

# SoftIron® & SUSE Rancher

Global collaboration, data residency legislation and the demand for low latency edge deployments are driving rapid change around how we manage data in the cloud. Organisations that might have previously stored all their data in a single, distributed public cloud as a quick-and-easy pathway to cloud services are now looking towards hybrid cloud and edge computing to meet their changing operational needs. Efficiently administering production and backup storage is becoming an increasingly demanding task as a result.

## Containerised microservices provide a modular approach to designing, testing and deploying complex applications at scale. But as you scale, how do you manage the storage layer underneath?

SUSE Rancher addresses the issue of deploying containerised, consistent and easily-tailored solutions across multiple environments by offering a 'single pane of glass' viewpoint. Amongst its many benefits is the increased flexibility to support cloud migration strategies and hybrid or multi-cloud environments. But when you're working with hybrid cloud, multi-cloud or edge computing environments, the challenges don't end there.



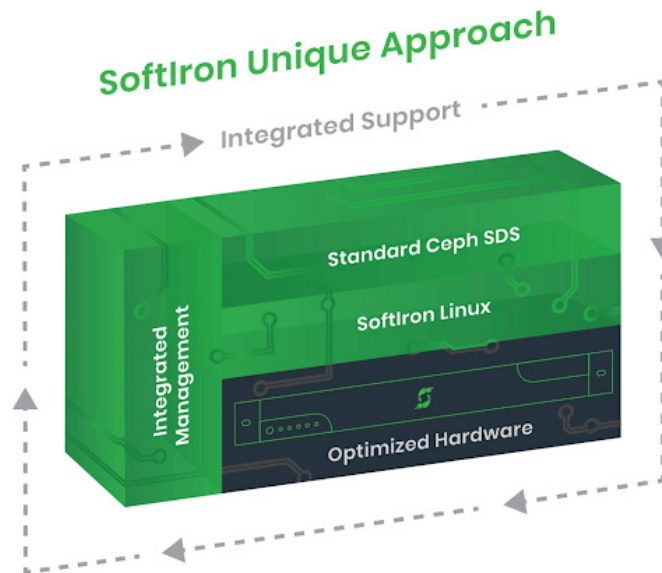
For a start, how will you:

- > Manage fluctuating and unpredictable storage demands without under- or over-provisioning storage,
- > Balance the expenses associated with scale in the public cloud with the administration demands of private infrastructure,
- > Keep power and cooling costs reasonable across a wide range of edge deployment environments,
- > Monitor cluster health across geographies and multi-tenancy environments,
- > Optimise storage media to ensure high performance and economical storage tiers are matched to their appropriate workloads, and
- > Access engineers with the skills required to administer your storage environments, when increased demand has led to a global supply shortage?

## Scaling your hybrid cloud and edge deployments can lead to a massive increase in your storage management overhead. But it doesn't have to be that way.

Just as SUSE Rancher provides a centralised management interface for your Kubernetes clusters, SoftIron's HyperDrive enables streamlined and efficient scalable block, object and file storage with the 'Linux of software-defined storage', Ceph.

Ceph is open source, and can run on anything, so there's no vendor lock-in when you choose to use HyperDrive in your Ceph cluster. However, generic hardware only delivers generic results - unlike HyperDrive, which has been engineered from the ground up to optimise the performance and agility of Ceph. With HyperDrive, you can streamline your day-to-day cluster administration and maintenance activities, and access unique features designed to remove some of the complexity from managing Ceph.



**SoftIron HyperDrive meets modern data infrastructure demands with the flexibility of open source and the power of task-specific performance**



### Available from the Rancher marketplace

There's a SoftIron app ready to go on the Rancher marketplace, to help you easily get started with container management on your HyperDrive Ceph clusters.



### Metadata bottlenecks begone

Want to implement a distributed file system for microservices? CephFS' efficient file metadata server allows workloads to scale without a hit to I/O, with obstacles to performance reduced even further by HyperDrive's task-specific engineering.



### Don't get blocked by the limitations of block storage

Rapidly mapping and detaching traditional block storage to containerised microservices for analytics, AI, machine learning and data science workloads can lead to performance and reliability issues. HyperDrive's full interoperability with Ceph minimises I/O bottlenecks for enterprise-ready performance, and RADOS enables scale and flexibility across object, block and file.



### Object storage tiering delivers economical scale

All storage in Ceph is underpinned by its foundational distributed object store layer, RADOS. This not only removes barriers to scale, but allows you to enforce replication policies that best suit your workload and backup requirements. Use Ceph's crush maps in combination with HyperDrive's flexible storage tiering to intelligently distribute long term data storage to slower, economical spinning disks, and keep your essential production data on rapid flash storage.



### Backup with immutability

Kubernetes offers built-in redundancy, but this alone won't tick the boxes for your organisation's backup, data recovery and archiving policies.

HyperDrive's support for data immutability (also known as S3 Object lock) provides WORM (write once, ready many) capability, by "locking" a known data set from change - ideal for resilience against ransomware attacks.



### Deploy anywhere, even at the edge

HyperDrive offers power-efficient, hyper-dense storage in a 1U form factor allowing you to maximise the storage potential of every rack. Combined with its hyper-efficient cooling features, HyperDrive is ideal for all kinds of edge use cases, whether you're collaborating across geographies or running services from the back of a commercial vehicle.



### Zero vendor lock-in

For too long businesses have had to choose between the limitations of integrated proprietary hardware and software solutions, or the complexity of a DIY approach.

Much like Rancher, there are no lock-in contracts with HyperDrive - you can use it in a mixed hardware Ceph cluster, or replace it completely should you choose. Grow and modify your cluster to suit your needs, with no limiting contracts.



### Access to the experts when you need them, with HyperSafe support

SoftIron offers world-class support services for Ceph, providing organisations with robust and flexible service offerings tailored to their particular storage infrastructure needs.

There are support tiers to match every need, with add-on services on request, so that you can match your support level to your exact needs.



### Confidence in the face of increasing supply chain attacks

Because HyperDrive is uniquely constructed from the component-level up within SoftIron's own manufacturing facilities, it can be opened up to a 360° audit, with a full forensic chain of custody. That means it's possible to verify whether the product you received is identical to the one that left SoftIron's factory floor - critical for mitigating the risk of hardware trojan-based infiltration.



### Consistently manage your data while meeting legislative requirements

With many nations establishing citizen data residency legislation, and the increasing demand for sovereign cloud services, HyperDrive offers a storage-dense, high performance, and low power cost option for maintaining clusters within a country's boundaries. Use in combination with Rancher to rapidly deploy storage and backup clusters consistently and economically across geographies.



### Multi-protocol storage for your microservices environment

Protocols available include:

- S3 and Swift compatible RESTful HTTP API,
- iSCSI,
- SMB, and
- NFS.

Since NFS does not have load balancing and redundancy built into the protocol, this is implemented via HyperDrive by using a floating IP address that is shared between service nodes.

You can also create your own interface for accessing Ceph block, object and file storage using Ceph's native protocols with LIBRADOS.



### Keep storage simple, including in multi-tenant environments

With Rancher to keep your deployments consistent and HyperDrive to centralise your storage management tasks, including managing multi-tenancy configuration, you can streamline your administration activities to manage users, projects and clusters consistently.

Integrate Ceph with popular external authentication providers including Active Directory and LDAP, let Rancher manage your RBAC, and apply best practice security policies uniformly across all your hybrid cloud environments.



## There's no better way to unleash the power and utility of Ceph than with HyperDrive

Streamline your adoption of Ceph and unlock performance breakthroughs like no generic hardware Ceph cluster can, without the limitations of hardware or software vendor lock-in. In an increasingly complex data storage world, SUSE Rancher and SoftIron HyperDrive provide an open-source-first approach to centralising and streamlining the deployment and management of your microservices application infrastructure.

### Take The Next Step

Interested in taking HyperDrive for a test drive?  
Visit [softiron.com](http://softiron.com) to get started.



SoftIron® is the world-leader in task-specific appliances for scale-out data center solutions. Their superior, purpose-built hardware is designed, developed and assembled transparently, and they are the only manufacturer to offer secure provenance. SoftIron's HyperDrive® software-defined, enterprise storage portfolio runs at wire-speed and is custom-designed to optimize Ceph. HyperSwitch™ is their line of next-generation, top-of-rack switches built to maximize the performance and flexibility of SONiC. HyperCast™, built on FFmpeg, is their high-density, concurrent 4K transcoding solution, for multi-screen, multi-format delivery. SoftIron unlocks greater business value for enterprises by delivering best-in-class products, free from software and hardware lock-in. For more information visit [softiron.com](http://softiron.com)



At SUSE, we believe every business is on a journey of digital transformation, and that transformation can be enhanced and accelerated by open innovation. In today's hyper-connected world, innovation is occurring virtually everywhere – in the data center, in the cloud, at the edge and beyond. The most successful businesses will be those that capitalize on open and interoperable solutions that let them harness innovation, no matter where it occurs.

SUSE is exceptionally prepared to help each business Choose Open, with the industry's most adaptable Enterprise Linux and a leading Container Management solution that provides full management of all Kubernetes distributions. Because SUSE is truly open, businesses can choose the right combination of technology and solutions to ensure their business success. At SUSE, our mission is to help our customers innovate everywhere.



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