Intellistar 1 Guide
Last Updated 06/25/2025
Written by the 9D Crew

Chapter 1 – Requirements

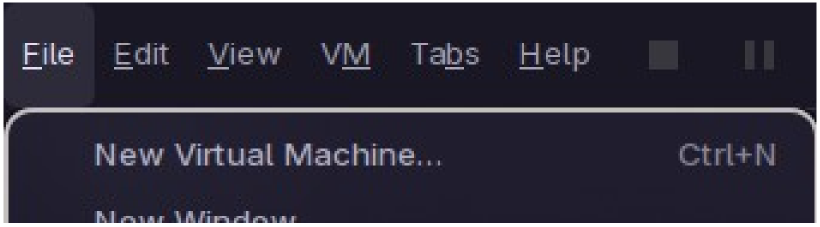
You will need:

- VMware Workstation (Windows) (Debian / Arch)
- Python 3
- Node JS
- i1-encoder by 45 Degrees
- i1-heartbeat by 45 Degrees
- An Intellistar 1 VHD

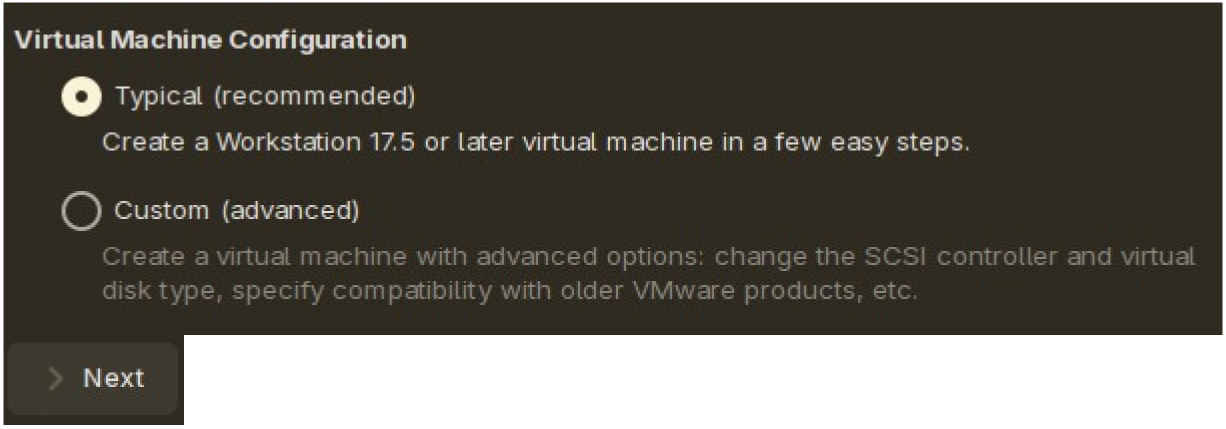
Extract i1-encoder first, and then i1-heartbeat into the same folder.

Chapter 2 – VM Setup

Open VMware Workstation and go to File > New Virtual Machine



Check on "Typical" and then click "Next"



Virtual Machine Configuration

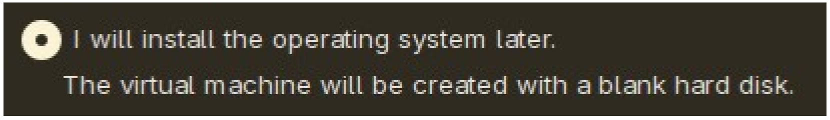
● Typical (recommended)

Create a Workstation 17.5 or later virtual machine in a few easy steps.

○ Custom (advanced)

Create a virtual machine with advanced options: change the SCSI controller and virtual disk type, specify compatibility with older VMware products, etc.

Check “I will install the operating system later”, then click “Next”



● I will install the operating system later.

The virtual machine will be created with a blank hard disk.

For Guest Operating System, Select “Other”
and from the dropdown select “FreeBSD version 10 and earlier”

Guest Operating System

○ 1. Microsoft Windows

○ 2. Linux

○ 3. VMware ESX

● 4. Other

Version: FreeBSD version 10 and earlier

Set the name and folder location to whatever you want, it doesn’t matter.

Virtual Machine Name

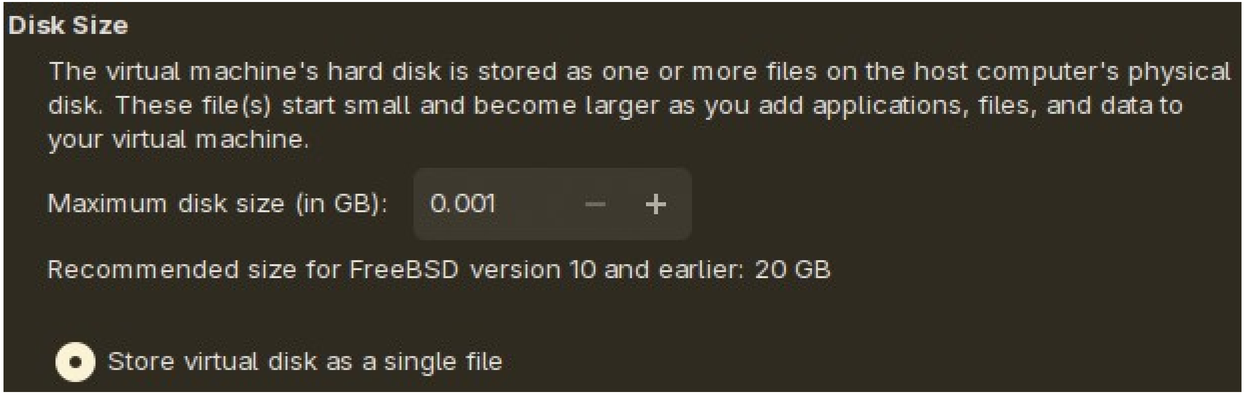
Name: Intellistar

Location: /home/flynn/vmware/Intellistar

The default location can be changed at Edit > Preferences.

The Default Folder location is perfectly fine however.

Set the Disk Size to 0.001GB and “Store virtual disk as a single file”



Disk Size

The virtual machine's hard disk is stored as one or more files on the host computer's physical disk. These file(s) start small and become larger as you add applications, files, and data to your virtual machine.

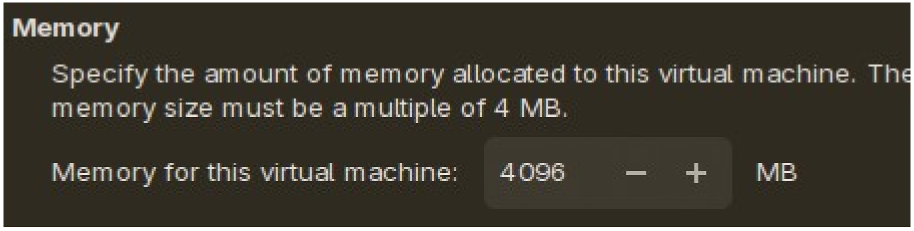
Maximum disk size (in GB): 0.001

Recommended size for FreeBSD version 10 and earlier: 20 GB

● Store virtual disk as a single file

Click next and then “Customize Hardware”

Click on “Memory” and set it to 4096MB.



Memory

Specify the amount of memory allocated to this virtual machine. The memory size must be a multiple of 4 MB.

Memory for this virtual machine: 4096 MB

Click on “CD/DVD” and then click the “Remove” button.

Click on “Network Adapter” and set it to “Bridged”

Network Connection

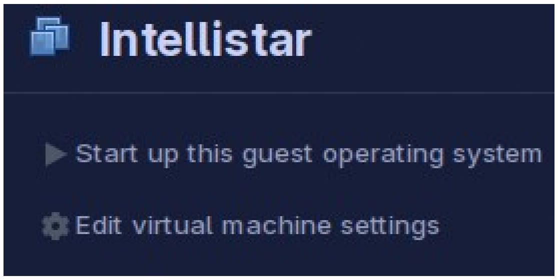
● Bridged: Connected directly to the physical network

Click on “Sound Card” and click “Remove”

Click on “USB Controller”, click “Remove” and then click “Close”

Click “Finish” (We aren’t done yet.)
(If you see a page about installing the guest operating system and VMware tools, click “Close”)

Click on “Edit Virtual Machine Settings”



Intellistar

▶ Start up this guest operating system

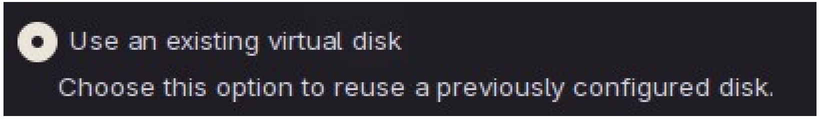
Edit virtual machine settings

Click on “Hard Drive” and click “Remove”

Now Press “Add” and select “Hard Drive” then press “Next”

Select “IDE” and then “Next”

Click on “Use an existing virtual disk” and click “Next”.



● Use an existing virtual disk

Choose this option to reuse a previously configured disk.

Click on “Browse..” then in the file dialog, select “All Files” on the bottom right of the dialog, and then open the i1 VHD file.

All Files

Click “Finish”, then click “Keep Existing Format” in the new popup.

Convert existing virtual disk to newer format?

The chosen virtual disk can be converted to the newest format supported by this Workstation 17.5 or later virtual machine. However, after conversion the virtual disk will be unusable with older virtual machines.

Click “Save” and then “Start up this guest operating system” and watch the i1 boot.

If you get a prompt that says “F1” press enter.

Chapter 3 – i1 Setup

If everything went well you should be seeing the following screen.

```
d[231]: [info] writing data to temporary file /usr
s.dat.tmp
d[231]: [info] renamed temp. file as permanent dat
a file /usr/twc/domestic/data/datastore/ds.dat
Jun 24 18:52:55 localhost renderd[246]: [warn] 1 frame time drift detected; adju
sting
Jun 24 18:53:24 localhost last message repeated 17 times
Jun 24 18:53:24 localhost datad[231]: [info] checking for expired entries
Jun 24 18:53:25 localhost renderd[246]: [warn] 1 frame time drift detected; adju
sting
Jun 24 18:53:54 localhost last message repeated 17 times
Jun 24 18:53:54 localhost datad[231]: [info] checking for expired entries
Jun 24 18:53:54 localhost datad[231]: [info] no outstanding log file to commit
Jun 24 18:53:56 localhost renderd[246]: [warn] 1 frame time drift detected; adju
sting
Jun 24 18:54:23 localhost last message repeated 16 times
Jun 24 18:54:24 localhost datad[231]: [info] checking for expired entries
Jun 24 18:54:25 localhost renderd[246]: [warn] 1 frame time drift detected; adju
sting
Jun 24 18:54:53 localhost last message repeated 17 times
Jun 24 18:54:54 localhost datad[231]: [info] checking for expired entries
Jun 24 18:54:54 localhost datad[231]: [info] no outstanding log file to commit
Jun 24 18:54:55 localhost renderd[246]: [warn] 1 frame time drift detected; adju
sting
```

```
Pkg: twc_rsrc_maps_nonconus, Version: 1.1
Pkg: twc_rsrc_vocal_male, Version: 1.12
Pkg: twc_tsc, Version: 1.26.17
Pkg: twc_update, Version: 1.1
Pkg: twc_xserver, Version: 1.3.1
240: old priority 0, new priority -10
243: old priority 0, new priority -10
246: old priority 0, new priority -10
Exception exceptions.TypeError: "'NoneType' object is not callable" in <bound me
thod _objref_ProxyPushConsumer.__del__ of <twccommon.corba.CosEventChannelAdmin.
_objref_ProxyPushConsumer instance at 0x84eccac>> ignored
Exception exceptions.TypeError: "'NoneType' object is not callable" in <bound me
thod _objref_ProxyPushConsumer.__del__ of <twccommon.corba.CosEventChannelAdmin.
_objref_ProxyPushConsumer instance at 0x84e8a2c>> ignored
Exception exceptions.TypeError: "'NoneType' object is not callable" in <bound me
thod _objref_ProxyPushConsumer.__del__ of <twccommon.corba.CosEventChannelAdmin.
_objref_ProxyPushConsumer instance at 0x84e8a2c>> ignored
Exception exceptions.TypeError: "'NoneType' object is not callable" in <bound me
thod _objref_ProxyPushConsumer.__del__ of <twccommon.corba.CosEventChannelAdmin.
_objref_ProxyPushConsumer instance at 0x84e8a2c>> ignored
263: old priority 0, new priority 10
dgadmin>
```

Click on the terminal in the bottom left corner and run

```
runomni /twc/util/load.pyc local S
```

and

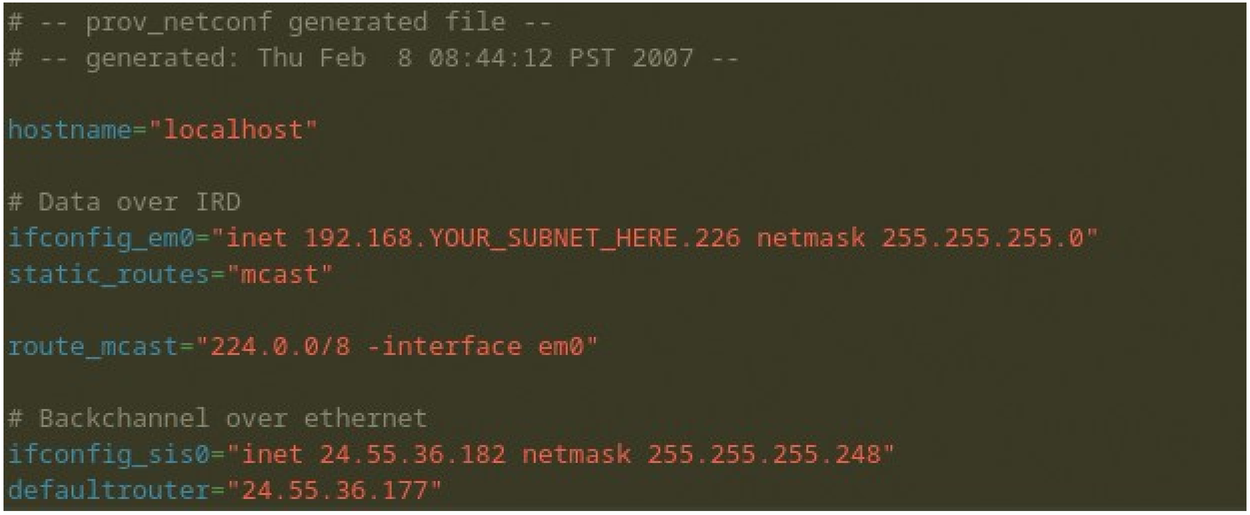
```
runomni /twc/util/run.pyc local
```

Give youself a big pat on the pack, your halfway done with setup.

We will now setup the connection to the internet so the encoders function. Reboot the virtual machine, and when it says “press any other key for command prompt” do so.
Then run `boot -s`, when it asks for the path of shell press enter, run `fsck -y`, `mount -a`, `bash` , then `ee /etc/rc.conf`.

On your host machine, run ipconfig or ip addr to find your subnet, (I.E 192.168.1.XXX, 192.168.2.XXX, etc.)

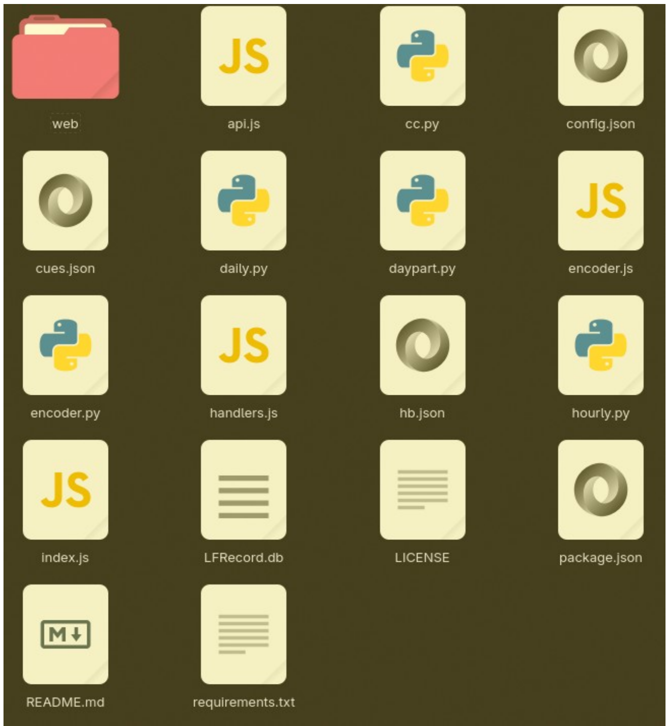
Then modify the file with the updated subnet like so:



```
# -- prov_netconf generated file --
# -- generated: Thu Feb  8 08:44:12 PST 2007 --

hostname="localhost"

# Data over IRD
ifconfig_em0="inet 192.168.YOUR_SUBNET_HERE.226 netmask 255.255.255.0"
static_routes="mcast"

route_mcast="224.0.0/8 -interface em0"

# Backchannel over ethernet
ifconfig_sis0="inet 24.55.36.182 netmask 255.255.255.248"
defaultrouter="24.55.36.177"
```

Press CTRL + C, type exit and hit enter, then reboot the VM.

Open two terminals on your host machine and navigate to the folder with i1-encoder and i1-heartbeat extracted in it. If it was extracted correctly the folder should look like this.



Run the following commands to install all dependences:

`pip install -r requirements.txt`
`npm install`

Edit config.json and add your subnet, save it, and in one terminal run

```
python encoder.py
```

and in the other run

```
node index.js
```

You now have LOT8s working and Weather Data correctly being sent to the i1.