

**CUBE**

 **INFINITY**

**Welcome on board!**



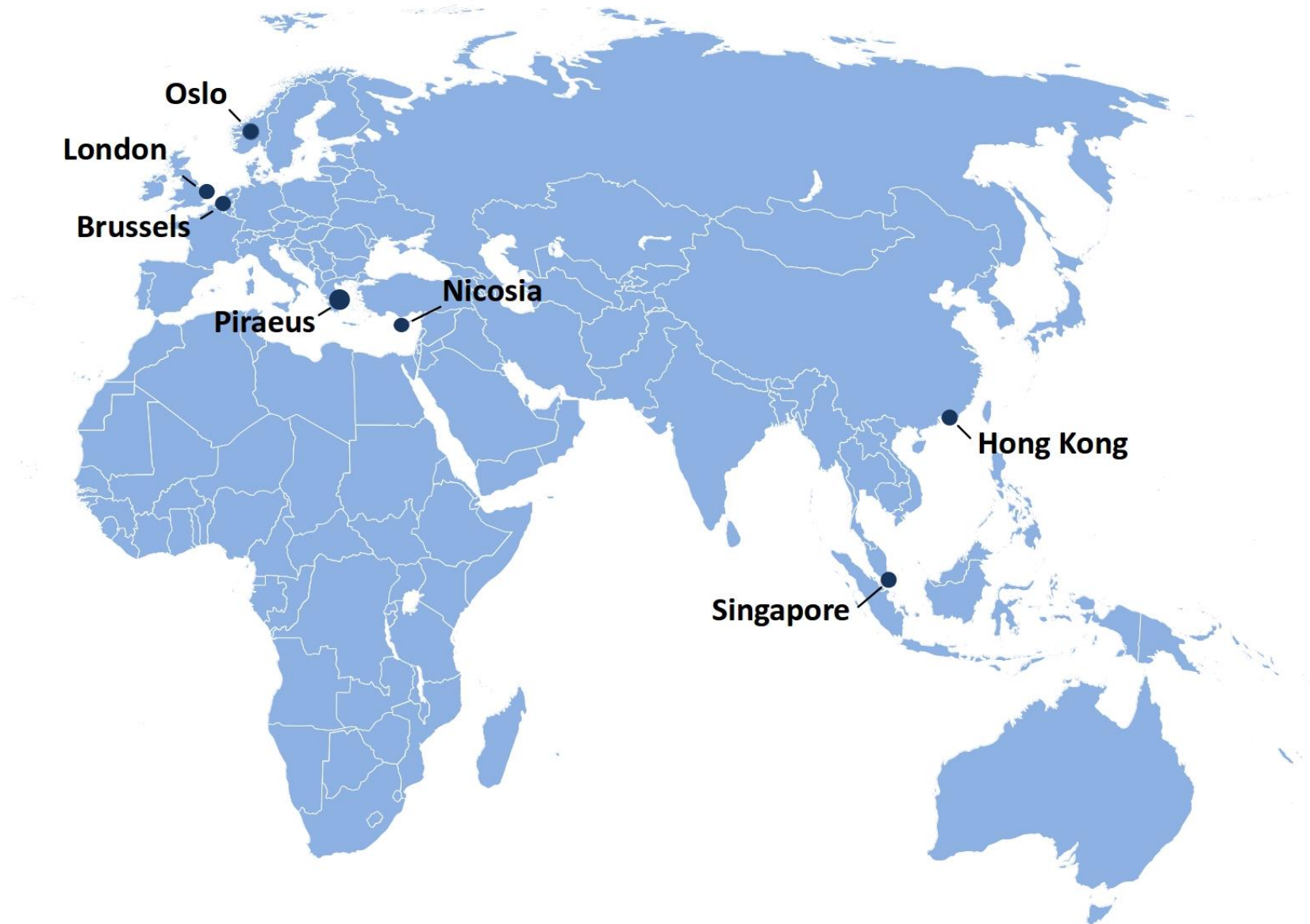
**The first complete and fully managed cloud-on-board.**



- ➔ Specialized in **merchant shipping** satellite communications.
- ➔ Over 500 Shipping companies across 14 countries, providing 3,000 vessels, (2,500 vessels directly and a further 500 through agents) with connectivity solutions.
- ➔ Self financed, no debts.
- ➔ 7 existing offices in major shipping centres. Greece, Norway, UK, Singapore, Hong Kong, Cyprus, Belgium.









- ➔ Global Xpress VAR (Value Added Reseller) since 2013.
- ➔ Navarino is the developer and distributor of INFINITY.
- ➔ 12% of the global FleetBroadband traffic is generated by Navarino customers.
- ➔ Heavy investment in innovative and technologically advanced solutions.





## Infinity is comprised of

---

An industrial pc or  
server onboard the  
ship

An instance in the  
cloud

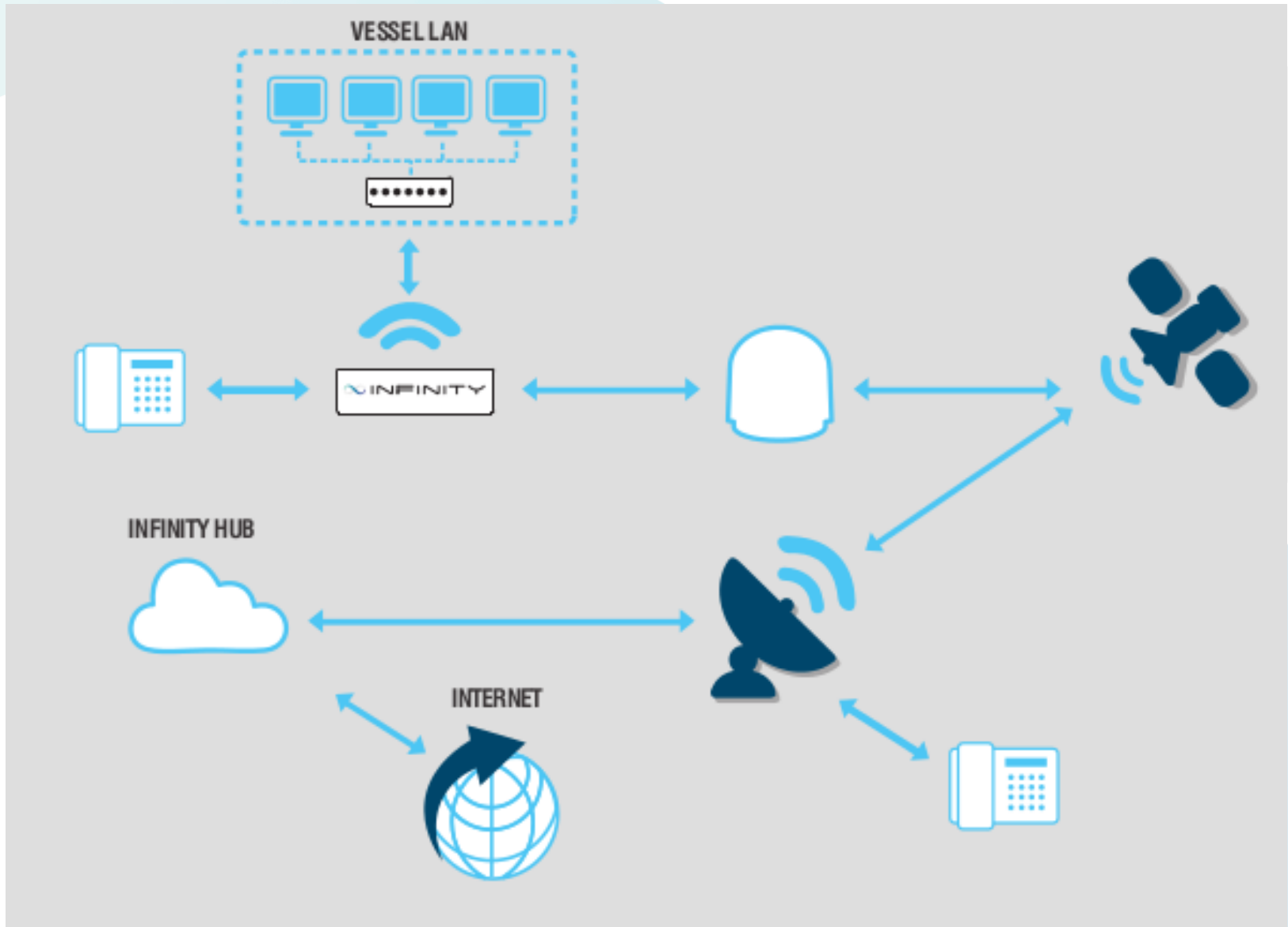


Infinity Software at  
ship and onshore

A web interface



## How it works





# Infinity Types

INFINITY



## Standard - Standard RM

Aluminum Compact with fanless Design, Intel® Celeron® J1900 Processor 2GHz, 4GB RAM DDR3L 1333 MHz, 2xSSD SQF 32GB, SATA 2.0, 4 x Gigabit LAN

INFINITY PLUS



## Fanless

Aluminum Compact with fanless Design, Intel® Core™ i7-4650U ULT 1.7GHz 4<sup>th</sup> Gen, 8GB RAM DDR3L 1600 MHz on board, 2xHDD 2.5" 1TB 7200RPM 32MB Cache, SATA 3.0, 4x Gigabit LAN

## RM Advantech

Advantech RM server, Intel® Core™ i3-4330 3.5GHz, 8-64 GB RAM DDR3 1600 MHz on board, 2x HDD 2.5" 1TB, 7200RPM 32MB Cache, SATA 2.0, 4x Gigabit LAN

INFINITY PLUS



CUBE

INFINITY



## Infinity Plus | Infinity Cube (Dell R230 - R430 - T430 - R420XR)

Dell PowerEdge servers with 1U Rack mount Chassis (R models), 64-bit Intel® Xeon® processors (E5-2600 v5 product family for R430/T430 & E5-2400 v2 product family for R420XR) with 8-384 GB RAM (E3-1200 with 8-64 GB RAM for R230), 6x LAN, 4x HDD Disk 1TB Near Line SAS, Hot-plug hard drives and power supplies, Cabling, 5-year Worldwide hardware Support on site by Dell  
Infinity Cube has two nodes and it also includes:

- 2 x 24-port managed switches 1Gbps
- 1 PDU
- 2 x Dell Cable Management ARM 1U





- Launched in 2012
- Remote & onboard set up and administration of Virtual Machines
- Easy Deployment of new applications
- Infinity functionality embedded

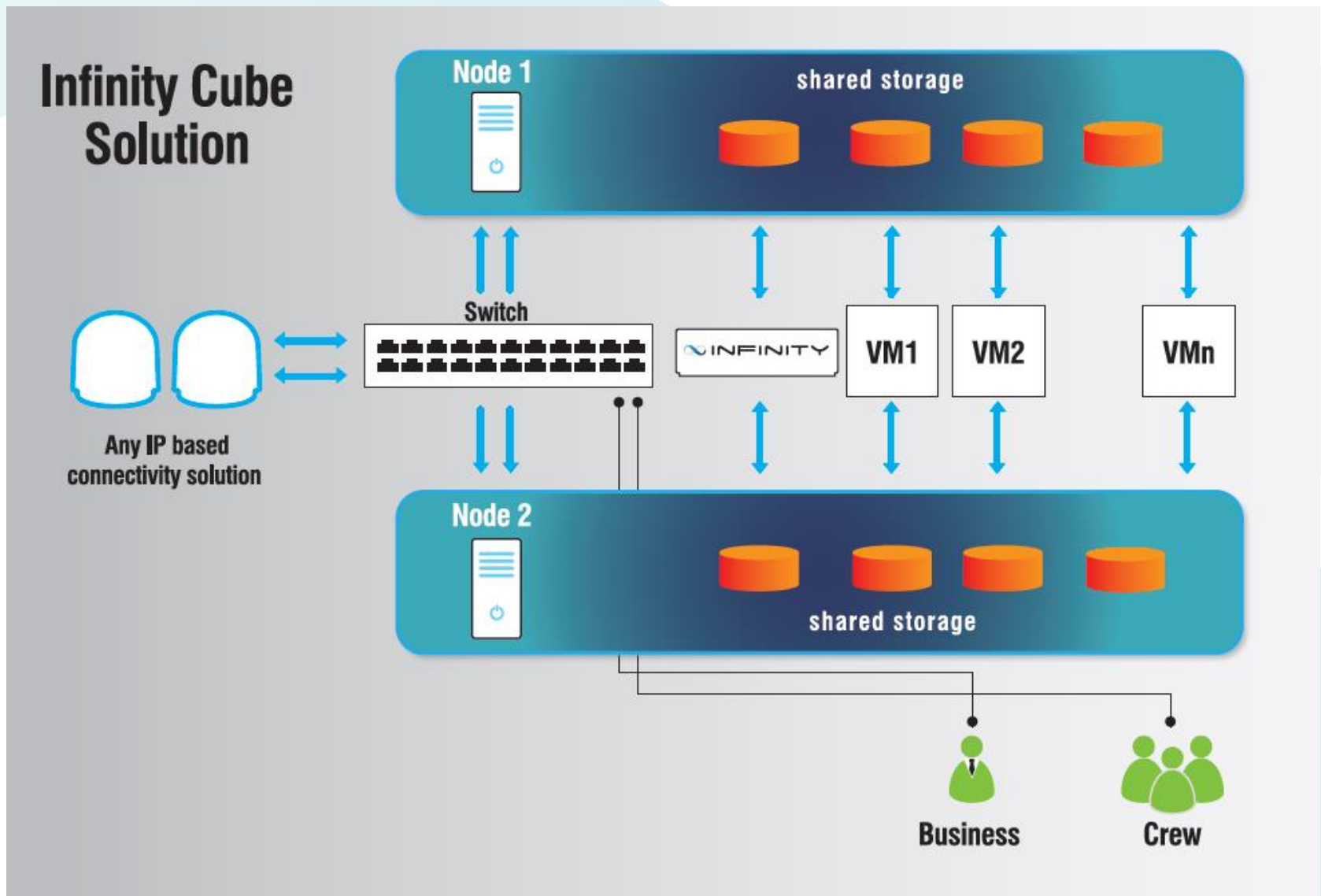




- High Availability environment with Active-Active Clustering
- Advanced Virtualization environment
- Consolidation of the onboard IT infrastructure
- 24/7 Remote onboard IT support
- Content delivery onboard
- The first “Cloud on board” for merchant vessels



## The first “Cloud on board” solution



High Availability environment with active-active clustering



# Infinity – Main features



Crew calling PINs or registered users



Crew internet access with PINs or registered users



Web surfing with compression.



Fully managed firewall and router including "fleet wide" rules



E-mail service with compression



File Synchronization



Failover and load balancing



Ship to Shipping company free VoIP



Web Services (SOAP & XML)



File to email/  
email to file



Quality of Service



Address book replication



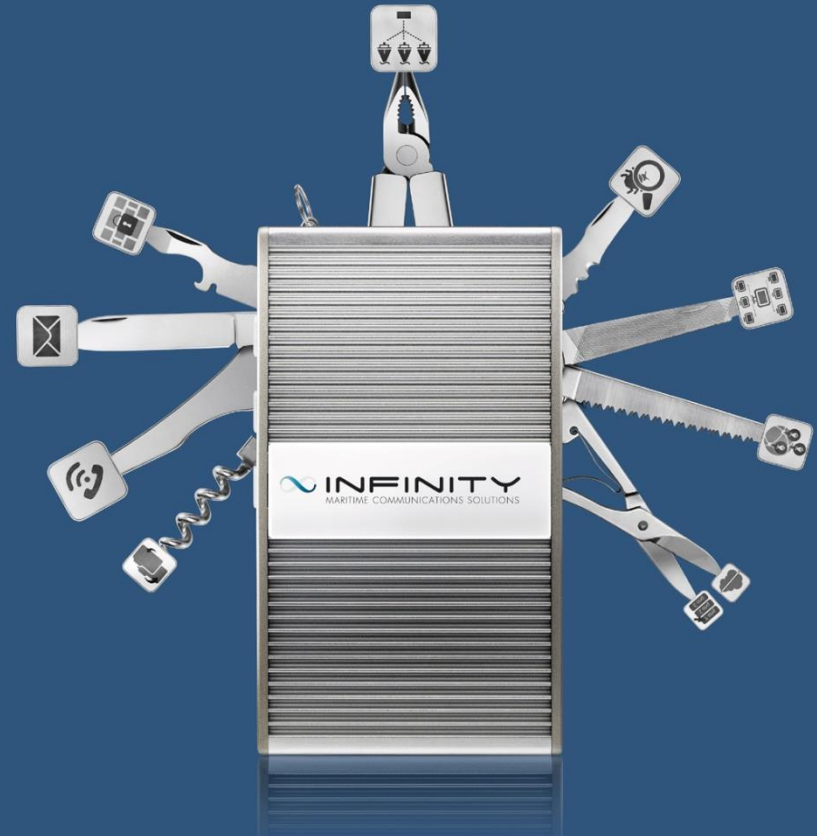
Virtualization



High availability



Advanced Recovery Option





# Infinity - Supplementary features



Light versus Normal  
Surfing on Demand



Web Accelerator



Access Control Lists



File Type filtering  
for e-mail and web,  
including Smart  
e-mail filtering



Advanced Content  
Filtering including  
Antivirus



Vessel live position,  
speed and heading  
calculation and  
status reporting



Virtual LANs



Functionality with  
automatic queries



Traffic measuring  
and reporting



VPN Connectivity



Remote monitoring  
of critical functions



Security and Audit  
trail



Kill All – Kill any



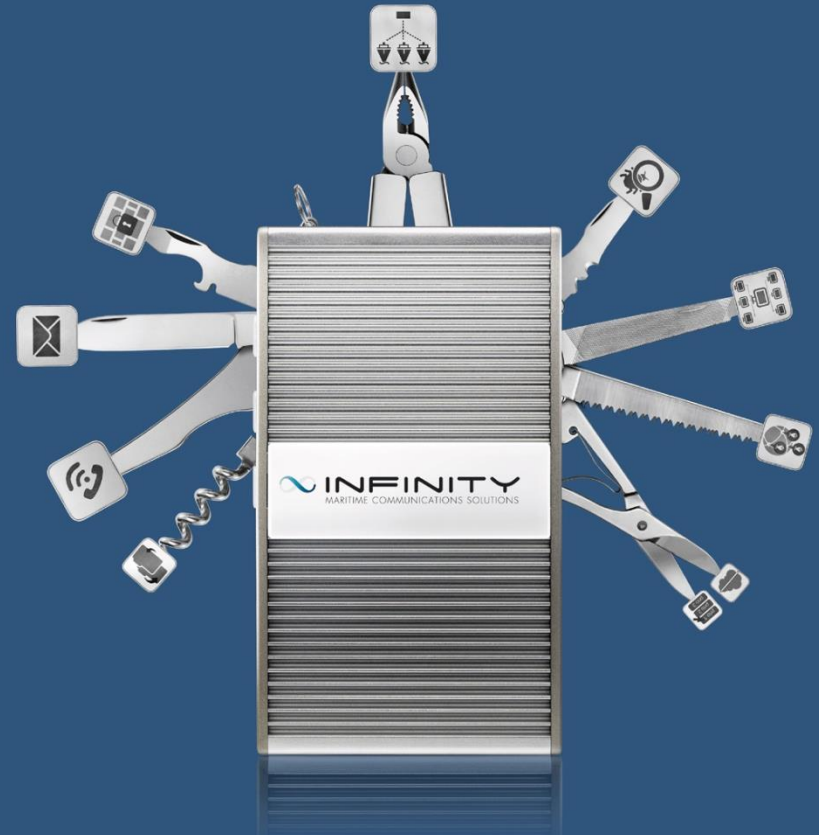
Multicast Support



IPv6



Areas of Interest





## Infinity Plus and Cube additional functionality

	Infinity Plus	Infinity Cube
Virtualization capabilities	•	•
Web Manageable Virtualization platform through a user friendly interface	•	•
VDI Support	•	•
Remote Set-Up and Installation on New VM's	•	•
Continuous Data Replication		•
Clustering Management and Administration Tools		•
Cluster-Aware File System and Volume Management		•
Shared Storage		•
Full redundancy with active-active clustering		•



# Advanced Virtualization environment

INFINITY Cube allows to remotely **setup new virtual machines** and **install software applications** in them.

The screenshot shows the INFINITY web interface in a browser window. The address bar displays the URL: `10.30.1.90/index.php?module=virtualmachines&action=managevirtualmachines`. The interface includes a top navigation bar with the INFINITY logo, user information (User: sm, Logout), and a UTC time display. A left sidebar contains a 'Hide' button and a list of navigation items: Home, Configuration, Telephony, Management, Fleets, Vessels-Users, Office Units, Quotas, Filtering, Remote Proxies, Synchronize Vessels, Mail Queue, Hotspot, Mail Filters, Current Quota Status, Virtual machines (highlighted), Vpn, Self registration applications, Users Purchases, Hub reporting, Vessels Position, Logs, Traffic Report, and Admin. The main content area features a 'Select vessel:' dropdown menu set to 'incluster-single (tun1: 192.168.199.30)', with buttons for 'Refresh', 'Show Processes', and 'VNC Certificates'. Below this is a 'CREATE VM' section with a 'Name:' field and several dropdown menus for 'OS' (Windows), 'Node' (inf-node2.local), 'VCPU' (1), 'RAM' (128 MB), 'HDD' (Select Hard disk), 'Bus' (Virtio), 'DVD' (Attach physical DVD/CD ROM), 'ISO1' (Empty disk drive), and 'ISO2' (Empty disk drive). A 'Create' button is at the bottom of this section. To the left of the 'CREATE VM' section is a 'VIRTUAL MACHINES' list showing icons and names: freenas, klna-app, oracle, ovirt, test0, tilos-dc2, w2008-phy, and win7. At the bottom of the main content area is a 'Synchronization Vessels Queue' button.



# Advanced Virtualization environment

Remote monitoring of the hardware, the clustering and the VMs status

The screenshot displays the INFINITY web interface for remote monitoring. The browser address bar shows the URL `10.30.1.90/index.php?module=virtualmachines&action=managevirtualmachines`. The interface includes a sidebar menu with options like Home, Configuration, Telephony, Management, Fleets, Vessels-Users, Office Units, Quotas, Filtering, Remote Proxies, Mail Queue, Hotspot, Mail Filters, Current Quota Status, Virtual machines, Vpn, Self registration applications, Users Purchases, Hub reporting, Vessels Position, Logs, Traffic Report, and Admin.

The main content area features the INFINITY logo and a user login section (User: sm, Logout). Below this, there are buttons for Overview, Create VM, Hard Disks, ISO Images, and Create Disk. A section titled "VIRTUAL MACHINES" lists several VMs: freenas, kina-app, oracle, ovirt, test0, tilos-dc2, w2008-phy, and win7.

The "Cluster Nodes Overview" table shows the status of cluster nodes:

#	Node Name	Status	Action
1	inf-node1.local	Online	[Start] [Refresh]
2	inf-node2.local	Online	[Start] [Refresh]

The "Virtual Machines Overview" table shows the status of virtual machines:

#	VM Name	Node	Status	Action
1	freenas	inf-node1.local	Started	[Start] [Stop] [Refresh] [Pause] [Unpause] [Eye]
2	kina-app	inf-node2.local	Started	[Start] [Stop] [Refresh] [Pause] [Unpause] [Eye]
3	oracle	inf-node1.local	Started	[Start] [Stop] [Refresh] [Pause] [Unpause] [Eye]
4	ovirt	inf-node1.local	Started	[Start] [Stop] [Refresh] [Pause] [Unpause] [Eye]
5	test0	inf-node2.local	Disabled	[Start] [Stop] [Refresh] [Pause] [Unpause] [Eye]
6	tilos-dc2	inf-node2.local	Started	[Start] [Stop] [Refresh] [Pause] [Unpause] [Eye]
7	w2008-phy	inf-node1.local	Started	[Start] [Stop] [Refresh] [Pause] [Unpause] [Eye]
8	win7	inf-node1.local	Started	[Start] [Stop] [Refresh] [Pause] [Unpause] [Eye]

At the bottom, there is a "Synchronization Vessels Queue" button.



# Advanced Virtualization environment

## Virtual CDs manipulation

mainhub navarino x

10.30.1.90/index.php?module=virtualmachines&action=managevirtualmachines

INFINITY

User: sm Logout UTC Help

Select vessel: incluster-single (tun1: 192.168.199.30) Refresh Show Processes VNC Certificates

Overview

Create VM

Hard Disks

ISO Images

Create Disk

**VIRTUAL MACHINES**

- freenas
- kine-app
- oracle
- ovirt
- test0
- tilos-dc2
- w2008-phy
- win7

**ISO IMAGES**

#	Name	Capacity	Format	Used by	Actions
1	archlinux-2014.01.05-dual.iso	528MB	raw		Clone Delete
2	CentOS-6.5-x86_64-bin-DVD1.iso	3GB	raw		Clone Delete
3	cor__ffg.iso	8MB	raw		Clone Delete
4	Core-current3.iso	8MB	raw		Clone Delete
5	debian test.iso	222MB	raw		Clone Delete
6	debian-7.19.0-amd64-netinst.iso	222MB	raw		Clone Delete
7	Fedora-Live-Desktop-x86_64-20-1.iso	953MB	raw		Clone Delete
8	FreeBSD-10.0-RELEASE-i386-dvd1.iso	2GB	raw		Clone Delete
9	FreeNAS-9.2.1.5-RELEASE-x64.iso	215MB	raw		Clone Delete
10	FreeNAS-9.2.1.7-RELEASE-x64.iso	197MB	raw		Clone Delete
11	FreeNAS-9.2.1.8-RELEASE-x64.iso	198MB	raw		Clone Delete
12	Install-amd64-minimal-20140403.iso	256MB	raw		Clone Delete
13	Install-amd64-minimal-20140724.iso	187MB	raw		Clone Delete
14	install-x86-minimal-20140415.iso	247MB	raw		Clone Delete



## Industry-leading Technology department

- ➔ Any connectivity option through satellite circuit needs a bandwidth management and optimization tool. The solution is INFINITY.
- ➔ The most successful product on its category with a proven record of 4,000+ successful installations. You are encouraged to ask for references and to make your own comparison tests.
- ➔ Dedicated team of system developers and engineers to tailor our solutions according to your requirements.

You ask for more, you get more





Thank you!