

R/V SIKULIAQ Technical Infrastructure



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R/V SIKULIAQ

<http://www.sikuliaq.alaska.edu>



Networking Overview

- Internet Connections and Capacity
- Service Statuses
- Functional Capabilities

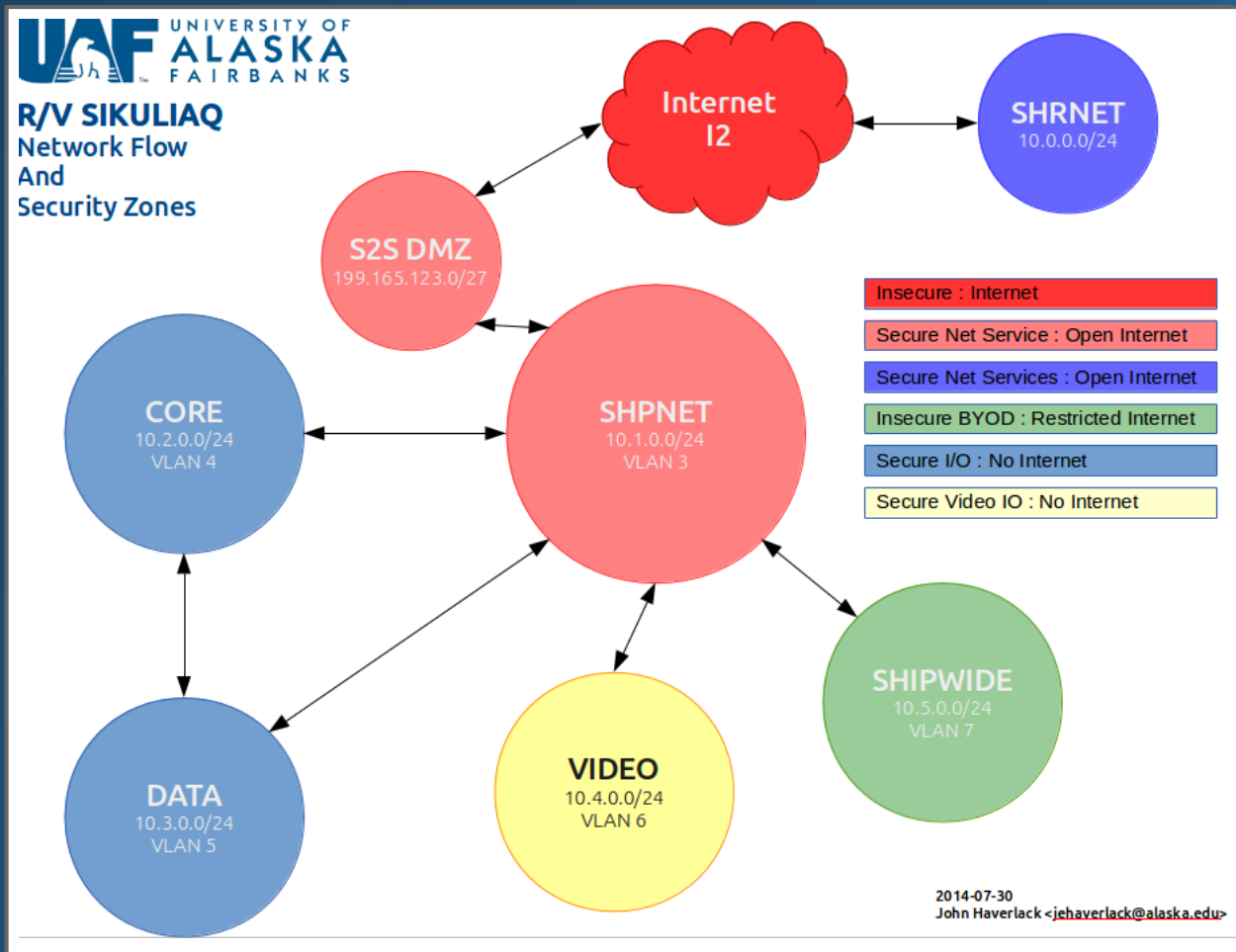


R/V SIKULIAQ

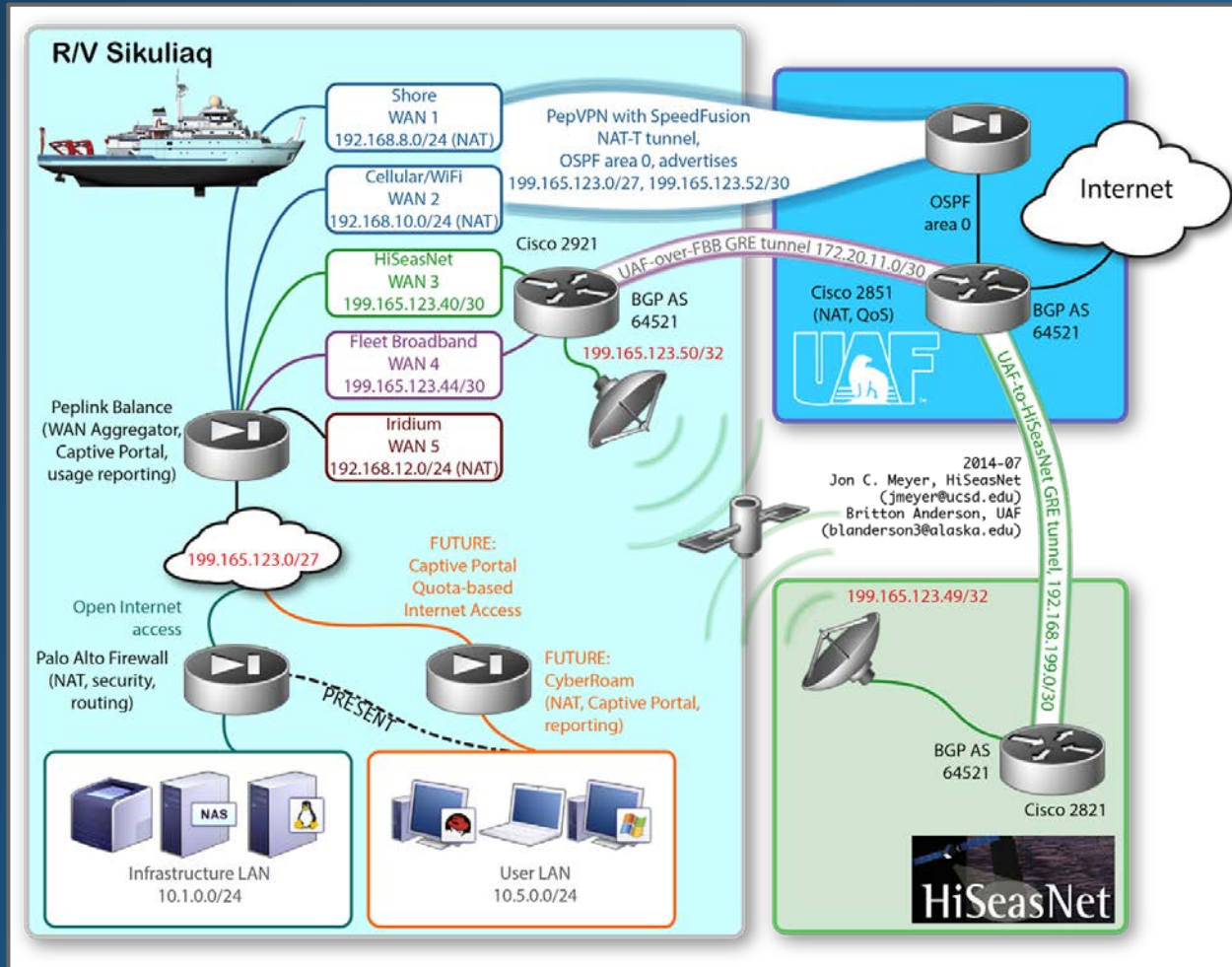
<http://www.sikuliaq.alaska.edu>



Ship Side Network



Internet Services



Service Provided by UA OIT Network Operations

Wireless Services

- **SHIPWIDE** (PSK) Wireless SSID
- ~20 WiFi Access Points (WAP)
- 2 External WAP
- Excellent Coverage in and outside the ship
- Mesh Network WAP



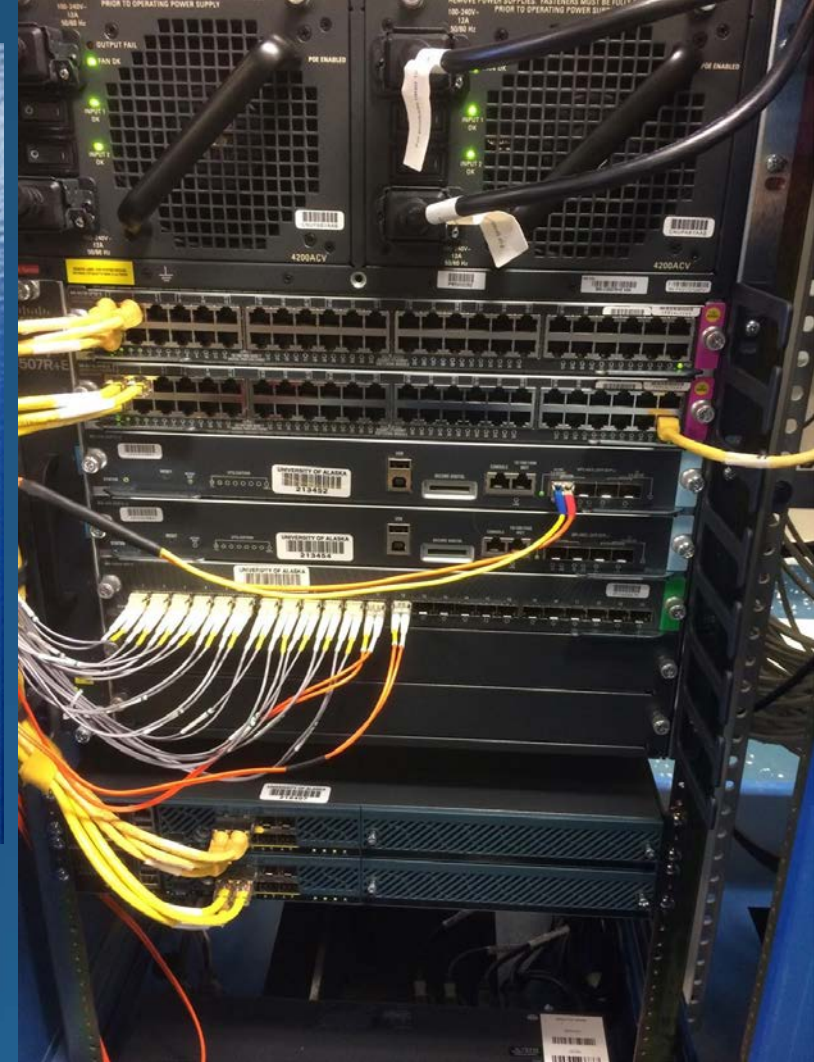
Service Provided by UA OIT Network Operations



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Mast Block



IT Overview

- Deployment Efforts
- Video Matrix
- Science Data Archive Repository
- VM Servers
- Storage Systems
- Configuration Managed CentOS Installer
- Ship to Shore Chat
- Ship Tracker
- Shiplside Website
- Wikipedia Mirror
- Electronic Library



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SKQ201400T Science and IT Efforts

June & July ~ 10 person team

- Estimated 8000 hours

Oct/Nov - 3 Person team

- 600 Hours

Network IPs

- 249 Fixed
- 100 Dynamic

Network

- ~20 switches replaced
- ~20 WiFi Access Points

- ~60 IT Systems Installed

<https://www.sikuliahq.alaska.edu/ops/?q=node/180>



Service Catalog



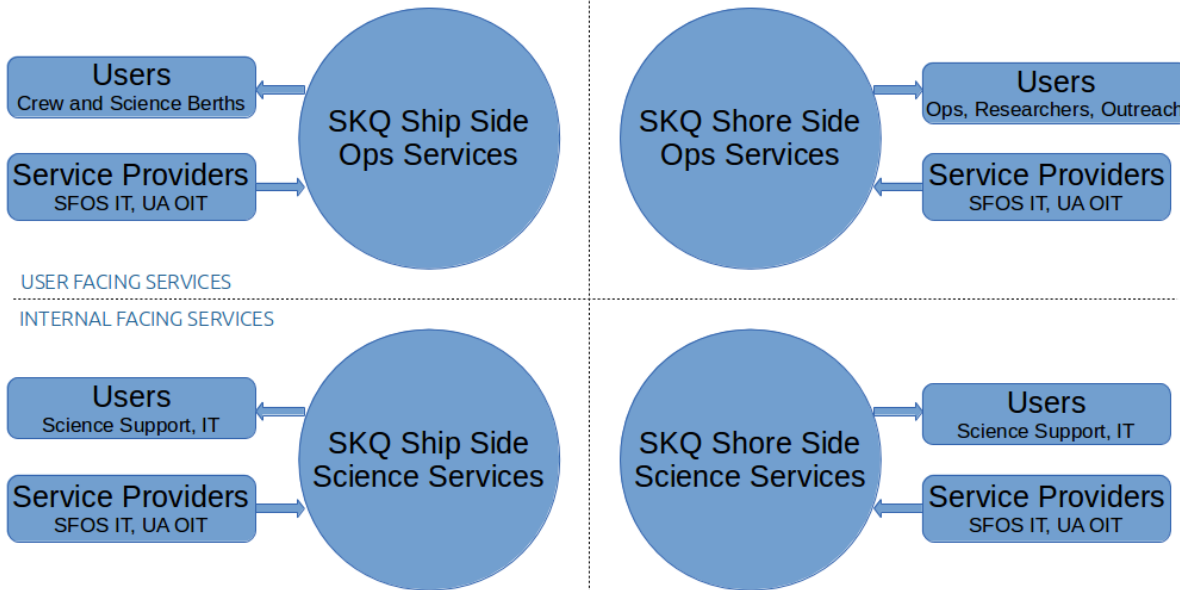
School of Fisheries and Ocean Sciences

R/V SIKULIAQ Service Catalog

SFOS IT Managed Services

SHIP SIDE

SHORE SIDE



SKQ SHP Ops

- ~10 Services

SKQ SHP Science

- ~60 Services

SKQ SHR Ops

- ~10 Services

SKQ SHR Science

- ~30 Services

2014-08-29



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Video Matrix

Matrix Switch

- 32 DVI Inputs
- 32 DVI Outputs
- 20 DVI over Cat 5e

KVM over IP

- 5 Consoles
- 12 single head
- 6 dual head

TV

- 24 Channels
- Over COAX

Matrox MaeveX

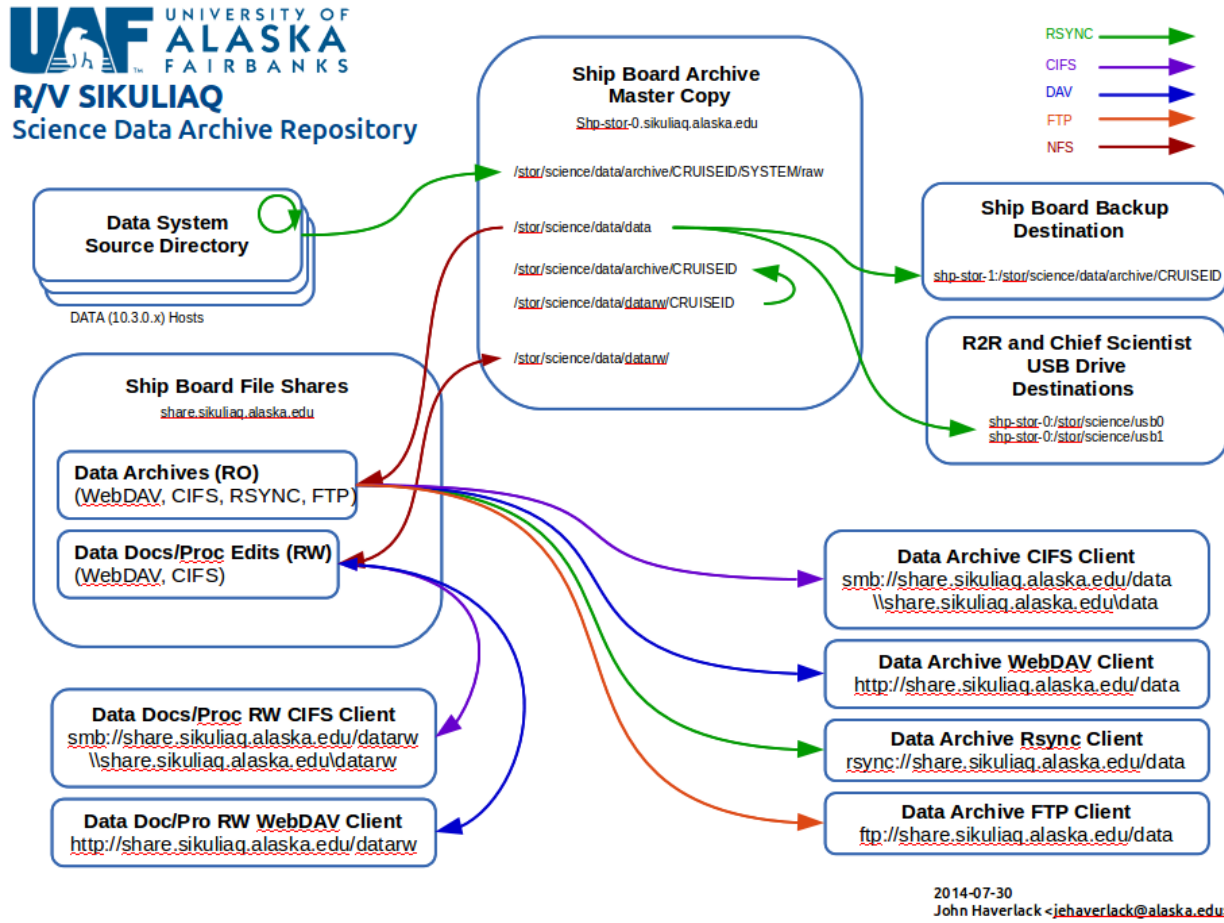
- Video over IP
- 4 encoders
- 4 decoders



Service Provided by SFOS IT and SKQ Science Support

Science Data Archive Repository (SDAR)

<https://web.sfos.uaf.edu/trac/sfositsm/ticket/3>



Gas in Data Out

10 TB / Year

1 year Archive on board

UNOLS NSF R2R Archive


<http://www.rvdata.us/>

Service Provided by SFOS IT



Science Data Archive Repository (SDAR)

<https://web.sfos.uaf.edu/trac/sfositsm/ticket/3>


UTC Time: 2014-11-12 18:04:56

R/V SIKULIAQ
SDAR Server v1.0_2014-11-10

Home
Cruises
Queries
Help

Science Data Archive Repository (SDAR) Server


SDAR Server Status

Current CruiseID	SDAR Status	SYNC Status	Archive Usage	Archive Free
SKQ201400L8	ACTIVE	SYNCING	397G/9.9T = 5%	9.0T/9.9T

All Cruises

CruiseID	Status	Sync	Start Time	Finish Time	% Cruise Complete	Depart	Arrive	Comment
SKQ201400L1	FINAL_SYNC	ACTIVE	2014-06-06T00:00:00Z	2014-07-13T00:00:00Z	100%	Marinette	Cleveland	Delivery to Cleveland
SKQ201400T	FINAL_SYNC	ACTIVE	2014-06-06T00:00:00Z	2014-11-16T00:00:00Z	98%	Marinette	Honolulu	Post Delivery Transit
SKQ201400L2	FINAL_SYNC	ACTIVE	2014-07-14T00:00:00Z	2014-08-10T00:00:00Z	100%	Cleveland	WHOI	Cleveland to WHOI
SKQ201400L3	FINAL_SYNC	ACTIVE	2014-08-11T00:00:00Z	2014-09-04T00:00:00Z	100%	WHOI	WHOI	Multibeam Trials at WHOI
SKQ201400L4	FINAL_SYNC	ACTIVE	2014-09-05T00:00:00Z	2014-09-11T00:00:00Z	100%	WHOI	San Juan	Juan WHOI to San Juan
SKQ201400L5	FINAL_SYNC	ACTIVE	2014-09-12T00:00:00Z	2014-09-12T00:00:00Z	100%	San Juan	Juan	San Juan Winch Testing at San Juan
SKQ201400L6	FINAL_SYNC	ACTIVE	2014-09-22T00:00:00Z	2014-10-20T00:00:00Z	100%	San Juan	Juan	Honolulu Panama Canal Transit
SKQ201400L7	FINAL_SYNC	ACTIVE	2014-10-21T00:00:00Z	2014-11-04T00:00:00Z	100%	Honolulu	Honolulu	Underway Testing at Honolulu
SKQ201400L8	CURRENT	ACTIVE	2014-11-05T00:00:00Z	2014-11-16T00:00:00Z	70%	Honolulu	Honolulu	Sentry Shakedown at Honolulu
SKQ201401S	FUTURE	INACTIVE	2014-11-17T00:00:00Z	2014-12-12T00:00:00Z	0%	Honolulu	Honolulu	Baco-Taylor Cruise
SKQ201400P	FUTURE	INACTIVE	2014-12-13T00:00:00Z	2014-12-15T00:00:00Z	0%	Honolulu	Honolulu	Honolulu
SKQ201402S	FUTURE	INACTIVE	2014-12-16T00:00:00Z	2015-01-15T00:00:00Z	0%	Honolulu	Guam	Tominaga Cruise
SKQ201500L9	FUTURE	INACTIVE	2015-01-16T00:00:00Z	2014-02-11T00:00:00Z	0%	Guam	Ketchikan	Transit to Ketchikan

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Science Data Archive Repository (SDAR)

<https://web.sfos.uaf.edu/trac/sfositsm/ticket/3>


Internet Status: ●
UTC Time: 2014-11-12 18:00:30

R/V SIKULIAQ

SDAR Server v1.0_2014-11-10

Home
Cruises
Queries
Help

Science Data Archive Repository (SDAR) Server

Cruise ID: SKQ201400L8

CruiseID	Status	Sync	Start Time	Finish Time	% Cruise Complete	Depart	Arrive	Comment
SKQ201400L8	CURRENT	ACTIVE	2014-11-05T00:00:00Z	2014-11-16T00:00:00Z	70%	Honolulu	Honolulu	Sentry Shakedown at Honolulu

Data Aquisition System	Archive Size	Archive Mtime	DAS Client Host	Last Checkin	Last Sync Status
adcp	20K	2014-11-12T18:06Z	shp-hg-0.sikuliahq.alaska.edu	● OK (0 secs)	SUCCESS
ctd	16K	2014-11-09T01:42Z	shp-ctd-0.sikuliahq.alaska.edu	■ OVERDUE (1415815596 secs)	MISSING
ek60	16K	2014-11-09T01:42Z	shp-ek60-0.sikuliahq.alaska.edu	■ OVERDUE (1415815596 secs)	MISSING
em302	7.3G	2014-11-10T22:19Z	shp-em302-0.sikuliahq.alaska.edu	● OK (7 secs)	SUCCESS
em710	1.5G	2014-11-12T14:27Z	shp-em710-0.sikuliahq.alaska.edu	● OK (2 secs)	SUCCESS
knudsen	16K	2014-11-09T01:42Z	shp-knudsen-0.sikuliahq.alaska.edu	■ OVERDUE (1415815596 secs)	MISSING
lds	1.6G	2014-11-12T18:06Z	shp-lds-0.sikuliahq.alaska.edu	● OK (2 secs)	SUCCESS
soundguard	16K	2014-11-09T01:42Z	shp-soundguard-0.sikuliahq.alaska.edu	■ OVERDUE (1415815596 secs)	MISSING
topaz	16K	2014-11-09T01:42Z	shp-topaz-0.sikuliahq.alaska.edu	■ OVERDUE (1415815596 secs)	MISSING
xbt	16K	2014-11-09T01:42Z	shp-ctd-0.sikuliahq.alaska.edu	■ OVERDUE (1415815596 secs)	MISSING

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Virtual Machine and Storage

3x VirtualBox Servers

- 24 Core CPU
- 64 GB RAM
- 7 TB Usable
- ~50 VM Capacity Each
- 41 VMs Running
- RAID 6

3x NAS Storage Servers

- 16 2 TB Drives
- ~25 TB Usable
- RAID 6 + Hot Spare
- Hot swappable Redundant PS
- Redundant UPS ~40 minute Runtime



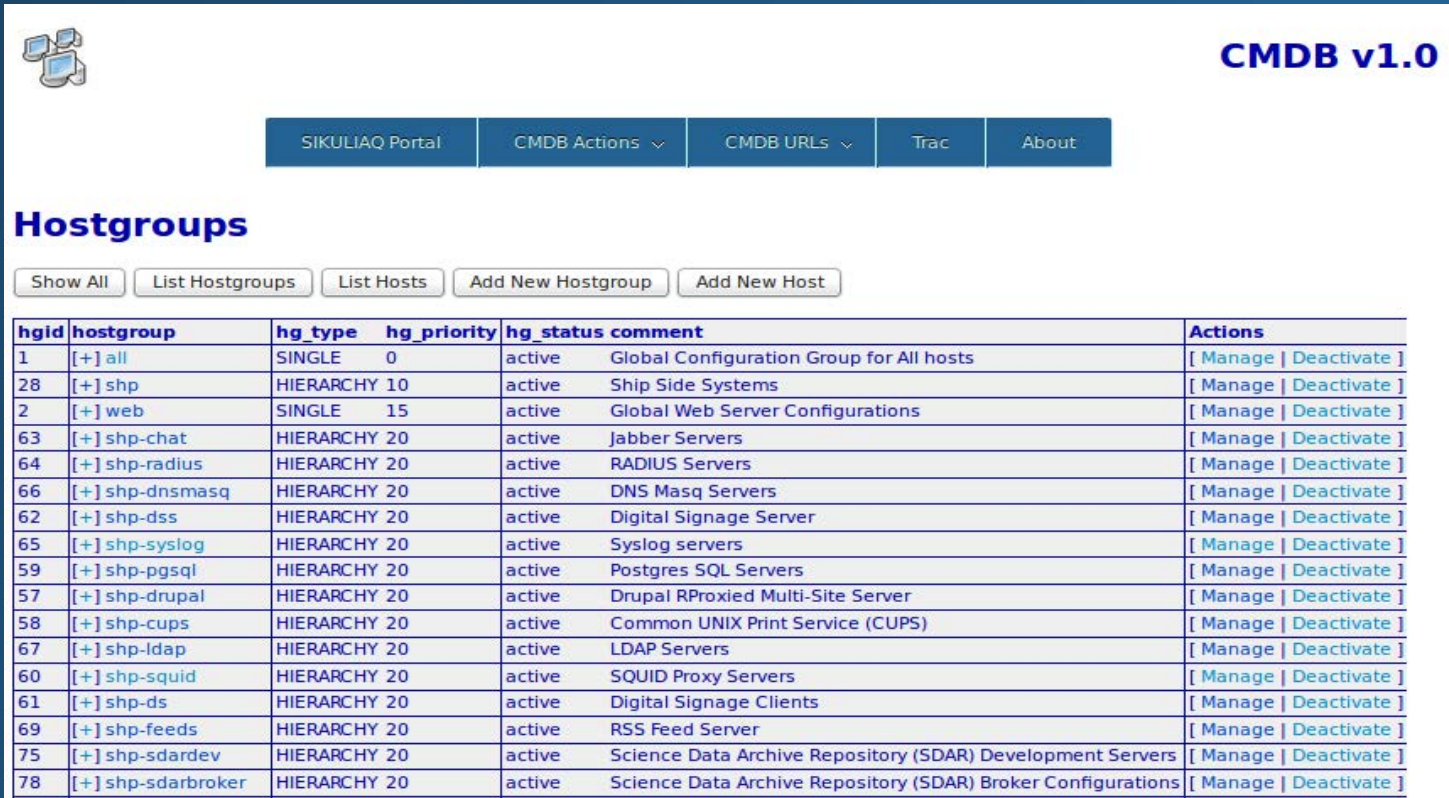
Configuration Managed CentOS Installer

Physical and
VM host
Profiles

Fresh host
install in
about 15
minutes

Patched and
configured.

Mix of
Kickstart,
Apache,
Puppet, SVN,
and MySQL



The screenshot displays the CMDB v1.0 web interface. At the top right, the version 'CMDB v1.0' is shown. Below the navigation bar, the 'Hostgroups' section is active, featuring buttons for 'Show All', 'List Hostgroups', 'List Hosts', 'Add New Hostgroup', and 'Add New Host'. A table lists various hostgroups with columns for 'hg_id', 'hostgroup', 'hg_type', 'hg_priority', 'hg_status', 'comment', and 'Actions'. Each row includes a '+' icon in the 'hostgroup' column and 'Manage' and 'Deactivate' links in the 'Actions' column.

hg_id	hostgroup	hg_type	hg_priority	hg_status	comment	Actions
1	[+] all	SINGLE	0	active	Global Configuration Group for All hosts	[Manage Deactivate]
28	[+] shp	HIERARCHY	10	active	Ship Side Systems	[Manage Deactivate]
2	[+] web	SINGLE	15	active	Global Web Server Configurations	[Manage Deactivate]
63	[+] shp-chat	HIERARCHY	20	active	Jabber Servers	[Manage Deactivate]
64	[+] shp-radius	HIERARCHY	20	active	RADIUS Servers	[Manage Deactivate]
66	[+] shp-dnsmasq	HIERARCHY	20	active	DNS Masq Servers	[Manage Deactivate]
62	[+] shp-dss	HIERARCHY	20	active	Digital Signage Server	[Manage Deactivate]
65	[+] shp-syslog	HIERARCHY	20	active	Syslog servers	[Manage Deactivate]
59	[+] shp-pgsql	HIERARCHY	20	active	Postgres SQL Servers	[Manage Deactivate]
57	[+] shp-drupal	HIERARCHY	20	active	Drupal RProxied Multi-Site Server	[Manage Deactivate]
58	[+] shp-cups	HIERARCHY	20	active	Common UNIX Print Service (CUPS)	[Manage Deactivate]
67	[+] shp-ldap	HIERARCHY	20	active	LDAP Servers	[Manage Deactivate]
60	[+] shp-squid	HIERARCHY	20	active	SQUID Proxy Servers	[Manage Deactivate]
61	[+] shp-ds	HIERARCHY	20	active	Digital Signage Clients	[Manage Deactivate]
69	[+] shp-feeds	HIERARCHY	20	active	RSS Feed Server	[Manage Deactivate]
75	[+] shp-sdardev	HIERARCHY	20	active	Science Data Archive Repository (SDAR) Development Servers	[Manage Deactivate]
78	[+] shp-sdarbroker	HIERARCHY	20	active	Science Data Archive Repository (SDAR) Broker Configurations	[Manage Deactivate]

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<http://www.sikuliaq.alaska.edu>



Ship to Shore Jabber Chat

The screenshot shows a web browser window with the address bar displaying "chat.sikuliao.alaska.edu". The browser's address bar also shows several tabs: "jehaverlack", "SFOS", "SHORE", "SHIP", and "UA Gmail". The website header features the UAF University of Alaska Fairbanks logo and the text "R/V SIKULIAQ" and "Text Chat Services".

Summary

Welcome to R/V SIKULIAQ Ship to Shore Text Chat Service. Through this service persons on shore and onboard the R/V SIKULIAQ can chat via text in real time.

To get started you will need 2 things:

1. A Chat Login Account
2. Chat Client Software

NOTE: SIKULIAQ Chat services are based on the XMPP Jabber protocol and should be compatible with XMPP Jabber client software. To facilitate easy set up, the supported SIKULIAQ chat client is Spark. The other clients are known to work. For simplicity sake we refer to Jabber, XMPP, IM (Instant Message) interchangeably using the term Chat.

1. Registering a New Chat Account

To request a SIKULIAQ chat account, please send an email to support@sfos.uaf.edu. You will be contacted with your username and password once your account is ready.

2. Install and Configure Chat Client Software

The easiest way to get connected is to download and install the Spark Chat client software.

Spark Installer Download Links:

- [Windows](#)
- [Mac](#)
- [Linux \(Redhat / CentOS\)](#)
- [Linux Other](#)

Logging in to Chat

The screenshot shows the Spark Instant Messenger login window. It features a world map at the top, the Spark logo, and a form with the following fields and options:

- Username:
- Password:
- Server:
- Save password
- Auto login

At the bottom of the window, there are links for "Accounts#", "Advanced", and "Login".

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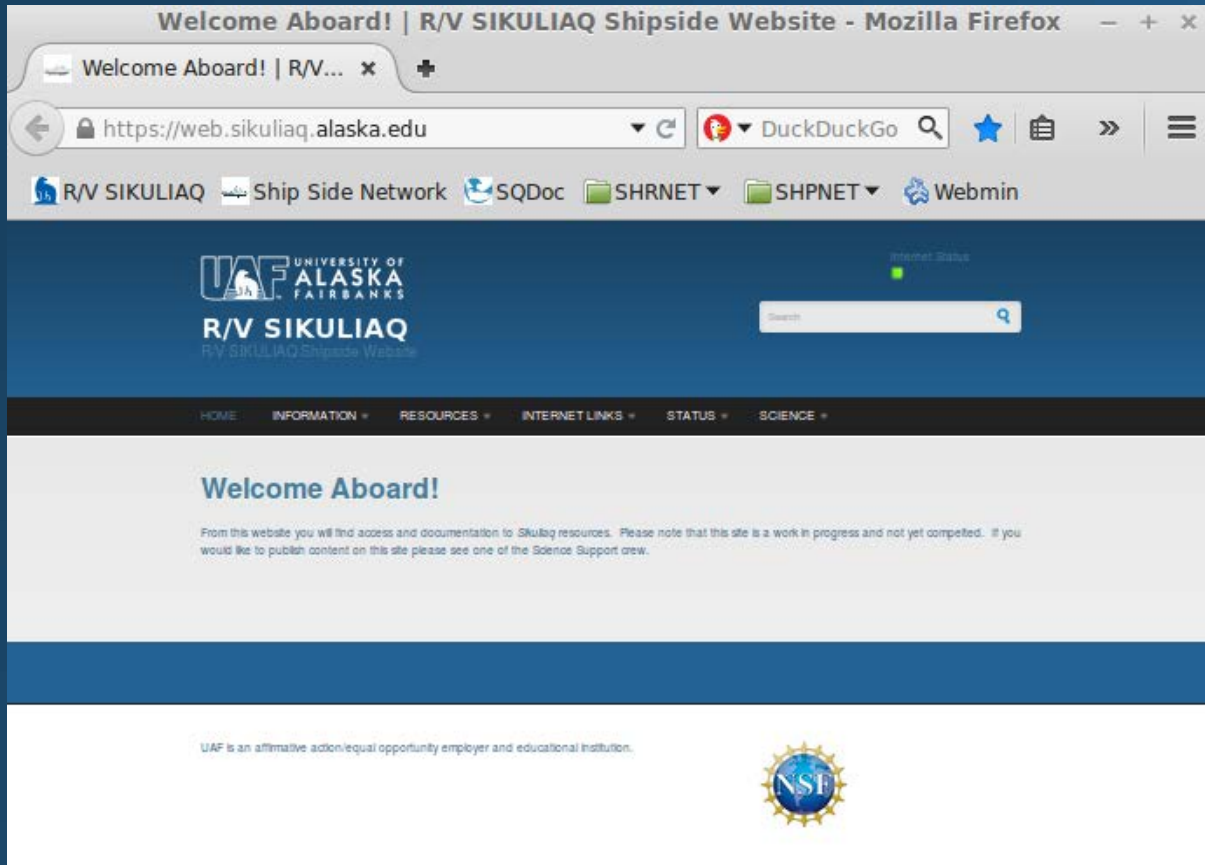


R/V SIKULIAQ

<http://www.sikuliao.alaska.edu>



Ship Side Web and File Shares



- Drupal Instances
- Web applications
- Wikipedia Mirror
- Electronic Library

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<http://www.sikuliaq.alaska.edu>



Ship Tracker

<https://www.sikuliahq.alaska.edu/track>

- Near Real Time - once per minute
- In Beta Test
- Future Features:
 - Ship Track
 - Meta Data (Weather, Depth, ...)

Time	Location	Track	Heading/Altitude	Speed	GPS
Current Time: 2014-09-15 @ 17:27:36 UTC	Latitude: 19.3917794 N	True N: 225.64°	True N: 63.09°	0.1 knots	2 Quality
Location Updated: 2014-09-15 @ 17:26:03 UTC	Longitude: 65.43718305 W	Mag N: 238.97°	-19.92m	0.3 km/h	09 Satellites

19°23'30.4\"N 65°26'13.9\"W

Directions Save

View on Google Maps

Sanchez, Hato Mayor del Rey, Consuelo, Higuey, Punta Cana, La Romana, Mayagüez, Isabela, Vega Baja, Carolina, Ponce, Puerto Rico, San Juan, British Virgin Islands, Anguilla, Gustavia, Virgin Islands

Hide Map Zoom: 7 Page Refresh: 60 seconds Go

- This page will auto refresh every 60 seconds. Data is only updated once per minute.
- This page is under active development and may break occasionally.

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