- Advanced security
- Improved performance
- Better recovery from crisis
- Affordable

Approach

- Expansion of the substrate network
- Creating a private secure network in the country
- Wide number of hosting sites
- Presence at IXP
- Changing and testing hosting architecture

Technical challenges

- Distributed DNS
- VXLan network
- BGP routing
- Multitenancy consideratons

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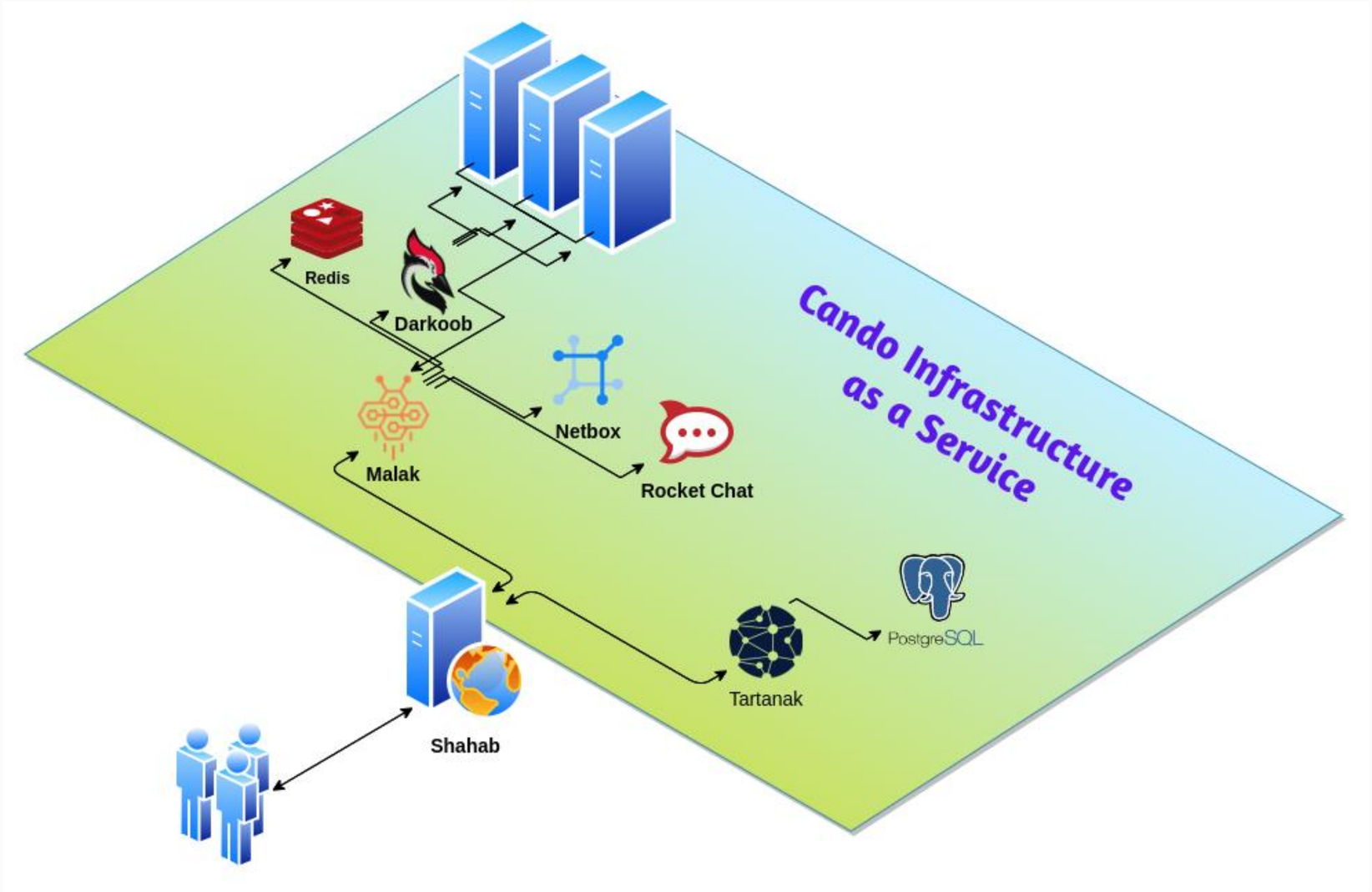
Sub Project

Cando

Cando


Redis
Darkoob
Netbox
Malak
Rocket Chat
Cando Infrastructure as a Service
PostgreSQL
Tartanak
Shahab

Infrastructure as a service in the Cando

Virtual network management

- Construction and management of virtual network
- Create and manage virtual firewall rules

Management of virtual machines

- Creating and managing virtual machines
- KVM virtualization notification to users

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Sub Project

Kakado

Technical specifications

- Limit hardware resources with cgroup
- Restricting user space with Linux namespace
- Limiting Storage space with LVM
- Manage and monitor processes with kakado engine

User profile

- User interface through CMD and CGI
- Create, edit, read and delete containers
- Creating a kakafile from container
- Automatic download of cache files from the repository
- Define the commands to be executed once on the newly created container
- Define the commands to be executed every time the container is executed
- Connecting to the monitoring and log server

2022

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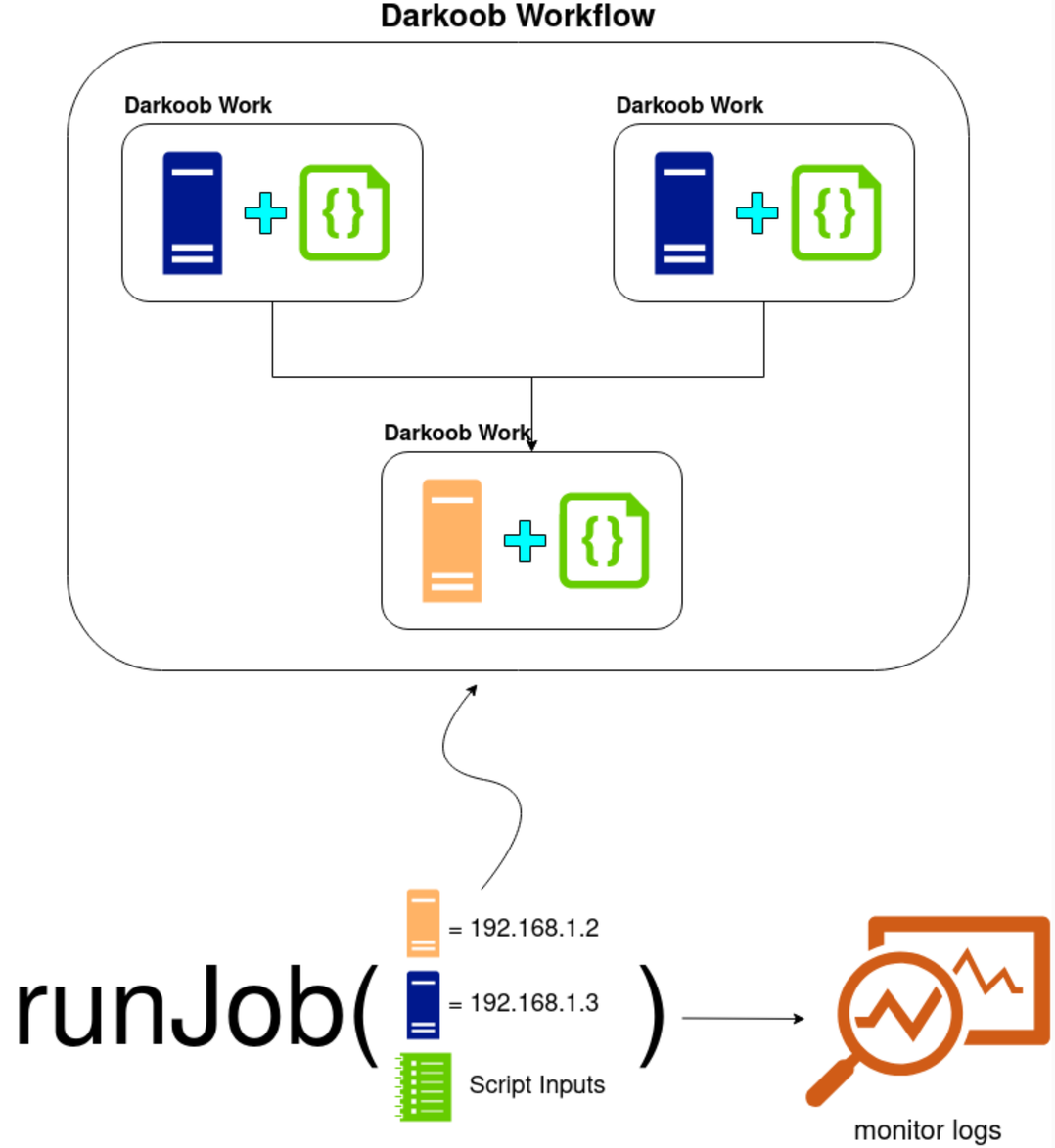
Sub Project

Darkoob

Darkoob


Darkoob Workflow
Darkoob Work
Darkoob Work
Darkoob Work
runJob(
= 192.168.1.2
= 192.168.1.3
Script Inputs
)
monitor logs

Darkoob

- Ability to run workflows and scripts on multiple servers at the same time
- Script support in different languages
- Can be used via UI or API
- Ability to view live scripts in UI or through API
- Managing user access to servers and scripts


Thanks!
QA