



includeOS

About Basefarm

Basefarm is a managed service provider for mission critical IT. They manage and run IT-solutions for hundreds of customers in several European countries.



Basefarm's Infrastructure

Basefarm has a big and complex network consisting of thousands of virtual machines, spread across several datacenters. Today, most of their machines are virtualised running on several different hypervisors, VMware VCenter being the dominant one.

IncludeOS® Liveupdate

IncludeOS® Liveupdate allows for disruption free upgrades of running IncludeOS instances. During an update, IncludeOS will store it's current state in memory. Then the new, updated image is executed and then the stored state is restored - without noticeable downtime.

The challenge

In most networks there's a need for certain functions to be present in various parts of the network. Firewall, routing, load balancing are the most common functions. Traditionally these functions have been implemented as physical boxes. Today, a lot of these functions are virtualised and they are then commonly referred to as Network Virtual Functions (NFV).

The dominant actors in the NFV market have solutions available. However, these are often proprietary to a specific hypervisor, expensive, cumbersome or complex. By deploying IncludeOS® NVFs Basefarm identified an opportunity for significant savings, both in terms of direct costs as well as through improved operational effectiveness. In addition this also leaves Basefarm free to pursue a multi hypervisor strategy.

ID	UUID	Alias	NetCI	Launched	Updated	
00:0c:2b:1e:9d:97	32f4d252e333a8-29e4734797461e3	-	-	05.02.2019 16:09	-	[Manage] [Delete]
00:0c:2b:1e:9d:97	05b4d204bdfac3-346ca00001e2c7	-	-	05.02.2019 16:09	-	[Manage] [Delete]
00:0c:2b:85:00:8c	34044c00911674b-a18191296c0087	starbase1	full proxy firewall	05.02.2019 16:09	05.02.2019 16:11	[Manage] [Delete]
00:0c:2b:82:8c:94	50b4d204bdfac3-346ca00001e2c7	-	-	05.02.2019 16:09	-	[Manage] [Delete]
00:0c:2b:8d:9b:04	872b4c00911674b-a18191296c0087	-	-	05.02.2019 16:09	-	[Manage] [Delete]
00:0c:2b:1e:9d:97	43b4d204bdfac3-346ca00001e2c7	-	-	05.02.2019 16:09	-	[Manage] [Delete]
00:0c:2b:19:0e:78	40f4d204bdfac3-346ca00001e2c7	-	-	05.02.2019 16:09	-	[Manage] [Delete]
00:0c:2b:8d:9b:04	3b414d00911674b-a18191296c0087	-	-	05.02.2019 16:09	-	[Manage] [Delete]

The solution

Basefarm decided to use IncludeOS® Mothership to manage a fleet of small, fast and efficient IncludeOS Virtual appliances. The solution allows Basefarm to utilise unikernel NFV appliances in their infrastructure without having to program the appliances themselves.

Easy, fast and clear configuration

IncludeOS instances are configured using the NaCl language. This language is specifically crafted to configure all aspects of the network functions provided by IncludeOS.

During deployment NaCl is compiled to optimised binary code. This gives IncludeOS a significant performance edge over other NFV appliances.

Modern web UI

IncludeOS Mothership comes with a modern web UI giving you full control over your running fleet of IncludeOS instances. There is a built in editor for NaCl configuration complete with syntax validation and highlighting.

Fully API driven

The Mothership comes with a complete and documented API, making it easy to integrate into your existing configuration management system. This makes it possible to automate everything aspect of the NFV management.

The NaCl-based configuration language has proven to be flexible, intuitive and powerful, allowing Basefarm full control over traffic flow inside their network.

Updates without downtime

By using IncludeOS Liveupdate to update the appliances updates and configuration changes can take place without noticeable downtime. Liveupdate performs a hotswap of the running application, without losing state. This allows maintenance to take place during normal working hours without the need for scheduling downtime. This allows for greater flexibility and higher efficiency.

Time taken from committing a change to the change being reflected in production is a critical metric for Basefarm. Mothership makes sure that the changes are pushed out within 10 seconds.

Cost effective virtual machines

IncludeOS® instances are tiny compared to fully fledged Linux-based virtual machines. Depending on workload the instances can be deployed with as little as 64 megabytes of memory and only about 10 megabytes of storage. When running thousands of instances the savings become significant. The configuration management systems is easy and allows for powerful automation. New appliances can be deployed in a fully automated manner.

Do you want to see IncludeOS demonstrated?

If you are interested in getting a demonstration of IncludeOS® Mothership, please get in touch with us.

For demonstration purposes the system can be deployed in a cloud environment or on your local hypervisor.

You can reach Per Buer, our CEO, at perbu@includeos.com.

