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Senior Network Communications Specialist  
University of Alaska, OIT Network Operations

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IT Manager  
UAF School of Fisheries and Ocean Sciences
Networking Overview

- Internet Connections and Capacity
- Service Statuses
- Functional Capabilities
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

R/V SIKULIAQ

http://www.sikuliaq.alaska.edu
IT Overview

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

http://www.sikuliahq.alaska.edu
Service Catalog

R/V SIKULIAQ Service Catalog

SFOS IT Managed Services

SHIP SIDE

Users
Crew and Science Berths

Service Providers
SFOS IT, UA OIT

SKQ Ship Side Ops Services

SHORE SIDE

Users
Ops, Researchers, Outreach

Service Providers
SFOS IT, UA OIT

SKQ Shore Side Ops Services

Users
Science Support, IT

Service Providers
SFOS IT, UA OIT

SKQ Ship Side Science Services

SKQ Shore Side Science Services

SKQ SHP Ops
• ~10 Services

SKQ SHP Science
• ~60 Services

SKQ SHR Ops
• ~10 Services

SKQ SHR Science
• ~30 Services

http://www.sikuliaq.alaska.edu
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

R/V SIKULIAQ
http://www.sikuliaq.alaska.edu
Science Data Archive Repository (SDAR)

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

SDAR Server v1.0_2014-11-10

Current CruiseID | SDAR Status | SYNC Status | Archive Usage | Archive Free
--- | --- | --- | --- | ---
SK201400J8 | ACTIVE | | 3971/376.9% | 5.67/9.97

All Cruises

<table>
<thead>
<tr>
<th>CruiseID</th>
<th>Status</th>
<th>Sync</th>
<th>Start Time</th>
<th>Finish Time</th>
<th>% Cruise Complete</th>
<th>Depart</th>
<th>Arrive</th>
<th>Comment</th>
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<tr>
<td>SK201400L1</td>
<td>FINAL_SYNC</td>
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<td>2014-08-10T00:00:00.000Z</td>
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<td>Cleveland to WHOI</td>
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<td>2014-09-04T00:00:00.000Z</td>
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<td>WHOI</td>
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<td>San Juan Winch Testing at San Juan</td>
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<td>2014-10-20T00:00:00.000Z</td>
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R/V SIKULIAQ

http://www.sikuliaq.alaska.edu
## Science Data Archive Repository (SDAR) Server

**Cruise ID:** SKQ201400L8

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<th>Arrive</th>
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<th>Archive Mtime</th>
<th>DAS Client Host</th>
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<th>Last Sync Status</th>
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<td>OVERDUE (1415815596 secs)</td>
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</tbody>
</table>
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

Service Provided by SFOS IT

R/V SIKULIAQ
http://www.sikuliaz.alaska.edu
Ship to Shore Jabber Chat

Service Provided by SFOS IT

http://www.sikuliaq.alaska.edu
Ship Side Web and File Shares

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

Welcome Aboard!

From this website you will find access and documentation for Sikuliaq resources. Please note that this site is a work in progress and not yet completed. If you would like to publish content on this site please see one of the Science Support crew.

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R/V SIKULIAQ

http://www.sikuliaq.alaska.edu

Service Provided by SFOS IT
Ship Tracker

https://www.sikuliaq.alaska.edu/track

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

Cruise: SK201400T

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<tr>
<th>Time</th>
<th>Location</th>
<th>Track</th>
<th>Heading/Altitude</th>
<th>Speed</th>
<th>GPS</th>
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<td></td>
<td>Location Updated: 2014-09-15 @ 17:26:03 UTC</td>
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<tr>
<td></td>
<td>Latitude: 19.391794 N</td>
<td>True N: 225.64°</td>
<td>True N: 53.89°</td>
<td>0.3 knots</td>
<td>2</td>
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<td></td>
<td>Longitude: 65.4371035 W</td>
<td>Range: 238.97°</td>
<td>Range: 19.92m</td>
<td>0.33 m/h</td>
<td>99 Satellites</td>
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