

Space Details

Key:	VARs
Name:	500049 Video Annotation and Reference System
Description:	
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Computers

This page last changed on Nov 30, 2016 by [brian](#).

Computers that are involved with running VARS at MBARI

Computer	Role
Alaskanwind	Western Flyer database server
Dione	External database server
Eione	External web server
Equinox	Master database server
Glacierwind	Point Lobos database server
Ione	External web server (replacement for Eione)
Seaspray	Internal Web and Web application server. Support process host
Solstice	Database server that hosts EXPD
Sundog	External database, web, and web application server. Retired
Tienhou	Internal Web and Web application server. Support process host. Retired
Ulikai	Internal VM for big data processing
VARS-PL	Point Lobos annotation station - Retired
VARS\RC	Rachael Carson annotation station
VARS-WF	Western Flyer annotation station
Varspub	External database server. Retired

Alaskanwind

This page last changed on Nov 29, 2006 by [brian](#).

About alaskanwind.wf.mbari.org

Alaskanwind hosts the MS SQL Server for the WF VARS database

About Dione

Dione is a Windows VM that hosts MS SQL 2008 and hosts the external VARS database.



Connecting via JDBC

When using windows authentication to connect with the jtds JDBC driver don't forget to add 'useNTLMv2=true' in the connection string. See <http://jtds.sourceforge.net/faq.html#windowsAuth>

Summary of Data Embargo

The data embargo info used for this iteration is described [here](#). The table below more clearly summarizes what modifications on Dione are requested:

Concept	Delete KB Branch	Delete KB Media and LinkRealizations	Delete Annotations
Xenoturbellida		✓	✓
Xenoturbellidae		✓	✓
Xenoturbella		✓	✓
Mystery Mollusc	✓		✓
Ctenophora			✓
Cydippida			✓
Cydippida 2	✓		✓
Llyria	✓		✓
Mertensia		✓	✓
Mertensiidae sp. A	✓		✓
Platyctenida		✓	✓
Platyctenida sp. 1	✓		✓
Lyroctenidae		✓	✓
Lyrocteis		✓	✓
Tjalfiellidae		✓	✓
Tjalfiella		✓	✓

Tjalfiella tristoma		✓	✓
Thalassocalycida			✓
Thalassocalycida sp. 1	✓		✓
Intacta	✓		✓
Aegina sp. 1	✓		✓
Erenna sp. A	✓		✓
Erenna sp. B	✓		✓
Physonectae sp. 1	✓		✓
Tuscaroridae		✓	✓
Tuscarantha		✓	✓
Tuscarantha luciae		✓	✓
Tuscarantha braueri		✓	✓
Tuscaretta		✓	✓
Tuscaretta globosa		✓	✓
Tuscaridium		✓	✓
Tuscaridium cygneum		✓	✓
Tuscarilla		✓	✓
Tuscarilla nationalis		✓	✓
Tuscarilla similis		✓	✓
Tuscarilla campanella		✓	✓
Tuscarora		✓	✓

Additional Annotations to delete

- Bob Vrijenhoek or Clague's annotations of Xenophyophoroidea, Psamminidae, Psamminida
- Robison, Sherock, Raskoff, Zeidberg, Hopcroft, Hunt or Hamners's annotations with a cameradirection of transect, diel transect, startransect or endtransect.

Embargo SQL

The data in these databases are replicated monthly and the following scripts are applied after replication:

- [Knowledgebase](#)

- [Annotation](#)

 The SQL has been updated on both the *develop* and *videofile-jdk8* branches

About VARS replication to DIONE

From [Neil Conner](#):

Okay, Brian, it's all ready to go. This is a two-step process:

1. I created permanent backup devices (fixed files) on a network share for the VARS and VARS_KB databases on both Equinox and Dione.
2. On Equinox, I created a new maintenance plan called "VARS_Export Backups" which writes a full backup of VARS and VARS_KB to the respective backup device and scheduled it to run the first Monday of each month at 3:00am.
3. On Dione, I created a SQL Agent job for the VARS database called "VARS_Export Restore from Equinox" and one for VARS_KB called "VARS_KB_Export Restore from Equinox". Both jobs run the first Monday of each month at 5:00am.
4. The VARS job has the following four steps: 1) does a restore from whatever happens to be in the respective backup device, 2) deletes unnecessary user accounts, 3) runs the embargo script and 4) updates the URLs; the VARS_KB job has only the first two steps. Both jobs create a log file on Dione and send me an email on failure.

Eione

This page last changed on Nov 18, 2014 by [brian](#).

About Eione

Eione is a linux VM that hosts an external database server. It is aliased using the CNAME <http://dsg.mbari.org>

Image files

The video labs DSG representative images are mounted from \\Tornado\\videolab\\VARS_Images to \\mbari\\dsg\\kbimages. In turn, kbimages is symlinked at /var/www/website/images so that it can be served through the web server at <http://eione.mbari.org/images/dsg/>

Framegrabs

I haven't set up the process to copy framegrabs yet. They will be copied and watermarked into /var/www/website/frameGrabs

DSG Deployment

Instructions for building and deploying the external DSG can be found at <https://oceana.mbari.org/jira/browse/VAAP-42>

Equinox

This page last changed on Jan 03, 2012 by [brian](#).

About Equinox

Equinox is a windows server running SQL Server 2008.

Equinox hosts the following VARS databases:

1. **VARS** - For video lab annotations
2. **VARS_KB** - VARS Knowledgebase, shared by all versions of VARS running internally
3. **VARS_imaging** - For image based annotations, i.e. Benthic Rover, BIAUV, coolpix, etc.
4. **VARS_video** - For video-file based annotations.

Glacierwind

This page last changed on Nov 29, 2006 by [brian](#).

About glacierwind.pl.mbari.org

Glacierwind hosts the MS SQL Server for the PL VARS database

About seaspray.shore.mbari.org

[Seaspray](#) is the server used to serve the VARS internal web pages, host the VARS JNLP applications, and run the scripts used for supporting VARS. It also supports several web applications at <http://seaspray.shore.mbari.org:8080/dsg/home>. These web apps are served by Tomcat with the web app directory located at `/opt/tomcat/webapps`

Installing VARS on Seaspray

VARS is installed on Seaspray as a stand-alone application (i.e. Not JNLP) in `/opt/vars` and also hosted on Seaspray's webserver as JNLP application.

Building the stand-alone version:

1. Follow the [build instructions](#) using **-P shore** flag to build the shore profile.
2. Unzip the zip file `$VARS/vars-standalone/target/vars-standalone-VERSION-scripting.zip` and copy it to `/opt/vars-writable` on Seaspray.

Building the JNLP version:

1. Follow the [build instructions](#) using **-P shore** flag
2. Copy the contents of `$VARS_JNLP/target/site` to `/var/www/html/webstart` on Seaspray.

Supporting Scripts

The following scripts are run as the user *vicki* from cron.

merge
This script merges physical, positional, and camera data from EXPD with VARS annotations using nearest neighbor interpolation. The outcome of the merges are written to the EXPDMergeHistory table in the VARS database on Solstice.
updateallrovctd
Supporting the samples database, this script updates ROV CTD information for CollectionEvents in the samples database that are missing CTD information
updateallsamplekeywords
Also supporting the samples database, this script updates keywords (i.e. Concepts) for samples in the samples database
updateurls

When the databases on the ships are synched with the shore database, the images for the framegrabs are referenced by file URLs. These URL's need to be converted to web URLs in order to allow users to view them with the Query application. This script locates any file URL's in the CameraData table on Solstice. It then verifies that the image has been uploaded to the image web server. If the image exists on the web server the URL will be changed to reference it.

fixmetadata

This script runs every morning and fixes VideoArchiveSet metadata, such as chief scientist and start and end dates of the CameraDeployment

updatevarspub

Once a month a DTS job updates the public database stored on [Varspub](#). This script copies images that are referenced on the external database from the internal web server to the external web server.



The image update is currently done by hand because the framegrab directory on VARSPUB is CIFS and must be mounted onto seaspray as a specific user. Here's the steps to run the update:

```
export PASSWD=mypassword
export USER=brian
sudo mount -t cifs //varspub/framegrabs /mnt/varspub/framegrabs -o user=$USER
export PASSWD=''
cd /u/brian/Applications/VARS-4.3-SNAPSHOT-standalone4shore/bin
gsh -e "updatevarspub.update '/mnt/varspub/framegrabs'
umount /mnt/varspub/framegrabs
```

The following scripts can be used by anyone.

To run one of these scripts do the following:

1. Log in on Seaspray (using ssh, on windows you can use [Putty](#))
2. Execute the command
3. Execute the command you want to run. Make sure you prepend './' (e.g.

```
./dive_merge
```

The scripts

dive_merge

This script merges physical, positional, and camera data from EXPD with VARS annotations using nearest neighbor interpolation. This script can be used by the video lab to perform a merge at any time. Use as:

```
dive_merge [ROV] [DIVENUMBER] [HD]
dive_merge Ventana 3200 true
```

lookup_linkrealizations

This script searches for the use of a particular link-name. It's useful if you want to find all the LinkRealizations that are derived from a particular LinkTemplate. Use as:

```
lookup_linkrealizations [LINK_NAME]
```

dsg-size

```
lookup_linkrealizations dsg-size
```

lookup_mergestatus

This script returns the current merge status for a dive Use as:

```
lookup_mergestatus [ROV] [DIVE_NUMBER]
```

```
lookup_mergestatus Ventana 3200
```

Solstice

This page last changed on Jan 10, 2012 by [brian](#).

About Solstice

Solstice hosts the MS SQL Server for the Shore VARS database

About Oxygen

From [\[~rich\]](#):

Primary is o2 (seabird sensor)

Secondary is o2alt (optode)

Flags... 0=bad, 1=suspect, 2='loaded by perl', 3='actually looked at and blessed by ctd/science tech', 4= winklers were run etc (don't expect to see any of these "yet")

Note that flags are a per-record basis, when data is loaded and o2 computed from raw... it will typically set some flags to 0 when 'out-of-range' or if p,t,s is bad etc....(since needs p,t,s in the O2 formula...)

Sundog

This page last changed on Mar 19, 2009 by [brian](#).

About **sundog.shore.mbari.org**

Sundog hosts the externally accessible IIS web server, VARS applications and MS SQL Server 2008 that hosts the external VARS database. It also hosts Glassfish 2.1 at <http://dsg.mbari.org:8080/>. Sundog has been aliased as *dsg.mbari.org*

About tienhou.shore.mbari.org

[Tienhou](#) is the server used to serve the VARS internal web pages, host the VARS JNLP applications, and run the scripts used for supporting VARS.

Installing VARS on Tienhou

VARS is installed on Tienhou as a stand-alone application (i.e. Not JNLP) in `C:\Program Files\VARS` and also hosted on Tienhou webserver as JNLP application.

Building the stand-alone version:

1. Follow the [build instructions](#) using **-Denvironment=shore** flag
2. Unzip the zip file `$VARS/vars-deploy/vars-app/target/vars-VERSION-standalone4shore.zip` and copy it's contents into `C:\Program Files\VARS` on Tienhou.

Building the JNLP version:

1. Follow the [build instructions](#) using **-Denvironment=shore** flag
2. Copy the contents of `$VARS/vars-deploy/vars-jnlp/target/site` to `C:\Inetpub\wwwroot\webstart` on Tienhou.

Supporting Scripts



Scripts have been temporarily moved

As of the 2007-09-14, the supporting scripts have been moved to cron jobs running on the computer Elvis as the user 'brian' (aka [Brian Schlining](#)). Tienhou is a Windows 2000 machine; it can not handle the long classpath required for running VARS applications. This move is temporary and these scripts will be moved to the Tienhou replacement machine (8 core + 14GB!!) at the end of November 2007.

merge.bat

This script merges physical, positional, and camera data from EXPD with VARS annotations using nearest neighbor interpolation. The outcome of the merges are written to the EXPDMergeStatus table in the VARS database on Solstice.

updateallrovctd.bat

Supporting the samples database, this script updates ROV CTD information for CollectionEvents in the samples database that are missing CTD information

updateallsamplekeywords.bat

Also supporting the samples database, this script updates keywords (i.e. Concepts) for samples in the samples database

updateurls.bat

When the databases on the ships are synched with the shore database, the images for the framegrabs are referenced by file URLs. These URL's need to be converted to web URLs in order to allow users to view them with the Query application. This script locates any file URL's in the CameraData table on Solstice. It then verifies that the image has been uploaded to the image web server. If the image exists on the web server the URL will be changed to reference it.

updatevarspub.bat

Once a month a DTS job updates the public database stored on [Varspub](#). This script copies images that are referenced on the external database from the internal web server to the external web server.

Application server

Tienhou is running the [Tomcat](#) application server. Currently this server is used to host the [database tests](#) used to show potential problems with the database. The source code for the project is stored in CVS on *moonjelly.shore.mbari.org* and can be browsed at <http://moonjelly/cgi-bin/cvsweb.cgi/iag/brian/vars-web/>

The webapps directory where the database test application is stored is C:\Program Files\Apache Software Foundation\Tomcat 5.5\webapps

This page last changed on Oct 24, 2013 by [brian](#).

About Ulikai.shore.mbari.org

Ulikai is a VM (Fedora) configured with 9GB RAM and access to a larger than normal share of CPU power. It is used to run video annotation processing tasks that are too resource intensive for standard VM configurations. The processing is run under a cronjob as the user [Brian Schlining](#). It is currently:

- Generating ROV effort data products for the DSG
- Generating Annotation data products for the DSG
- Updating the midwater transects database
- Generating midwater transect data products for the midwater lab

The applications are hosted under [Brian Schlining](#) shred account on Atlas, in \\Atlas\brian\Applications\dsd and \\Atlas\brian\Applications\midwater-transects

This page last changed on Dec 04, 2006 by [brian](#).

About vars-pl.pl.mbari.org

VARs-PL is the computer on the R/V Point Lobos used for running VARs

VARs is launched via Java Web Start on VARs-PL. Each application has a corresponding desktop shortcut and start menu item; they should appear as regular applications to the users and no network connection is needed to launch them. The location of the web start applications are C:\Program Files\VARs\webstart. The applications here can be updated by following the build instructions for the 'vars-mbari' module on moonjelly, then executing the modules build file with 'ant deploy.jnlp.pl'

This page last changed on Aug 06, 2015 by [brian](#).

About vars-wf.wf.mbari.org

VARS-WF is the computer on the R/V Western Flyer used for running VARS

VARS is launched via Java Web Start on VARS-WF. Each application has a corresponding desktop shortcut and start menu item; they should appear as regular applications to the users and no network connection is needed to launch them. The location of the web start applications are C:\Program Files\VARs\webstart. The applications here can be updated by following the build instructions for the 'vars-mbari' module on moonjelly, then executing the modules build file with 'ant deploy.jnlp.wf'

Timecode source

VARS on the flyer gets timecode and time via UDP from *navproc.wf.mbari.org*. Beta timecode can be fetched on port **9000**. HD timecode is on port **9001**.

NTP

From [~sheldon]:

vars-wf is configured to synchronize with the following:
Western Flyer: time-wf1 (134.89.20.17), time-wf2 (Unused), time-wf3 (134.89.21.5), time-wf4 (134.89.21.6)

ntp.conf

```
server time-wf1
server time-wf2
server time-wf3
server time-wf4
```

About varspub.mbari.org

Varspub hosts the externally accessible IIS web server, VARS applications and MS SQL Server that hosts the external VARS database.

Embargoed Data

There is a DTS Package, 'Update VARS_External on VARSPUB', on Solstice used to copy annotations out for external use. The embargo SQL is executed in the 'Update Observations_Embargoed' phase.

September 2008

From [Nancy Jacobsen-Stout](#):

This is a new embargo that was recently approved by Marcia for Karen Osborn, Flota and Green bomber.
Brian, the implementation in VARS should include the annotations and properties provided by Susan below. Please remove all of the annotations and images of such annotations from the public query. Flota should have an expiration of December 2008 and all of the green bomber's should have an expiration of December 2009.

From [Susan Von Thun](#):

The worms of interest to Karen Osborn that we were talking about this morning are:
Flota (and it's children flota vitjazi and flota flabelligerida)
fabelligeridae |comment| self| Green bomber (or it maybe audio comment or comment | human|)
Polychaeta |comment| self | Green bomber (or it maybe audio comment or comment | human|)
For that matter, it could be any annelida with the green bomber in a comment

Also, at [\[~grch\]](#)'s request. I've embargoed the Macon dives.

The corresponding SQL is:

```
SELECT DISTINCT ObservationID_FK
FROM Annotations
WHERE (
(
RecordedDate > DATEADD([year], - 2, GETDATE()) OR
RecordedDate IS NULL OR
RecordedDate < CAST('1970-01-02' AS datetime)
)
OR (
Observer = 'sbush' AND
ConceptName LIKE 'octopoteuthis%'
)
OR (
ConceptName LIKE 'plantoteuthis%' OR
ConceptName LIKE 'bathyteuthis%' OR
ConceptName LIKE 'grimalditeuthis%'
)
OR (
ConceptName = 'Flota' OR
ConceptName LIKE 'flota %' OR
ConceptName LIKE 'flota-%'
)
OR (
LinkValue LIKE '%green bomber%'
)
)
```

```

OR (
RovName = 'Ventana' AND
DiveNumber IN (50, 217, 218, 248)
)
OR (
RovName = 'Tiburón' AND
DiveNumber IN (1001, 1029, 1030, 1031, 1032, 1033, 1034)
)
)

```

July 2007

From [Nancy Jacobsen-Stout](#):

I wanted to discuss some clarifications in Stephanie's embargo. I don't think these change the embargo itself, just a matter of implementation.

In testing to make sure her embargoes were not in the Public Query, we discovered that there are about 12-15 occurrences of the very rare squid (all genera but *Octopoteuthis* are rare) that Stephanie is actively working on that are not embargoed.

Some of these do have Steph's username. The reason they show up is that only 'd' (for detail) are being embargoed, but some dives are designated as 'o' (for outline) and there is no way in VARS to change an individual annotation to 'd' even after she has modified/added to it. And we wouldn't want to change an entire dive to 'd' if only a few annotations are done in detail.

Some of those we found do not have Steph's username. When she goes back to review the video and annotations she wouldn't change the concept name if it was already correctly identified by a VL person (or someone else, e.g., at sea or from Robi lab). She might change or add an association (although she might not, if adequately annotated by VL already). The issue is that in VARS, even if an association is added by a new observer, but the concept name isn't changed, the original observer name remains. Nonetheless, she has reviewed these observations and they've become part of this current research.

For these reasons, I wonder if the embargo specification could be changed slightly to exclude all *Planctoteuthis*, *Grimalditeuthis* and *Bathyteuthis*. Again, there are only about 12-15 individuals of these ever seen (mostly *Planctoteuthis* sp.). All the above holds true for *Octopoteuthis* too, but that animal is much more common. The alternative to excluding the rare types would be to have Stephanie go back and actually change the concept names (even if already correct) and to keep up with this method for future annotations. There are currently about 230 annotation lines for those 12-15 individuals. This doesn't seem too practical.

The other thing that we realized is that these genus names should be extended to 'children' so observations to species, not just genus, are included.

The corresponding SQL is:

```

SELECT DISTINCT ObservationID_FK
FROM Annotations
WHERE ((
RecordedDate > DATEADD([year], - 2, GETDATE()) OR
RecordedDate IS NULL OR
RecordedDate < CAST('1970-01-02' AS datetime)
)
OR (
Observer = 'sbush' AND
ConceptName LIKE 'octopoteuthis%'
)
OR (
ConceptName LIKE 'plantoteuthis%' OR
ConceptName LIKE 'bathyteuthis%' OR
ConceptName LIKE 'grimalditeuthis%'
)
)

```

June 2007

[Brian Schlining](#) I update the embargoed SQL script (which is hosted as a DTS job on Solsice -> 'Update VARS_External on VARSPUB'). The new SQL is:

```

SELECT DISTINCT ObservationID_FK
FROM Annotations
WHERE ((
RecordedDate > DATEADD([year], - 2, GETDATE()) OR
RecordedDate IS NULL OR
RecordedDate < CAST('1970-01-02' AS datetime)
)
OR (
Observer = 'sbush' AND (
ConceptName LIKE 'octopoteuthis%' OR
ConceptName LIKE 'plantoteuthis%' OR
ConceptName LIKE 'bathyteuthis%' OR
ConceptName LIKE 'grimalditeuthis%'
)
)
)

```

Data on the external database is a subset of the internal database subjected to some *embargo* rules. The *official* embargoed data page is <http://mwww.mbari.org/rd/Science/Embargo/embargoes.htm> but it is not currently (as of 2007-04-10) up to date. The data is embargoed as follows:

April 2007

Date: April 10, 2007 10:32:30 AM PDT
 Until April 2009 Stephanie Bush's (but no other annotators') detailed annotations on
 Octopoteuthis, Planctoteuthis, Bathyteuthis, and Grimalditeuthis
 Until June 2007 Karen Osborn Munnopsidae Within Order Isopoda
 Suborder Asellota
 Suborder Valvifera
 -Family Munnopsidae
 Genus Acanthamunnopsis
 Subfamily Munnopsinae
 Genus Munneurycope
 o Genus Munnopsis
 Until June 2007 Praya and Apolemia
 Until June 2007 Gonatus and Dosidicus
 Until June 2007 salps and doliolids
 Judith L. Connor, Ph.D.

The corresponding SQL is:

```

SELECT DISTINCT ObservationID_FK
FROM Annotations
WHERE ((
RecordedDate > DATEADD([year], - 2, GETDATE()) OR
RecordedDate IS NULL OR
RecordedDate < CAST('1970-01-02' AS datetime)
)
OR (
Observer = 'sbush' AND (
ConceptName LIKE 'octopoteuthis%' OR
ConceptName LIKE 'plantoteuthis%' OR
ConceptName LIKE 'bathyteuthis%' OR
ConceptName LIKE 'grimalditeuthis%'
)
)
OR (
Observer = 'oska' AND (
ConceptName LIKE 'asellota%' OR
ConceptName LIKE 'valvifera%' OR
ConceptName LIKE 'munnopsidae%' OR
ConceptName LIKE 'acanthamunnopsis%' OR
ConceptName LIKE 'munnopsinae%' OR
ConceptName LIKE 'munneurycope%' OR
ConceptName LIKE 'munnopsis%'
)
)
)

```



```
)  
)  
OR (  
ConceptName LIKE 'praya%' OR  
ConceptName LIKE 'apolemia%' OR  
ConceptName LIKE 'gonatus%' OR  
ConceptName LIKE 'salp%' OR  
ConceptName LIKE 'doliolid%'  
)  
)
```

This page last changed on Aug 26, 2015 by [brian](#).

Codecs

Apple ProRes 422 HQ

The video lab intends to use [Apple ProRes 422 HQ](#) as an archiving codec. According to Apple, the nominal data rate is 220Mbps for 1920x1080 at 29.97fps. (i.e. 773 GB/hour or 0.756 TB/hour).

A sample from Kikani's DeepPIV video was recorded using 422 HQ at 60fps. Her video was 457.68 GB at 8441.233 seconds long (2h 20m). Her data rate was 55.52 Mbps for 1920x1080 at 60fps (195.19 GB/hour (0.19 TB/hour)

h264

Transcoding to h264/mp4

Prores can be transcoded to h264 using ffmpeg. Here's an example:

```
# Using default encodings
ffmpeg -i SC1ATK52.mov -c:v libx264 -movflags +faststart -c:a copy ~/Desktop/SC1ATK52-h264.mp4
# Using higher quality (crf=10 preset=slow)
ffmpeg -i SC1ATK52.mov -crf 10 -preset slow -c:v libx264 -movflags +faststart -c:a copy ~/Desktop/SC1ATK52-h264.mp4
```

The audio track is just copied over to the new container and the headers are added to the front of the file for web playback (i.e. faststart). Note that the default encoding is ran in my test (source prores on Atlas, target file on my laptop) at about 10fps. That means the transcoding would take 505968 frames / 10 fps / 60 s per m / 60 m per h = 14 hours, the higher quality one at 3fps (46 hours)

Examining a File

First install ffmpeg. On Mac, you can use homebrew. Here's the command to install it with reasonable codec support:

```
brew install ffmpeg --with-faac --with-libvpx --with-openjpeg --with-schroedinger --with-theora --with-x265
```

You can then use ffprobe to examine the contents:

```
ffprobe -v quiet -show_streams -show_format -show_error -print_format json h265_test.mp4
```

Development

This page last changed on Sep 28, 2009 by [brian](#).

Developer Guides

[Building VARS at MBARI](#)
[README](#)
[SQL Examples](#)

Future-proofing VARS

[VARS JPA](#)
QuickTime for Java

Source Code

[Source Code](#)
[Browse the Sourceforge Subversion repository](#)

Open Issues

jiraissues: Could not download[http://oceana.shore.mbari.org:8082/secure/IssueNavigator.jspa?view=rss&&pid=10001&resolution=-1&sorter/field=updated&sorter/order=DESC&sorter/field=priority&sorter/order=DESC&tempMax=50&reset=true&decorator=none&os_username=everyone&os_password=guest] : caused by : oceana.shore.mbari.org

Building VARS at MBARI

This page last changed on Sep 28, 2009 by [brian](#).

Getting started

Set up

To build VARS you will need to have the following installed:

1. Java 5 or later
2. QuickTime for Java
3. [Maven](#)

Get the source

To get started check out the source code for VARS:

```
svn co https://vars.svn.sourceforge.net/svnroot/vars/trunk vars
```

Edit some files

Since I didn't want MBARI passwords checked into an open source code repository 😞, you will need to modify to files.

1. Open vars-deploy/vars-conf/src/main/filters/shore.properties and change the JDBC_PASSWORD property to *vars4mbari*
2. Open vars-deploy/vars-jnlp/build.xml and the existing configuration properties with

```
<property name="keystore.alias" value="MBARIjava" />
<property name="keystore.passwd" value="java1700" />
<property name="key.password" value="javaBeansMakeLousyCoffee" />
<property name="keystore" value="http://anvil.shore.mbari.org/java_keystore/keystore.bin" />
```

For the brave..

Optionally, you may want to check out the source for the closely related projects VCR4J, QTX4J and MBARIX4J. The compiled jars should be available from MBARI's Maven repository at <http://oceana.shore.mbari.org/maven2>. You do not need to fetch these jars, the build file will do it for you. The only reason to check out these projects is if you need make modications to them.

```
svn co http://vcr4j.googlecode.com/svn/trunk/ vcr4j
svn co http://qtx4j.googlecode.com/svn/trunk/ qtx4j
svn co svn+ssh://kahuna.shore.mbari.org/svn/repos/mbarix4j/trunk mbarix4j
```

Building

How to build

Change to the vars directory and test the build using the following:

```
mvn clean install -P test
```

The *environment* variable specifies what deployment location you are targetting. Current values are:

1. *eits* for Eye-in-the-sea
2. *pl* for Point Lobos deployment
3. ***shore*** for the main on-shore deployment
4. *test* for deploying against the testing database server Fog
5. *varspub* for the deploying the public query
6. *wf* for Western Flyer deployment

What build makes

1. All the VARS dependencies
2. A standalone application in a zip file in vars-deploy/vars-app/target/vars-app-*VERSION*-standalone.zip
3. A JNLP application web site in vars-deploy/vars-jnlp/target/site

Source Code

This page last changed on Mar 05, 2008 by [brian](#).

About Subversion

SVN (Subversion) is a tool used by many software developers to manage changes within their source code tree. SVN provides the means to store not only the current version of a piece of source code, but a record of all changes (and who made those changes) that have occurred to that source code. Use of SVN is particularly common on projects with multiple developers, since SVN ensures changes made by one developer are not accidentally removed when another developer posts their changes to the source tree.

In order to access a Subversion repository, you must install a special piece of software called a Subversion client. Subversion clients are available for most any operating system. Information about the official subversion client can be found at <http://subversion.tigris.org/>. Excellent documentation on using Subversion can be found at <http://svnbook.red-bean.com/>

Subversion Access

This project's Subversion repository can be checked out through SVN with the following instruction set:

```
svn co https://vars.svn.sourceforge.net/svnroot/vars vars
```



Warning

This is a generic Subversion checkout command which will pull all modules, tags and/or branches of the project. In most cases, you will want to add '/trunk' to the SVN URL above to check out only trunk (main development line).

Commit of the Beast



SQL Examples

This page last changed on Nov 29, 2006 by [brian](#).

SQL Scripts

Scripts that have been used with VARS can be found in the [source code repository](#)

Examples

Retrieving snap times of frame-grabs

Inputs

- Fragments of the image URL

Outputs

- The datetime that the image was taken

Query Example

```
SELECT
MIN(dbo.Observation.ObservationDTG) AS SnapTime
FROM
dbo.VideoFrame INNER JOIN
dbo.CameraData ON dbo.VideoFrame.id = dbo.CameraData.VideoFrameID_FK INNER JOIN
dbo.Observation ON dbo.VideoFrame.id = dbo.Observation.VideoFrameID_FK
WHERE
(dbo.CameraData.StillImageURL LIKE '%Ventana%2603%00_34_19_13.jpg')
```

Retrieving the epoch seconds that a video-frame was recorded using dive number and tape time-code

Inputs

- Dive number
- Tape timecode
- ROV name (either Tiburon or Ventana)

Outputs

- The date of a video-frame in epoch seconds. This is the date that the video was recorded.

Query Example

```
SELECT
CONVERT(bigint, DATEDIFF(ss, '01-01-1970 00:00:00', dbo.VideoFrame.RecordedDtG)) AS Epoch
FROM
dbo.VideoArchiveSet INNER JOIN
dbo.VideoArchive ON dbo.VideoArchiveSet.id = dbo.VideoArchive.VideoArchiveSetID_FK INNER JOIN
dbo.VideoFrame ON dbo.VideoArchive.id = dbo.VideoFrame.VideoArchiveID_FK INNER JOIN
dbo.CameraPlatformDeployment ON dbo.VideoArchiveSet.id =
dbo.CameraPlatformDeployment.VideoArchiveSetID_FK
WHERE
```

```
(dbo.CameraPlatformDeployment.SeqNumber = '2603')
AND (dbo.VideoFrame.TapeTimeCode = '00:34:19:13')
AND (dbo.VideoArchiveSet.PlatformName = 'Ventana')
```

Retrieving the URL's for framegrabs where the observation occurred within the last 2 days

Inputs

- None

Outputs

- The (non-null) image for any observations that were created within the last 2 days

Query Example

```
SELECT
dbo.CameraData.StillImageURL
FROM
dbo.CameraData INNER JOIN
dbo.VideoFrame ON dbo.CameraData.VideoFrameID_FK = dbo.VideoFrame.id INNER JOIN
dbo.Observation ON dbo.VideoFrame.id = dbo.Observation.VideoFrameID_FK
WHERE
(dbo.Observation.ObservationDTG > DATEADD([day], - 2, GETDATE())) AND
(NOT (dbo.CameraData.StillImageURL IS NULL))
```

Query that returns all dive numbers (and vehicles) for any new or updated observation in the last 2 days

Inputs

- None

Outputs

- The vehicle and dive number for any VideoArchiveSet that has observations add or modified within the last 2 days.

Query Example

```
SELECT DISTINCT
RovName,
DiveNumber
FROM
Annotations
WHERE
(ObservationDate > DATEADD([day], - 2, GETDATE())) AND
(NOT (Image IS NULL))
```


This page last changed on Oct 29, 2009 by [brian](#).

VARs Object-Relational Mapping using Java Persistence API (JPA)

Implementation

I'm writing and implementation at <http://code.google.com/p/vars-redux/>

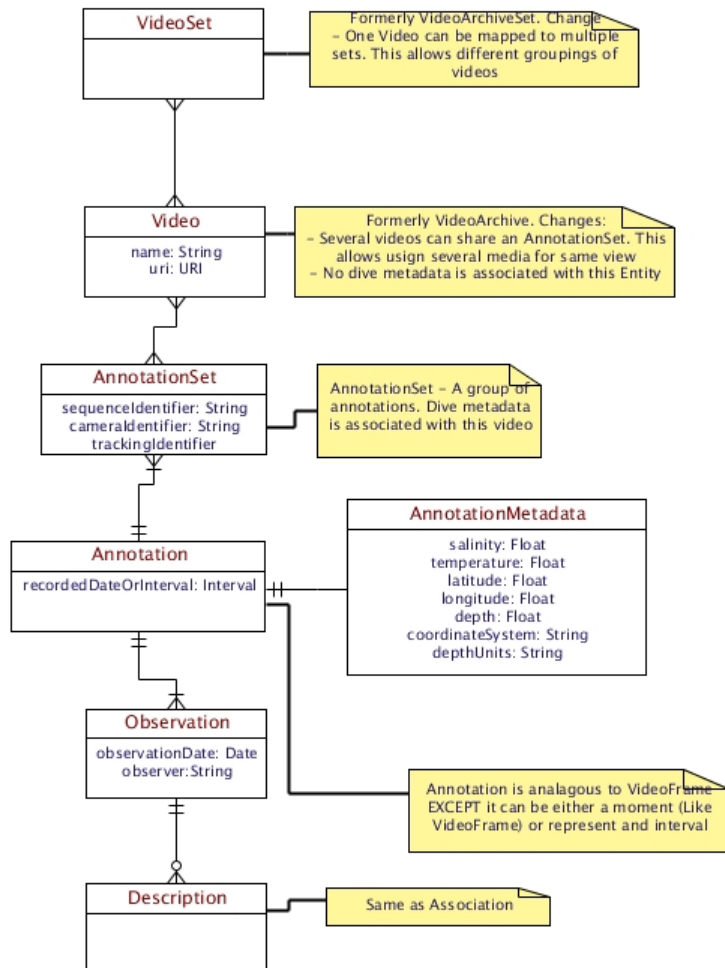
Use Cases

- [JPA Knowledgebase](#)
- JPA Annotation

Future Work

For future work there are a several considerations:

- Support videofiles AND tapes
- Several media may point to the same video
 - Allow annotators to share annotations between different media representations of the same video
- Multiple annotators may be working on the same annotation set



Use Cases

ConceptName

Insert

1. Does a duplicate name already exist?
 - Don't need to worry. JPA will throw an exception since it's a unique column.
2. Is it a primary name? Only 1 primary name per concept is allowed.
 - a. Is there another primary name for that concept already?
 - Yes = throw exception
 - No = continue

Delete

1. Is it a primary name?
 - Yes = throw exception
 - No = delete it

Update

1. Does a duplicate name already exist?
 - Don't need to worry. JPA will throw an exception since it's a unique column.
2. Is it a primary name? Only 1 primary name per concept is allowed.
 - a. Is there another primary name for that concept already?
 - Yes = throw exception
 - No = continue
3. Is it a non-primary name?
 - Make sure the concept has at least 1 primary name

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B

 [Benthic Annotation Database](#)
Creating an database of benthiconly annotations # Copy solstice:VARS to fog:VARSBenthic # Use the DTS Job on Fog: Copy Solstice:VARS to FOG:VARSBenthic # brian: I last ran this on 20080221 # Check out VARS from Subversion # `{svn ...`

 [Benthic Results](#)
Results Analysis Overview For checking to see the number of hits within the map bounds I did the following: # Run a query using 'VARS Query' # Save the results # Use vdmboundstest.m in matlab # data = vdmboundstest('/Users/brian/Desktop/varssediment.txt', ... '/Users ...

 [Building VARS at MBARI](#)
Getting started Set up To build VARS you will need to have the following installed: # Java 5 or later # QuickTime for Java # Maven <http://maven.apache.org> Get the source To get started check out the source code for VARS: `svn co ...`

D

 [Deep-sea Guide](#)
content of this page is outdated. It is only retained for historical purposes. Refer to the Video Annotation Analysis and Presentation wiki VAAP:Home for uptodate info. Web Flow Below is a diagram with the basic web flow and page layout ideas. The diagrams do not represent ...

 [Development](#)
Developer Guides Building VARS at MBARI README <http://vars.svn.sourceforge.net/>

C

 [Alaskanwind](#)
About alaskanwind.wf.mbari.org
Alaskanwind hosts the MS SQL Server for the WF VARS database

 [Computers](#)
Computers that are involved with running VARS at MBARI Computer Role Alaskanwind Western Flyer database server Dione External database server Eione External web server Equinox Master database server Glacierwind Point Lobos database server Ione ...

 [Containers and Codecs](#)
Codecs Apple ProRes 422 HQ The video lab intends to use Apple ProRes 422 HQ <https://support.apple.com/enus/HT202410> as an archiving codec. According to Apple, the nominal data rate is 220Mbps for 1920x1080 at 29.97fps. (i.e.773 GB/hour ...

E

 [Eione](#)
About Eione Eione is a linux VM that hosts an external database server. It is aliased using the CNAME <http://dsg.mbari.org> Image files The video labs DSG representative images are mounted from `\\Tornado\\videolab\\VARSImages` to `\\mbari\\dsg\\kbimages ...`

 [Equinox](#)
About Equinox Equinox is a windows server running SQL Server 2008. Equinox hosts

viewvc/vars/trunk/README?view=markup
SQL Examples Futureproofing VARS VARS
JPA QuickTime for Java Source Code Source
Code Browse the Sourceforge Subversion
repository ...

the following VARS databases: # VARS
For video lab annotations # VARSKB VARS
Knowledgebase, shared by all versions of
VARS running internally # VARSimaging For
image based ...

[Dione](#)

About Dione Dione is a Windows VM that
hosts MS SQL 2008 and hosts the external
VARS database. When using windows
authentication to connect with the jtds JDBC
driver don't forget to add 'useNTLMv2=true'
in the connection string. See http ...

F

G

[Glacierwind](#)

About glacierwind.pl.mbari.org Glacierwind
hosts the MS SQL Server for the PL VARS
database

H

I

[HD vs SD Frame Capture](#)

ROVUC, all ROV video and frame grab
users, ROV pilots, Brian Schlining, Todd
Ruston, Mike McCann From: Video Lab
staff Standard Definition vs. High Definition
Frame Grabs The issue of upgrading the
shipboard frame ...

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FAQ User FAQ For VideoLab Video Lab
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Data ...

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K

[JPA Knowledgebase](#)

Use Cases ConceptName Insert # Does
a duplicate name already exist? # Don't
need to worry. JPA will throw an exception
since it's a unique column. # Is it a primary
name? Only 1 primary name per concept is
allowed. ## Is there another primary ...

L

M

[Linux Installation](#)

Prerequisites In order for VARS to run on
your system you will need to install Java
5.0 <http://www.java.com> or a more recent
version of Java. VARS will not run on Java
1.4. Also, the Annotation application requires
QuickTime for Java <http://www.apple.com/quicktime> ...

[Mac OS X Installation](#)

Prerequisites For most VARS use you do
not need to install any additional software
on Mac OS X. However, in order to fully
utilize the Annotation application you will
need to install a serial port adapter. Detailed
Instructions The following steps ...

[Manually merge a dive](#)

1. For Macs, open a Terminal (On PC's use
Putty <http://www.chiark.greenend.org.uk/~sgtatham/putty/>) 2. ssh vicki@seaspray
(enter secret password) 3. cd /opt/vars/bin
4. ./divemerge vehicle dive trueorfalse (true
for HD, false ...

N P R



[Re-run framegrab processing for a dive](#)

1. For Macs, open a Terminal (On PC's use Putty <http://www.chiark.greenend.org.uk/~sgtatham/putty/>) 2. ssh vicki@seaspray (enter secret password) 3. example: vfcbydive tibr 930 930



[Releases](#)

VARs Releases at MBARI VARs 4.2.0 \
Release date: 20070803 VARs 3.1.0 \
Release date: 20070201 VARs 3.0.1 \
Release date: 20061204 VARs 3.0.0 \
Release date: 20061201

T



[Tienhou](#)

About tienhou.shore.mbari.org Tienhou <http://tienhou.shore.mbari.org/vars> is the server used to serve the VARs internal web pages, host the VARs JNLP applications, and run the scripts used for supporting VARs. Installing VARs on Tienhou VARs is installed on Tienhou as a standalone application ...

O Q S



[Seaspray](#)

About seaspray.shore.mbari.org Seaspray <http://seaspray.shore.mbari.org> is the server used to serve the VARs internal web pages, host the VARs JNLP applications, and run the scripts used for supporting VARs. It also supports several web applications at <http://seaspray.shore.mbari.org:8080/dsg/home> ...



[Solstice](#)

About Solstice Solstice hosts the MS SQL Server for the Shore VARs database About Oxygen From rich: Primary is o2 (seabird sensor) Secondary is o2alt (optode) Flags... 0=bad, 1=suspect, 2='loaded by perl', 3 ...



[Source Code](#)

About Subversion SVN (Subversion) is a tool used by many software developers to manage changes within their source code tree. SVN provides the means to store not only the current version of a piece of source code, but a record of all changes (and who made ...



[SQL Examples](#)

SQL Scripts Scripts that have been used with VARs can be found in the source code repository <http://moonjelly.shore.mbari.org/cgi-bin/cvsweb.cgi/varsmbari/src/main/database/sqlserver/> Examples Inputs Fragments of the image URL Outputs The datetime that the image was taken ...



[Sundog](#)

About sundog.shore.mbari.org Sundog hosts the externally accessible IIS web server, VARs applications and MS SQL Server 2008 that hosts the external VARs database. It also hosts Glassfish 2.1 at <http://dsg.mbari.org:8080/>. Sundog has been aliased ...

U



[Ulikai](#)

About Ulikai.shore.mbari.org Ulikai is a VM (Fedora) configured with 9GB RAM and access to a larger than normal share of CPU power. It is used to run video annotation processing tasks that are too resource intensive for standard VM configurations. The processing is run under ...



[User FAQ](#)

Questions Where does VARs get the camera data from? #Q1 How does VARs handle framecapture? #Q2 How do I upgrade Java? #Q3 Answers Q: Where does VARs get the camera data from ...

V



[VARS 3.0.0](#)

Release Highlights The Annotation App now uses RXTX <http://www.rxtx.org> instead of javax.comm <http://java.sun.com/products/javacomm/> for serial communications All applications will be deployed using Java Web Start rather than installers. A Beta version of the Knowledgebase ...



[VARS 3.0.1](#)

Release Highlights Bug fix release This release corresponds to version 1.0.5 at <http://vars.sourceforge.net> Resolved Issues



[VARS 3.1.0](#)

Release Highlights Resolving issues with the Knowledgebase application This release corresponds to version 3.1.0 at <http://vars.sourceforge.net> Built using MBARI SVN Revision: 40, Sourceforge SVN Revision: 466 Resolved Issues



[VARS 4.2.0](#)

Release Highlights Initial (alpha) support for annotating QuickTime movies. Resolving issues with the Knowledgebase application This release corresponds to version 4.2.0 at <http://vars.sourceforge.net> Built using Sourceforge SVN Revision: 558 Resolved Issues Resolved Issues for version 4.1 ...



[VARS Data Mining](#)

Developer Notes Deliverable to Microsoft guys Benthic Annotation Database Verifying Altitudes Benthic Results Depth distribution analysis Created a script to run the depth distributions of VARS data. There are 2 scripts in the vdmtools project in the MBARI SVN repository. The scripts ...



[VARS JPA](#)

VARS ObjectRelational Mapping using Java Persistence API (JPA) Implementation I'm writing and implementation at <http://code.google.com/p/varsredux/> Use Cases JPA Knowledgebase JPA Annotation Future Work For future work there are a several considerations: Support videofiles ...



[VARS-PL](#)

About varspl.pl.mbari.org VARSPL is the computer on the R/V Point Lobos used for running VARS VARS is launched via Java Web Start on VARSPL. Each application has a corresponding desktop shortcut and start menu item; they should appear as regular ...



[VARS-WF](#)

About varswf.wf.mbari.org VARSWF is the computer on the R/V Western Flyer used for running VARS VARS is launched via Java Web Start on VARSWF. Each application has a corresponding desktop shortcut and start menu item; they should appear as regular ...



[Varspub](#)

W



[Windows Installation](#)

Prerequisites In order for VARS to run on your system you will need to install Java 5.0 <http://www.java.com> or a more recent version of Java. VARS will not run on Java 1.4. Also, the annotation application will not run unless QuickTime for Java <http://www.apple.com> ...

About varspub.mbari.org Varspub hosts the externally accessible IIS web server, VARS applications and MS SQL Server that hosts the external VARS database. Embargoed Data There is a DTS Package, 'Update VARSExternal on VARSPUB', on Solstice used to copy annotations out ...



[Verifying Altitudes](#)

Steps for verifying altitudes # Export the altitudes and positions from the VARSBenthic database ## Build vdmtools ## Extract the built archive ## `{{cd $VDMTOOLSHOME/bin}}` ## `{{sh ../scripts/groovy/runQuery.groovy >> allAnnotations.txt}}` ## Edit any extraneous log messages of off the top of the file ...



[Verifying last date of successful merge](#)

1. For Macs, open a Terminal (On PC's use Putty <http://www.chiark.greenend.org.uk/~sgtatham/putty/>) 2. ssh seaspray 3. cd /opt/vars/bin 4. ./lookupmergestatus Examples: ./lookupmergestatus Tiburon 775 ./lookupmergestatus "Doc Ricketts ...



[Video and Data Diagram](#)

Meeting to discuss the big picture of video data flow In attendance, brian, schlin, rich, mccann, linda, lonny and jana We created a digram that outlines the who, what, where and when of the data flow and processing. Below are a picture of our notes ...



[Video Lab](#)

Deepsea Guide HD vs SD Frame Capture

X

Z

Y

!@#\$

Installation

This page last changed on Nov 28, 2006 by [brian](#).

[Linux Installation](#)

[Mac OS X Installation](#)

[Windows Installation](#)

Linux Installation

This page last changed on Nov 27, 2007 by [brian](#).

Prerequisites

In order for VARS to run on your system you will need to install [Java 5.0](#) or a more recent version of Java. VARS will not run on Java 1.4. Also, the Annotation application requires [QuickTime for Java](#), which is not available for Linux. Therefore, the Annotation application will not run on Linux.

Detailed Instructions

The following steps describe the prerequisites for running VARS:

1. **Installing Java**

Refer to you linux distributors documentation on installing Java 5.0. You can also download Java from <http://www.java.com>. Simply download the installer and run it.

2. **Installing VARS**

You do not need to install VARS in order to run it. You can simply launch them from <http://seaspray.shore.mbari.org/vars>.

Mac OS X Installation

This page last changed on Nov 27, 2007 by [brian](#).

Prerequisites

For most VARS use you do not need to install any additional software on Mac OS X. However, in order to fully utilize the Annotation application you will need to install a serial port adapter.

Detailed Instructions

The following steps describe the prerequisites for running VARS:

1. **Installing a Serial Port**

Apple computers do not ship with built in serial ports. In order to use the Annotation application you will need to install a serial port in order to talk to the VCR. There are several options for this, the easiest is using a USB Serial Port adapter such as the [USB PDA/Serial Adapter \(GUC232A\) from IOGEAR](#). Be sure to install the correct driver too. If you have a [Blackmagic Design](#) video capture card installed you do not need to install an additional serial port. VARS can use the serial port included on the video capture card.

2. **Mounting the framegrabs directory**

If you intend to use the Annotation application to capture framegrabs, you will need to mount the framegrabs share on Tornado to your Mac. Here are the steps to do this:

- a. In the Finder, use the menu **GO -> Connect To Server**
- b. In the **Connect to Server** window, enter the server address as `cifs://tornado.shore.mbari.org/framegrabs` and press the connect button.
- c. You will be prompted for a password. Enter your MBARI password.
- d. The framegrabs share will be mounted on your Mac as `/Volumes/framegrabs`

3. **Installing VARS**

You do not need to install VARS in order to run it. You can simply launch them from <http://seaspray.shore.mbari.org/vars>.

Windows Installation

This page last changed on Nov 27, 2007 by [brian](#).

Prerequisites

In order for VARS to run on your system you will need to install [Java 5.0](#) or a more recent version of Java. VARS will not run on Java 1.4. Also, the annotation application will not run unless [QuickTime for Java](#) is installed.

Detailed Instructions

The following steps describe the prerequisites for running VARS:

1. **Installing Java**
You can download Java from <http://www.java.com>. Simply download the installer and run it.
2. **Installing QuickTime for Java**
Download the QuickTime installer or iTunes installer from [Apple](#) and execute it.
3. **Installing VARS**
You do not need to install VARS in order to run it. You can simply launch them from <http://seaspray.shore.mbari.org/vars>.

Manually merge a dive

This page last changed on May 24, 2011 by [linda](#).

1. For Macs, open a Terminal (On PC's use Putty <http://www.chiark.greenend.org.uk/~sgtatham/putty/>)
2. ssh vicki@seaspray (enter secret password)
3. cd /opt/vars/bin
4. ./dive_merge vehicle dive trueorfalse (true for HD, false for SD)
5. example: ./dive_merge 'DocRicketts' 82 true
or ./dive_merge Ventana 1265 false

Note Doc Ricketts needs quotes around it-

Re-run framegrab processing for a dive

This page last changed on May 27, 2011 by [linda](#).

1. For Macs, open a Terminal (On PC's use Putty <http://www.chiark.greenend.org.uk/~sgtatham/putty/>)
2. ssh vicki@seaspray (enter secret password)
3. example: vfcbydive tibr 930 930

Releases

This page last changed on Aug 06, 2007 by [brian](#).

VARs Releases at MBARI

- [VARs 4.2.0](#) - Release date: 2007-08-03
- [VARs 3.1.0](#) - Release date: 2007-02-01
- [VARs 3.0.1](#) - Release date: 2006-12-04
- [VARs 3.0.0](#) - Release date: 2006-12-01

VARS 3.0.0

This page last changed on Dec 04, 2006 by [brian](#).

Release Highlights

- The Annotation App now uses [RXTX](#) instead of [javax.comm](#) for serial communications
- All applications will be deployed using Java Web Start rather than installers.
- A Beta version of the Knowledgebase application is now available. It has a number of known issues which are scheduled to be resolved in [VARS 3.0.1](#)
- Initial support for annotating high-definition (HD) tape is included. Full support is pending an update to the merge processing between the EXPD and VARS databases
- This release corresponds to version 1.0.4 at <http://vars.sourceforge.net>
- Test versions are available at <http://oyashio.shore.mbari.org/~brian/webstart>

Resolved Issues

jiraissues: Could not download[http://oceana.shore.mbari.org:8082/secure/IssueNavigator.jspa?view=rss&&pid=10001&fixfor=10000&sorter/field=updated&sorter/order=DESC&sorter/field=priority&sorter/order=DESC&tempMax=100&reset=true&decorator=none&os_username=everyone&os_password=guest] : caused by : oceana.shore.mbari.org

VARs 3.0.1

This page last changed on Dec 04, 2006 by [brian](#).

Release Highlights

- Bug fix release
- This release corresponds to version 1.0.5 at <http://vars.sourceforge.net>

Resolved Issues

jiraissues: Could not download[http://oceana.shore.mbari.org:8082/secure/IssueNavigator.jspa?view=rss&&pid=10001&fixfor=10010&sorter/field=updated&sorter/order=DESC&sorter/field=priority&sorter/order=DESC&tempMax=100&reset=true&decorator=none&os_username=everyone&os_password=guest] : caused by : oceana.shore.mbari.org

VARS 3.1.0

This page last changed on Feb 01, 2007 by [brian](#).

Release Highlights

- Resolving issues with the Knowledgebase application
- This release corresponds to version 3.1.0 at <http://vars.sourceforge.net>
- Built using MBARI SVN Revision: 40, Sourceforge SVN Revision: 466

Resolved Issues

jiraissues: Could not download[http://oceana.shore.mbari.org:8082/secure/IssueNavigator.jspa?view=rss&&pid=10001&fixfor=10004&sorter/field=updated&sorter/order=DESC&sorter/field=priority&sorter/order=DESC&tempMax=100&reset=true&decorator=none&os_username=everyone&os_password=guest] : caused by : oceana.shore.mbari.org

VARs 4.2.0

This page last changed on Aug 06, 2007 by [brian](#).

Release Highlights

- Initial (alpha) support for annotating QuickTime movies.
- Resolving issues with the Knowledgebase application
- This release corresponds to version 4.2.0 at <http://vars.sourceforge.net>
- Built using Sourceforge SVN Revision: 558

Resolved Issues

jiraissues: Could not download[http://oceana.shore.mbari.org:8082/secure/IssueNavigator.jspa?view=rss&&pid=10001&fixfor=10020&sorter/field=updated&sorter/order=DESC&sorter/field=priority&sorter/order=DESC&tempMax=100&reset=true&decorator=none&os_username=everyone&os_password=guest] : caused by : oceana.shore.mbari.org

Resolved Issues for version 4.1 (non-public release)

jiraissues: Could not download[http://oceana.shore.mbari.org:8082/secure/IssueNavigator.jspa?view=rss&&pid=10001&fixfor=10012&sorter/field=updated&sorter/order=DESC&sorter/field=priority&sorter/order=DESC&tempMax=100&reset=true&decorator=none&os_username=everyone&os_password=guest] : caused by : oceana.shore.mbari.org

User FAQ

This page last changed on Nov 27, 2007 by [brian](#).

Questions

- [Where does VARS get the camera data from?](#)
- [How does VARS handle frame-capture?](#)
- [How do I upgrade Java?](#)

Answers

Q: Where does VARS get the camera data from?

The camera data is retrieved through the EXPD database on Solstice. Rich Schramm set up a process to load the camera-logs. Here's a note from Rich:

Normal access should be to query through the views...either select * from VentanaCamlogData or select * from TiburonCamlogData

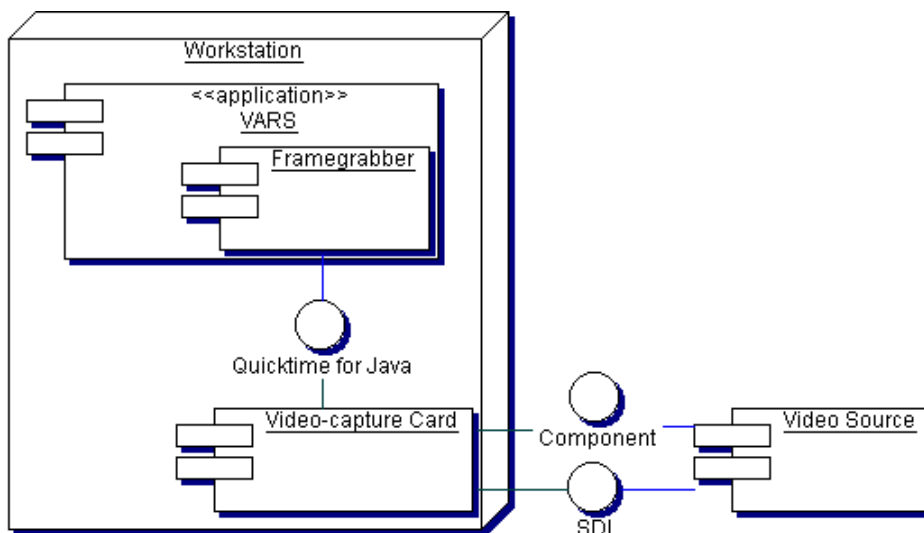
This view is going against base tables that are partitioned by vehicle and year. I recommend you write software against the view rather than trying to go to the base tables. Access through the view should be very fast due to how I've partitioned and indexed the tables however that remains to be verified once we get the several million rows added.

The status of loads can be viewed by select * from CamlogLoad, you can select by vehicle, year yearday etc....

Q: How does VARS handle frame-capture?

Overview

VARS provides the ability to capture images from a video input. We are currently using Decklink cards from [Blackmagic](#). In the video lab, we are using Decklink. On the ships we use Decklink Extreme cards, which support multiple video sources. VARS communicates with the Decklink cards using Quicktime for Java.



Where are the images initially stored?

Images captured from video are initially stored on the workstation that is running VARS. The image location is <USER_HOME>/VARS/data/<platform>/images/<divenumber>/<timecode>.jpg. For Example, Saving an image for Tiburon dive # 789 for timecode 02:43:25:28 when you are logged in as user 'Tiburon' on Windows would create an image at C:\Documents and Settings\Tiburon\VARS\data\Tiburon\images\0789\02_43_25_28.jpg. A reference to the image is inserted into the database as a local URL (i.e [file:/path/to/file/filename.jpg](#)). The image is then immediately accessible to the annotator but will not yet be available to any VARS applications that are not running on the same workstation.

How do the images get onto the web?

Annotations made on the ships and annotations made on shore are handled differently. However, all images will eventually make it onto //Tornado/framegrabs which can be browsed from the web at <http://search.mbari.org/ARCHIVE/frameGrabs/>

When the ship returns to dock, an rsync is scheduled at night to copy the images to //Tornado/framegrabs. The rsync job looks for images only under specific users, which are 'Tiburon' on the Western Flyer and 'Ventana' on the Point Lobos. If you are logged on the workstation as a different user when you annotate on the ships the images will NOT be copied to shore. At 5:01 AM, the computer Seaspray runs a process that updates file URL's to HTTP URLs in the database. Any framegrabs that are made during a cruise will not be available through the VARS query until at least 5:02 AM of the day after the dive.

On shore, assuming you are on the internal network, VARS will attempt to copy the framegrabs over to //Tornado/framegrabs whenever a Video-archive is closed. The copy process also updates the URLs in the database. On shore, it does not matter who you are logged in as. Framegrabs that you make on shore will be available to everyone as soon as you close the Video-archive that you are annotating.

Q: How do I upgrade Java?

VARS should run on Java 5.0 and Java 6.0. If you are interested in upgrading your Java installation, you can get a more recent version of Java at <http://java.com>. If you are upgrading Java on a Windows computer that you use to annotate, you will must include QuickTime for Java in the new Java installation. There are 2 options to accomplish this:

Option 1: Reinstall [QuickTime](#)

Option 2: Copy QTJava.zip from a previous installation of Java to the new one.

1. Locate your previous installation of QuickTime for Java. On Windows, the file will be located on a path like C:\Program Files\Java\jre1.5.0_06\lib\ext\QTJava.zip.
2. Copy the zip file to your new Java installations ext directory (e.g. C:\Program Files\Java\jre1.6.0_01\lib\ext)

VARs Data Mining

This page last changed on May 26, 2008 by [brian](#).

Developer Notes

Deliverable to Microsoft guys

- [Benthic Annotation Database](#)
 - [Verifying Altitudes](#)
 - [Benthic Results](#)

Depth distribution analysis

Created a script to run the depth distributions of VARs data. There are 2 scripts in the vdm-tools project in the MBARI SVN repository. The scripts are *hist4barry.groovy* and *percentiles4barry.groovy*. The first results for the percentile distribution are from [2008-05-26](#)

Creating an database of benthic-only annotations

1. Copy solstice:VARS to fog:VARS_Benthic
 - Use the DTS Job on Fog: *Copy Solstice:VARS to FOG:VARS_Benthic*
 - [Brian Schlining: I last ran this on 2008-02-21](#)
2. Check out VARS from Subversion
 - `svn co https://vars.svn.sourceforge.net/svnroot/vars/trunk vars`
3. Build VARS for the vdm database (located on Fog as VARS_Benthic)
 - `mvn clean install -Denvironment=vdm -Dmaven.test.skip=true`
 - Fog is updated every night from the VARS database on Solstice. This is a good database to work with since we can make changes and tests without breaking any production systems.
4. Check out the vdm-tools from subversion
 - `svn co svn+ssh://kahuna.shore.mbari.org/svn/repos/vdm-tools/trunk vdm-tools`
5. Build the project
 - `mvn clean package`
 - The built applications will be in `vdm-tools/target/vdm-tools-<VERSION>.zip`
 - Extract the zip file somewhere
6. Add a table to the database you're working with
 - ```
CREATE TABLE [dbo].[VideoFrameMetadata] (
 [VideoFrameID_FK] bigint NOT NULL,
 [Altitude] float NOT NULL,
 CONSTRAINT [FK_03] PRIMARY KEY([VideoFrameID_FK])
)
GO
```
7. Find a bathymetry file of the area you want to work with. [The tool can read ASCII raster grids or netcdf files. An example netCDF file, monterey\\_hrbath.nc, is checked into Subversion with the project.](#)
8. `cd` to the bin directory where you extracted the zip file (from above)
9. Run `gsh ../scripts/groovy/createbenthosdb1.groovy`
  - For example: `gsh ../scripts/groovy/createbenthosdb1.groovy ../../../../src/test/resources/monterey_hrbath.nc`
  - This populates the table `VideoFrameEmbargo` with ids of all the `VideoFrames` within the grid files area and stores the altitudes.
10. Run `gsh ../scripts/groovy/createbenthosdb5.groovy`
  - This drops all the non-benthic data from the `Association`, `Observation`, `PhysicalData`, `CameraData` and `VideoFrame` tables.
  - [Brian Schlining: I ran this on 2008-02-21](#)
11. Verify results. [Brian Schlining: ongoing](#)

## Benthic Results

This page last changed on Feb 21, 2008 by [brian](#).

# Results Analysis

## Overview

For checking to see the number of hits within the map bounds I did the following:

1. Run a query using 'VARS Query'
2. Save the results
3. Use vdm\_bounds\_test.m in matlab
  - data = vdm\_bounds\_test('/Users/brian/Desktop/vars-sediment.txt', ...  
'/Users/brian/workspace/vdm-tools/src/test/resources/monterey\_hrbath.nc');

I read the default VARS output into Matlab using code like this:

```
[associations, conceptNames, depths, imageUrl, latitudes, longitudes, ...
observationIds, recordedDates, timecodes, videoArchiveNames] = textread(...
varsfile, '%s%s%s%s%s%s%s%s', ...
'headerlines', 10, 'delimiter', '\t');
```

```
depths = str2double(depths);
latitudes = str2double(latitudes);
longitudes = str2double(longitudes);
```

## 2008-02-19

| Concept (and descendants) | VARS  | VARS_Benthic | VARS within map bounds  | VARS within map bounds and <= 40m altitude  | Notes                                                                                   |
|---------------------------|-------|--------------|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| anthomastus               | 21613 | 11998        | 16659                                                                                                      | 12030                                                                                                                            |                                                                                         |
| Grimpoteuthis             | 140   | 89           | 110                                                                                                        | 89                                                                                                                               |                                                                                         |
| pannychia                 | 23449 | 12030        | 15606                                                                                                      | 12038                                                                                                                            |                                                                                         |
| paragorgia                | 5649  | 3219         | 5026                                                                                                       | 3224                                                                                                                             |                                                                                         |
| Plantae                   | 14857 | 11764        | 12281                                                                                                      | 11760                                                                                                                            |                                                                                         |
| Psolus                    | 22826 | 15051        | 19220                                                                                                      | 15065                                                                                                                            |                                                                                         |
| rathbunaster              | 31766 | 20501        | 23707                                                                                                      | 20825                                                                                                                            |                                                                                         |
| Seep                      | 1734  | 705          | 1332                                                                                                       | 704                                                                                                                              | Altitudes look good.<br>Why the big discrepancy between within bounds and those <= 40m? |
| Sediment                  | 39699 | 20626        | 23238                                                                                                      | 20620                                                                                                                            |                                                                                         |



★ These values were determined using data from the master VARS database and [this script](#). In theory, the values in 'VARS\_Benthic' and 'VARS within map bounds and <= 40m altitude' should match. Some variation can be expected since some hits are due to matching associations rather than observations.

Data used is in the zip file [here](#).



### Problems with seep data

The seep data is giving troublesome altitude values. I set all merges done with the previous Jython based code to be remerged tonight to see if that fixes some problematic depth values. I used this snippet to do that:

```
UPDATE
EXPDMergeStatus
SET
IsMerged = 0
WHERE
StatusMessage NOT LIKE '%pragmatic%'
```

The next step is to rebuild the VARS\_Benthic database and check the results.

## 2008-02-19

[Brian Schlining](#) I remerged all dives that had used the old Jython-based merge. It did not significantly change the results (see table below)

| Concept (and descendants) | VARS  | VARS_Benthic | Notes                                                                                |
|---------------------------|-------|--------------|--------------------------------------------------------------------------------------|
| anthomastus               | 21613 | 12044        |                                                                                      |
| Grimpoteuthis             | 140   | 89           |                                                                                      |
| pannychia                 | 23449 | 12113        |                                                                                      |
| paragorgia                | 5649  | 3227         |                                                                                      |
| Plantae                   | 14857 | 12280        |                                                                                      |
| Psolus                    | 22826 | 15183        |                                                                                      |
| rathbunaster              | 31766 | 21792        |                                                                                      |
| Seep                      | 1734  | 717          | Altitudes look good. Why the big discrepancy between within bounds and those <= 40m? |
| Sediment                  | 39699 | 21212        |                                                                                      |

## Verifying Altitudes

---

This page last changed on Feb 14, 2008 by [brian](#).

### Steps for verifying altitudes

1. Export the altitudes and positions from the VARS\_Benthic database
  - a. Build *vdm-tools*
  - b. Extract the built archive
  - c. `cd $VDM_TOOLS_HOME/bin`
  - d. `sh ../scripts/groovy/runQuery.groovy >> allAnnotations.txt`
  - e. Edit any extraneous log messages off the top of the file.

2. Run the altitude test in matlab
  - a. Download [vdm\\_altitude\\_test.m](#)
  - b. Make sure matlab has snctools installed
  - c. Run the following in matlab:

```
file = '/Users/brian/workspace/vdm-tools/src/test/resources/monterey_hrbath.nc';
sql = '/Users/brian/workspace/vdm-tools/target/vdm-tools-0.1-SNAPSHOT/bin/
allAnnotations.txt';
vdm_altitude_test(sql, file, 'allAltitude-results.txt')
```

- The allAltitude-results.txt file will have the deltas of position and depth

## Verifying last date of successful merge

This page last changed on May 24, 2011 by [linda](#).

1. For Macs, open a Terminal (On PC's use Putty <http://www.chiark.greenend.org.uk/~sgtatham/putty/>)
2. ssh seaspray
3. cd /opt/vars/bin
4. ./lookup\_mergestatus <ROV> <DIVE>

Examples:

```
./lookup_mergestatus Tiburon 775
./lookup_mergestatus "Doc Ricketts" 82
./lookup_mergestatus Ventana 2011
```

Note: Doc Ricketts needs quotes around it  
The results will look something like:

```
=====
ROV: Doc Ricketts
Dive Number: 82
```

```
==== Status of Data Merge with EXPD ====
Merged On: 2011-05-23 16:21:58
Merged using edited navigation data
Recorded Dates are from 'VARS' database(s)
Video-frame count: 681
Status Message: Using PRAGMATIC merge
```

```
==== Details About this VideoArchiveSet ====
Tracking Number: 2009247
Number of dives: 1
1) Dive Number: 82
Chief Scientist: David Clague
Number of Tapes: 15
1) Name: D0082-06HD
Video-frame count: 85
2) Name: D0082-08HD
Video-frame count: 82
3) Name: D0082-03HD
Video-frame count: 104
4) Name: D0082-02HD
Video-frame count: 42
5) Name: D0082-04HD
Video-frame count: 68
6) Name: D0082-10HD
Video-frame count: 39
7) Name: D0082-07
Video-frame count: 0
8) Name: D0082-05
Video-frame count: 0
9) Name: D0082-03
Video-frame count: 0
10) Name: D0082-02
Video-frame count: 0
11) Name: D0082-01
Video-frame count: 0
12) Name: D0082-01HD
Video-frame count: 63
13) Name: D0082-09HD
Video-frame count: 43
14) Name: D0082-07HD
Video-frame count: 95
15) Name: D0082-05HD
Video-frame count: 60
```

## Video and Data Diagram

This page last changed on Nov 27, 2007 by [brian](#).

### Meeting to discuss the big picture of video data flow

In attendance, [Brian Schlining](#), [Kyra Schlining](#), [[~rich](#)], [Mike McCann](#), [[~linda](#)], [Lonny Lundsten](#) and [Nancy Jacobsen-Stout](#)

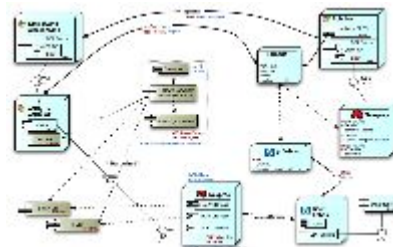
We created a digram that outlines the who, what, where and when of the data flow and processing. Below are a picture of our notes as well as an edited diagram. The source file for the edited document can be found [here](#)

### Video and Data Diagrams

([view as slideshow](#))



Picture of  
white board  
that captured  
our notes



Video Data  
Flow Diagram

## Video Lab

---

This page last changed on May 23, 2007 by [brian](#).

[Deep-sea Guide](#)

[HD vs SD Frame Capture](#)

## Deep-sea Guide

This page last changed on Feb 14, 2012 by [brian](#).



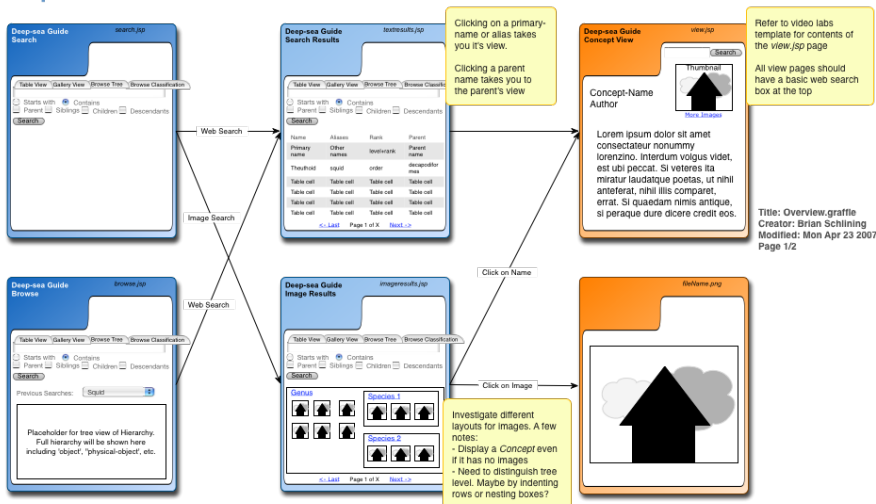
### This page is obsolete

The content of this page is outdated. It is only retained for historical purposes. Refer to [the Video Annotation Analysis and Presentation wiki](#) for up-to-date info.

## Web Flow

Below is a diagram with the basic web flow and page layout ideas. The diagrams do not represent the theme we will be using. The pages themselves will look similar to the MBARI external web.

### Deep-sea Guide Overview



### search.jsp

This page will have 4 tabs:

1. **Table view** - Search results displayed in *textresults.jsp*
2. **Gallery View** - Search results displayed in *imageresults.jsp*
3. **Browse tree** - Search/Browse page similar to Lori's existing tree view
  - Q: Do we need to have the *rank* and *rank level* rendered? A: Yes
4. **Browse classification**

Navigation should be consistent. Search page should **always** take a user to the results page even if there is 0 or 1 result.

### view.jsp

#### Q: How do we want to render the tree view on this page?

Do we want the [Tree of Life](#) view or the [ITIS](#) style? The video lab likes the tree of life style. **We will hold off from implementing this as it's a lower priority than the other functionality.**

- More details about *view.jsp* can be found in [DSGViewTemplate.doc](#)
- Not all LinkRealizations will or need to start with 'dsg'. Any LinkRealizations that have not already been displayed on this page will be added under *Additional Information*
- All fields shown in [DSGViewTemplate.doc](#) should be shown, even if the data for that field is not available.

## image.jsp

- Images are grouped by concept (hierarcically grouped). The exact layout is TBD. We will probably need to try out different layouts until we find one that works.
- Thumbnails of images that are available will be shown. The *Concept* link will have depth-distribution underneath it.
- **TODO: video lab will draw up an example and put images in the knowledgebase**
- All *Concepts* returned in the search should be shown, even if they do not have an image.

From [Susan Von Thun](#):

I came across this website looking for a crab picture with Kris Walz and she pointed out that the layout of these thumbnails is very easy to browse and click and might be a good idea for DSG.

<http://www.dnr.sc.gov/marine/serfc/gallery.htm>

## browse.jsp

Recent searches and the tree will be below the search box. The full hierarchy will be shown including 'object', 'physical-object', etc.

## DSG Milestones

 The focus of development will be on functionality. We will optimize for speed later on.

Contract runs 8 months from signing date, which was signed by Lori W. on 11/28/2006 and by MBARI staff 12/14/06. That puts us somewhere between July 28 and August 14, 2007. That leaves 3 to 3.5 months. I'm interpreting this means the later date, but I'll need to confirm that with Lori W.

**M1.** Search to TextResults.jsp and ImageResults.jsp and View.jsp. Target Date: mid June.

**M2.** Browse to TextResults.jsp and ImageResults.jsp and View.jsp. Target Date: mid July.

**M3.** Implement process for serving still images and video. Target Date: mid July.

**M4.** Documentation. Target date: end of July.

**M5.** Enhanced Features (graphical and statistical summaries) as described in deliverables. The basic functionality of M1 - M4 are critical. M5 will only be completed if time permits. Target date: mid August.

- For all milestones, the header, footer, tabs, search options should be consistent across all pages.
- As part of the iterative development process, we expect to meet with the developers ~ monthly in addition to remote development efforts.

## Comments

---

Are the 'Web Images Browse' titles meaningful, or just placeholders? They're not as I remember them from our meeting.

Those are links that take you to the correct search page (ala Google-like). They're place holders but clicking on them does the following:

1. **Web** - This search will direct your query to *textresults.jsp*
2. **Images** - This search will direct your query to *imageresults.jsp*
3. **Browse** - Clicking on that will bring up the tree view of the knowledgebase

Posted by [brian](#) at Apr 20, 2007.

---

The Deep-Sea in DSG is an adjective so it should be hyphenated.

Posted by [nancy](#) at Apr 23, 2007.

---

## HD vs SD Frame Capture

---

This page last changed on May 23, 2007 by [brian](#).

To: The ROV-UC, all ROV video and frame grab users, ROV pilots, Brian Schlining, Todd Ruston, Mike McCann  
From: Video Lab staff

### Standard Definition vs. High Definition Frame Grabs

The issue of upgrading the shipboard frame capture system from standard definition (SD) to high definition (HD) resolution has been raised several times recently. The Video Lab has discussed this issue and we would like to bring it to the attention of all ROV users to determine if action is warranted at this time. We need your help in answering some of the questions below.

### Frame Grab Facts

**Real-time Processing:** The shipboard system is configured to capture images directly from the HD camera using VARS, which currently creates PNG files that are also converted to JPG files in post-processing. These file types are both compressed from the original SD resolution. It is possible to specify a higher resolution file type; however, all of our post-dive processes are scripted to run on these two file types.

The majority of the frame grabs taken at sea are not optimal. We estimate that more than 50% of the frame grabs taken at sea are either not useable or not necessary because the target object is out of focus, out of the frame, or there is an over-abundance of shots of the same object. It is just not realistic to expect to capture the best possible frame real-time at sea

The onboard Coolpix camera is also available for taking real-time high-resolution images (2048x1536). However, the flash on the Coolpix camera scares away some animals, e.g., fish, so may not be an option if the organism is to be collected.

**Post Dive Processing:** When capturing from the video stream in the Digital Lab, the video can be cued to the exact frame of interest and captured using the BlackMagic interface which saves the image as a Photoshop .psd file (~6-9 MB). The image can then be converted to any image format that Photoshop recognizes. This is the best method for capturing a high-resolution HD image for publication purposes or for scientific measurements.

Please note, using VARS, the post dive annotators now regularly supplement at-sea frame grabs with good (i.e. properly cued and focused) frame grabs of additional organisms, geologic features, or equipment of general institute interest. These frame grabs are added to the thumbnails in the expedition database via a nightly process. Therefore, we are now deleting all sub-optimal real-time frame grabs as we annotate. These frame grabs remain available through the expedition database, but are not viewable using VARS.

Current space needs using VARS for SD frame grabs:  
Anywhere from 0-300+ frame grabs are taken per dive (~180 is typical).  
PNG files = ~300-700 KB each and JPG files = ~50-200 KB each.

HD frame grabs taken in the lab using the BlackMagic Deck Controller:  
8+ MB each.

### Questions to be considered

Q: What is the function of the frame grabs taken real-time at sea?

A: The standard purpose is to act as storyboard to reference the major events of each dive, for example, samples, interesting events, etc.; therefore, compressed SD images should be sufficient.

Q: What else are these images used for? Are ROV Users utilizing real-time, full resolution images for presentation purposes or publications? If so, what resolution do they require for these purposes? Can all of these cases be dealt with post-dive in the Digital Lab, or with the onboard Coolpix camera?

A: ?

Q: Will the benefits of real-time HD frame grabs outweigh the accumulation of many unusable HD frame grabs?

A: ?

Q: What are the costs of converting to and storing HD frame grabs?



A: A new HD frame grab board is about ~\$1,000. The estimated storage space increase is ~10x over SD images. Additional costs include maintenance of the space (clearing off drives on the ship) and effort involved in changing the post-dive scripts to work with HD images.

Q: Estimate of these additional costs?

A: ?

Q: Will writing larger image files bog down the VARS program on the ships?

A: ?

Q: Currently, we have no way of monitoring audio on HD tapes, therefore, someone capturing frames in the lab post-dive using BlackMagic will not be able to hear any audio annotations made at sea (e.g., "releasing a chemical NOW"). In this case it would be much easier to take the frame grabs real-time to mark specific events.

A: Audio comments can be recorded on the digital Betacam tapes and annotated using VARS, then cross referenced to the HD tape.

Q: Is this work around sufficient for every situation?

A: ?

Other considerations?