

Robin.io Cloud Native Platform For Service Providers

Robin's Cloud Native Platform (CNP) is a superior Kubernetes cloud platform that runs both containers and Virtual Machines (VM), built from the ground up to outperform incumbent cloud solutions, provide industry leading features and flexibility, with unprecedented ease of use and automation.

Robin CNP is ideal for providers looking to deploy Open Radio Access Networks (O-RAN), 5G Core, Private 5G, Multi-access Edge Compute (MEC) and enterprise applications, with an "as-a-service" model, in a secure, multi-tenant and roles-based environment.

Furthermore, Robin CNP provides these advantages using an intuitive, declarative interface, with advanced automation, that reduces deployment complexity, time-lines and human error. You simply tell CNP what your resources to include, then CNP builds a reusable policy, models all of the resource configurations and auto-configures them for you, across the service's entire life-cycle-instantiate, start, stop, migrate, scale and delete.

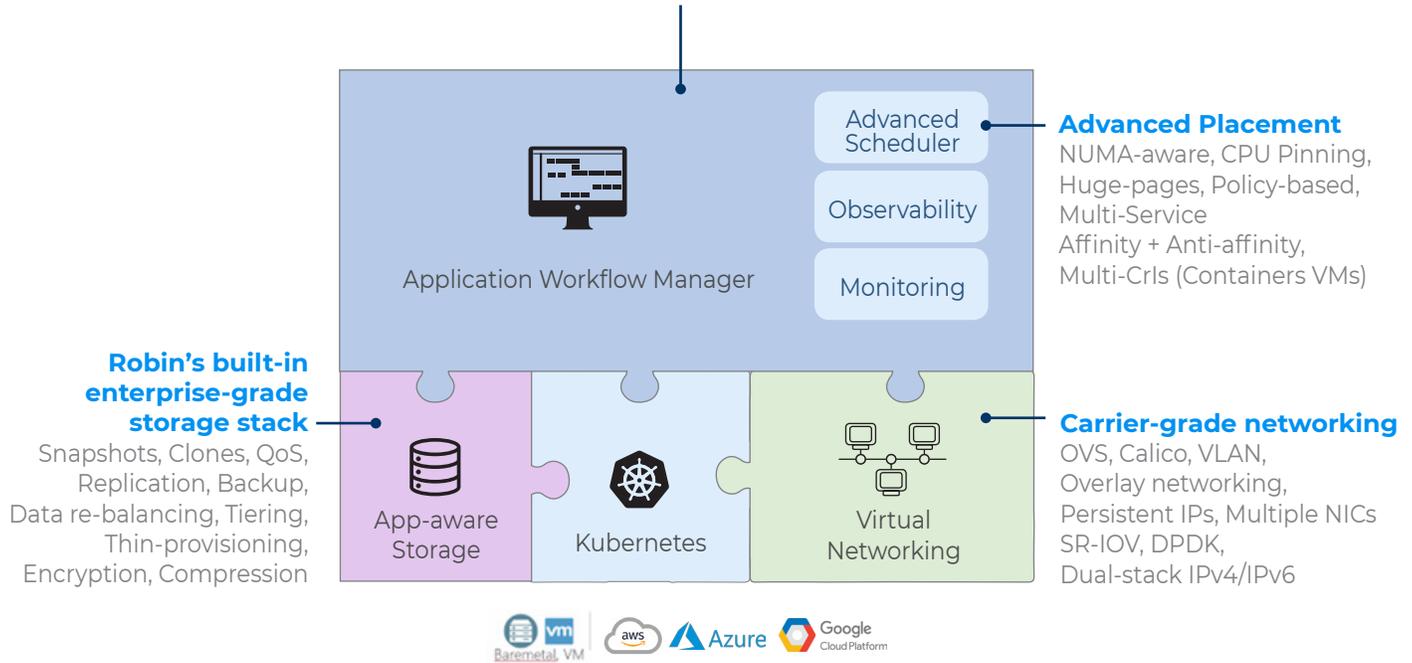


Platform Overview

- Streamlined, declarative, policy pinning, that allows you to request desired outcomes instead of manually configuring every element, card, slot and virtual mapping under the covers – CNP dynamically and automatically does the work for you
- Robin CNP continuously leads the industry by redefining intent-based workload placement, resource auto-detection, providing automated resource reservation and guaranteed Quality of Service (QoS) when auto-scaling/migrating/healing
- Built from the ground up with faster compute and storage, providing superior infrastructure utilization - supporting more services on your existing infrastructure
- Provides 1-click application on-boarding, with a large ecosystem of pre-packaged partner solutions
- Supports multi-container run-times enabling containers and VMs in the same or multiple clusters
- Multi-cloud portable, application aware storage supporting snapshots, clones, QoS, replication, backup, data re-balancing, tiering, thin-provisioning, encryption and compression
- Carrier-grade networking supporting Calico overlays, Single Root Input/Output Virtualization (SR-IOV) Data Plane Development Kit (DPDK) and Open vSwitch (OVS) underlays, as well as Network Interface Card (NIC) bonding, with Non-Uniform Memory Access (NUMA) aware affinity and anti-affinity, as well as dual-stack IPV4/IPV6
- Supports both stateful and stateless Kubernetes-based applications

1-Click or API-driven end-to-end Automation

Deploy, Scale, Heal, Upgrade, Snapshot, Clone, Backup, entire application pipelines



Works any where

Key Benefits

- Accelerates infrastructure and service turn-up time-lines for faster time to market (TTM)
- Reduces integration touch-points for application on-boarding, application policies and life-cycle management
- Automated, declarative and foolproof workload placement, with an easy to use, comprehensive, work-flow engine
- Edge-friendly, low-cost, small footprint
- Improves performance and reduces overhead, supporting VMs & containers on the same cluster, freeing you from your vendors' container roadmaps and breaking legacy cloud platform silos

Customer Validated Efficiencies

- First production containerized 5G stack, high throughput with millions of subscribers – full stack deployment with in-service Open RAN
- 80% reduction in deployment time-lines
- 40% OpEx reduction – Open RAN and 5G core
- 50% Capex savings – Open RAN and 5G Core
- 30% faster VM performance compared to incumbent platforms
- 3x faster storage performance

PLATFORM HIGHLIGHTS

Harmonized container and VM infrastructure

You are no longer tied to your vendor's containerization roadmap, licensing or support contracts. Realize sharable resource pools today, by deploying container-based Cloud-native Network Functions (CNF) and virtual machine-based Virtual Network Functions (VNF) on the same or separate high-availability clusters, reusing and sharing resources. This improves your flexibility in today's multi-vendor ecosystems. Furthermore, when using Physical NF (PNF)/VNF/CNF aware orchestration platforms, like Robin Multi Data Center Automation Platform (MDCAP), one can implement PNF, VNFs, and CNFs in the same workflows.

Advanced workload placement and QoS with an intelligent, declaratively configured, placement algorithm

Robin CNP guarantees that a migrated, rolled-back or restarted application has the exact resources required to meet Service Level Agreements (SLAs), every time. This is "automatically" enacted by and enforced with a wide reaching placement algorithm that auto detects, connects, and configures all of the resources needed for your application, based on easy to configure and reusable resource policies.

Resource allocation is declarative and based on your desired outcome, not all of the steps to get there. For example, you say "Give me 5 CPUs, multiple NICs and persistent IP addresses", then Robin CNP secures and configures them to support the application and later reuses those rules, based on triggered roll-back and restart events. In other words, Robin CNP users are not required to identify and configure free CPUs, NIC slots, NIC teams, SR-IOV virtual function IDs, IP address managers, NUMA nodes and the like, for every condition or state. Robin CNP does the work for you.

This not only helps simplify day 1 turnup activities, but simplifies day 2 planning and lifecycle operations. It leads to a better understanding of failover behavior, before it happens and with a far more efficient use of resources, with less human error.

Popular Robin-aware variables include NUMA-awareness, CPU pinning, multi-service affinity / anti-affinity policies, min/max IOPs values to eliminate noisy neighbors, CPU Pinning. Auto-discover SR-IOV enabled NIC cards, FPGA and GPU resources from the same NUMA node and allocate them to specific applications.

Advanced networking

NFs need greater networking flexibility and segmentation to maintain high throughput applications with minimal jitter. NFs have additional requirements, most of which are not addressed by legacy cloud platforms that can include: Per-pod Multi-IP network support, SR-IOV underlay networks for high throughput low jitter and redundancy, OVS underlays, Calico overlays, IPv4/IPv6 dual stack, persistent IP addresses across starts, stops, heals and migrations, as well as built in metalLB load balancer.

Application-aware storage

Allocate storage while deploying an application or cluster and share storage among apps and users. Get Service Level Agreement (SLA) guarantees when consolidating applications, support for data locality, affinity, anti-affinity and isolation constraints, and tackle storage for applications that modify the root filesystem, snapshots, clones, QoS, replication, backup, data rebalancing, tiering, thin-provisioning, encryption and compression.

New paradigm in dynamic workload monitoring

Go beyond simple lists, logs, and utilization graphs. Robin clusters and the policies they auto-enforce, are application aware, calculating placement based on detailed resource requirements, topology awareness, affinity/anti-affinity and service composition to name just a few. This enables the operator to better understand the system as a whole and make more informed decisions, for example customer impacting events and service degradation due to the addition of new services/applications or failure events.

1-click application bundles and workflow automation for Everything-as-a-Service

Robin CNP application management is driven by an intuitive, context-aware and easy to use workflow manager, with reusable elements. Furthermore, CNP's built-in roles based access and multi-tenancy promotes internal and external customer self-service, with an app-store experience, utilizing bundles for dozens of as-a-Service network functions, MEC and enterprise applications. Slash deployment and management times from weeks to minutes.

Large ecosystem of pre-integrated NFs and supporting applications

Provider applications include 5G Core, Open RAN, MEC hosting e.g. Content Delivery Networks (CDN) and high definition on-line gaming. Commonly used enterprise solutions including Cloudera, MySQL, Oracle, Elastic search, MongoDB, WordPress, Splunk, and many more – all with the ease of one-click deployment. Furthermore, the adaptive team at Robin will work with your vendor of choice to onboard additional provider NFs and customize Container Network Interface (CNI) plugins.

Closed-loop automation

Automate based on thresholds, deploy complex workloads and perform rolling upgrades. Safe-upgrade technology guarantees that failed upgrades can be rolled back without disrupting the application.

High Availability (HA) and additional stateful application support

With CNP there is no single point of failure. Get automatic app-aware data failover for complex distributed applications on bare metal. Robin CNP is the ONLY product to provide HA for stateful applications along-side traditional stateless applications.