KARL

KUBE ACCELERATED REAL TIME LAB

The Evolution of IT Infrastructures

Who we are?

KARL is an IT company born with the mission of developing a product line of software tools based on the technology:

PCT N.°WO2023/012553

"System for the containerization of business workstations with low-cost remote user interfaces"

More in general, the mission of the company is to lead innovation in the IT infrastructure business, with a visionary approach, concentrating all our effort in conceiving and developing new technologies and solutions aiming Efficiency, Security, Scalability and Sustainability.

We strongly believe that Web 4.0 and all the new technologies connected to it will involve a radical transformation in IT infrastructure implementation and management models and archetypes. Our technologies and solution are conceived in the present to anticipate trend and tendencies.

The technology

The technology PCT N.°WO2023/012553 enables to use containers in place of virtual machines.
In other word a cluster of physical nodes (servers) is able to create self-consistent pods (virtual work station based on container technology), totally ephemeral in file management, reachable from any device and with any operating system even from remote office.

It can make containers an entity usable by any operator!
Thanks to KARL solutions virtual machines can be replaced by POD.

POD vs VM

What's the difference?

Virtual Machine
- Needs Kernel & Minimum pool of allocated resources.
- Need a complete replica of an OS to work
- Risk of crashes, faults & downtime
- Incident management costs with impact on productivity

Pod
- Needs only the necessary to run the "currently active instances"
- No waste of computational resources
- Help to isolate workloads
- Increase security of the environment
- Reduce costs of Incident management

What you gain??

Productivity
- Real time data certainty
- Infrastructure security
- **Possibility to assign resources to each pod dynamically (based on real-time needs)**

Benefits on costs
- Disruptive impact on assets costs (the solution can make work a pod on every kind of device
- Disruptive impact on incidents costs (in case of anomaly a pod just blows up and restart)
- High level of scalability of the solutions

KARL'S PHILOSOPHY

"Are You Sure You Are Currently Using Only What You Need?"

Real time needs approach...

Karl solutions are oriented to gain flexibility and scalability in IT infrastructures. We are obsessed by efficiency and we are committed to find all possible ways to optimize dynamically the use of resources. In a world like the IT that is quickly moving to an "As a Service" model the capability of managing resources is a key factor with impact on costs, productivity and sustainability.

Taking only what is strictly necessary on real time basis gives benefit to the organizations in terms of financial costs and to the planet in terms of environmental costs. This concepts, and the commitment to put them in practice leaded us in conceiving our technology and are still guiding us in developing usable solution on that.

When a Karl infrastructure is up and running each pod will be able to work using central nodes resources and taking only what the current real time processes need.

- Each single operator endpoint needs very few local resources. A raspberry pi connected to a screen and a network is enough;
- If we assume that we have 5 operators currently working on a Karl infrastructure: 4 are involved in ordinary word processing activities and 1 is involved in rendering. The single endpoint involved in rendering will take all the available resources with the exception of the few needed by the other 4 operator activities.

KARL'S PHILOSOPHY

Why does security reside in nothingness?
Because when I have nothing to lose, I take no risks"

The Theory of Nothing Approach...

This is the second topic of our Philosophy. Security is crucial to any IT infrastructure and we developed our solution taking it seriously in account.

When the customer calls up any type of desktop or web application, he establishes an RDP connection to a POD that was generated from scratch and which uses an ephemeral disc or a disc which through the copy on write technology does not keep any type of modification made on it, does not occupy space. At this point, two paradoxes arise:

- Let's assume that an attacker manages to get to the POD and install a ransomware, it wills imply been enough to click on the reboot button of the machine to make it disappear in the event horizon with its ransomware;
- The operator is working and needs to save data. Our technology has no impact on this part as the persistent and mapped part for the user according to the profile.

We specify that the recall time preparing and putting online a KARL POD fully configured to work is equal to 53 seconds, the disappearance time of the POD is equal to 6.

KARL SOLUTIONS

Software tools:

Karl Platform

Karl Platform is the software solution for creating, managing, and distributing Karl instances to users in cloud environments. The solution is compatible with public, private, and hybrid clouds, including those offered as IaaS by the main providers of such services worldwide (GCP, Azure, AWS, OCI) where a Kubernetes cluster is available.

Main product features

Through a simple and intuitive dashboard, it is possible to:

- Manage the underlying Kubernetes cluster;
- Manage the Karl System (i.e., the set of services and functions associated with the availability and use of Karl instances);
- Manage Karl Instance Pools (i.e., sets of Karl instances with the same characteristics);
- Manage the storage available to the pools. Karl Platform allows mounting any kind of cloud storage, hybrid storage, or local storage as persistent storage;
- Distribute Karl instances to users. This is the user-side functionality that could integrate corporate access policies and privileges.

Karl Platform is available for purchase under a volume licensing model based on the cores of the host infrastructure. Karl's proprietary licensing system is structured with real-time control of the license file generated by the vendor, ensuring the correspondence between the licensed core volume and the cores used.

"The product can only be purchased through partners in Karl's solution provider network."

KARL SOLUTIONS

Software tools:

Karl O.S.

Karl O.S. is primarily an operating system that can be classified as a hypervisor. The software allows for the creation, management, and monitoring of Karl instances as if they were regular virtual machines managed by a similar product, containing any required operating system and/or service. Essentially, through Karl O.S., the flexibility and innovation of native technology have been leveraged to offer a solution aimed at creating and managing virtual environments. In addition to this functionality, Karl O.S. is the operating system that enables the creation, management, and distribution of Karl instances to users in on-premise environments.

Main product features

Through a simple and intuitive dashboard, it is possible to:

- Manage the Kubernetes cluster integrated into the system;
- Manage the Karl System (i.e., the set of services and functions associated with the availability and use of KARL instances) not only in its typical function but also as an ordinary hypervisor;
- Utilize the traditional VM management functions of a hypervisor (snapshot, restore, migrate, etc.);
- Manage Karl Instance Pools (i.e., sets of KARL instances with the same characteristics);
- Manage the storage available to the pools. Karl O.S. allows mounting any kind of cloud storage, hybrid storage, or local storage as persistent storage;
- Distribute Karl instances to users. This is the user-side functionality that could integrate corporate access policies and privileges.

Karl O.S. is available for purchase under a volume licensing model based on the cores of the host infrastructure. KARL's proprietary licensing system is structured with real-time control of the license file generated by the vendor, ensuring the correspondence between the licensed core volume and the cores used.

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For more on our products take contact with one of our valuable partners. We'll help you to find the right provider if you mail us at info@karl-technology.com