Qube Renderfarm Guide: Houdini Mantra IFD file rendering

Scene setup

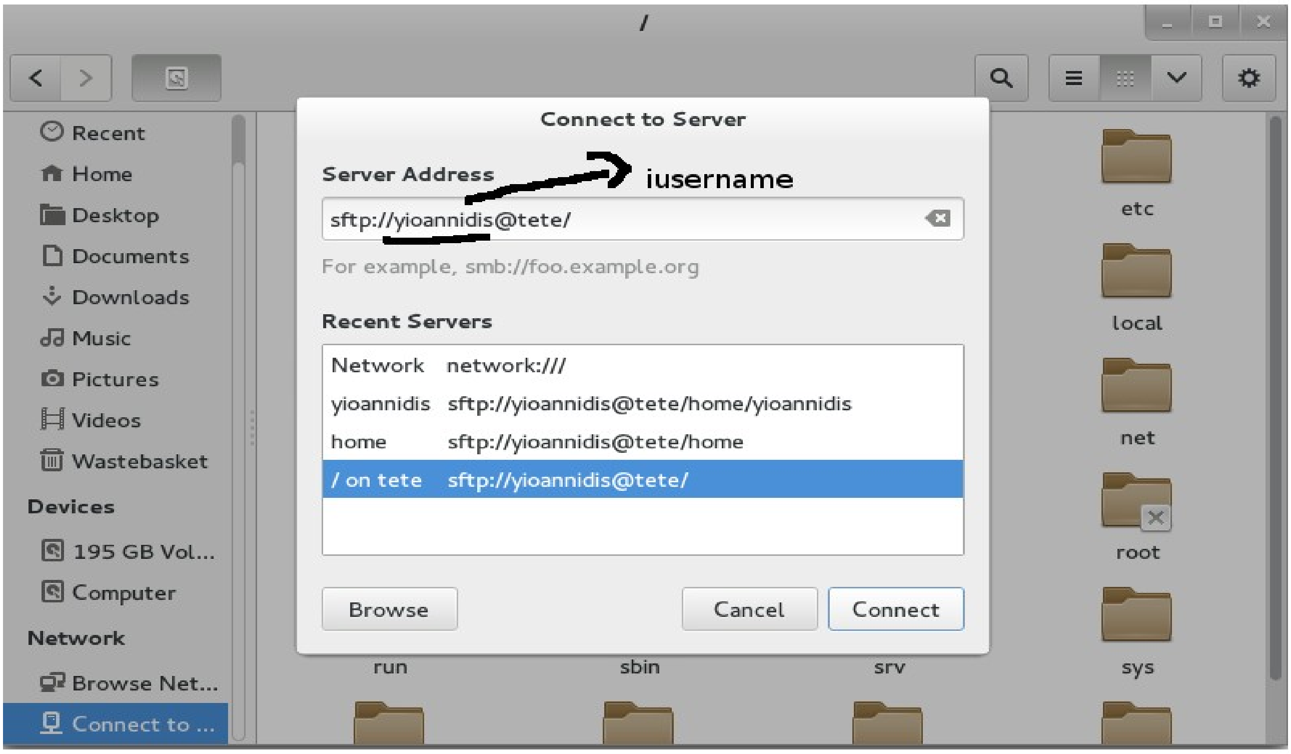
In order to prepare your scene for submission to the renderfarm, the following steps are suggested:

- Place scene file, and associated scene assets (eg. Textures, Sims etc.) in folders, within a single directory

- Make use of relative file paths using the $HIP or $JOB variables when assigning all scene assets
- (If $JOB is being used it can be set in the textport i.e.
  set -g JOB = /render/**isuername**/**SimulationQubeTest**)

- Copy the entire scene folder to your directory within /render on the tete server.

  ◦ This can be done using the Connect to Server... option which can be found in the Places main linux menu, all the way down



Connect to Server

Server Address

iusername

sftp://yioannidis@tete/

For example, smb://foo.example.org

Recent Servers

Network	network:///
yioannidis	sftp://yioannidis@tete/home/yioannidis
home	sftp://yioannidis@tete/home
/ on tete	sftp://yioannidis@tete/

server address: **sftp://iusername@tete/**

  ◦ It is sensible to add a bookmark to this location, so it can be easily accessed when setting up and accessing future renders.

  ◦ Copy and Paste can be used to copy your scene directory into this directory ready for use on the render farm.

- ◦ Alternatively files can be copied using the sftp command line tool.

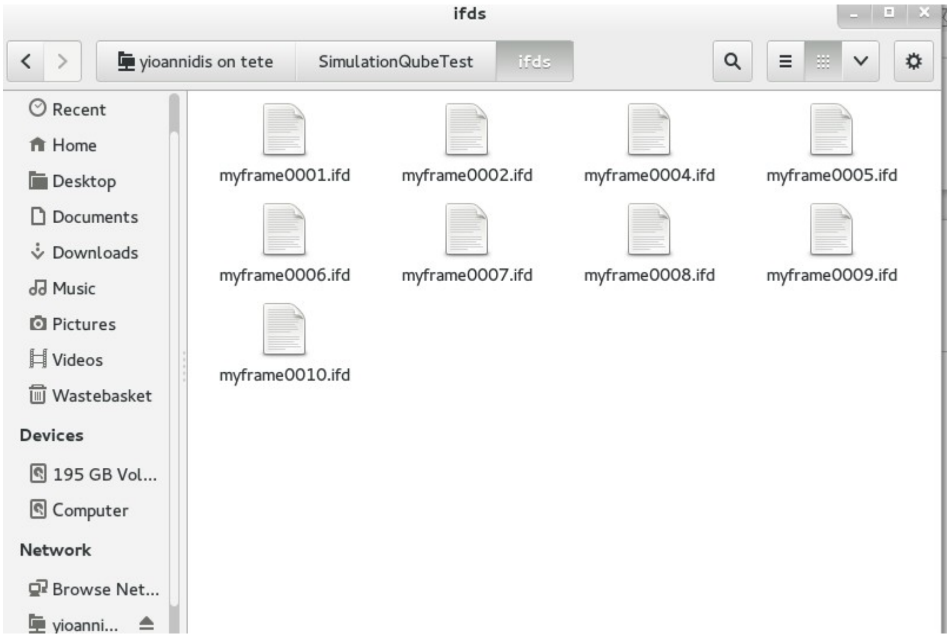
- Start Qube:

- Submit a Houdini job by clicking on: **Submit–Cmdrange Job...**

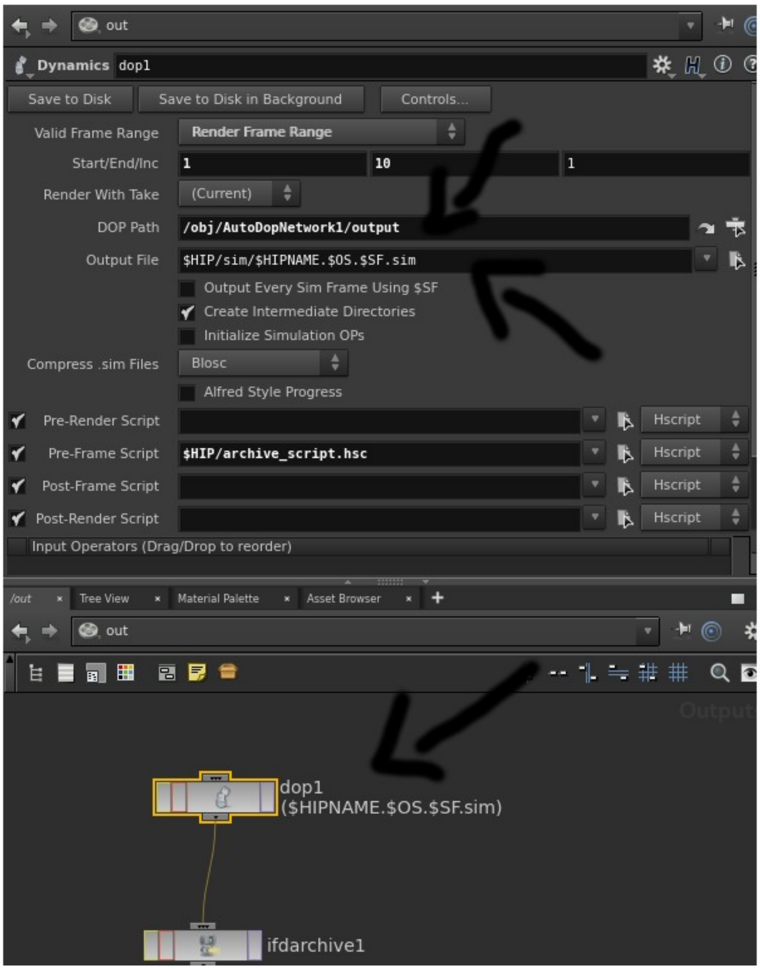
Suggested Qube Settings

The following defaults are a good starting point for starting a Houdini job on the renderfarm.

Make sure the there is a directory with all the ifd files need for mantra to read.



The same applies if you are want to render a Simulation on the farm:
Make sure the there is a directory with all the sim files needed, as well as a similar setup inside the AutoDopNetwork to export the sim files to it.
Additionally, as with a Dynamics dop in the Output network needs to be added to render out the sim files from the AutoDopNetwork.
(see scene setup bellow):



Dynamics dop1

Valid Frame Range: Render Frame Range

Start/End/Inc: 1 10 1

Render With Take: (Current)

DOP Path: /obj/AutoDopNetwork1/output

Output File: $HIP/sim/$HIPNAME.$OS.$SF.sim

☐ Output Every Sim Frame Using $SF
☑ Create Intermediate Directories
☐ Initialize Simulation OPs

Compress .sim Files: Blosc

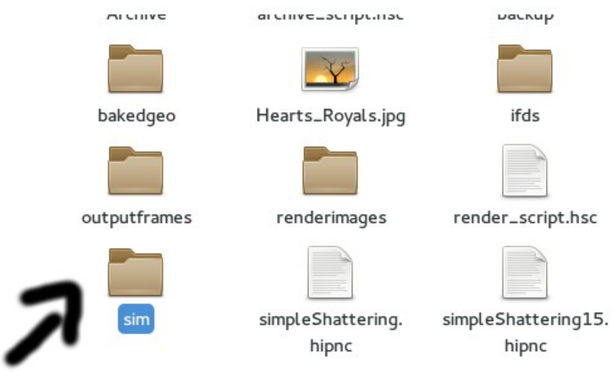
☐ Alfred Style Progress

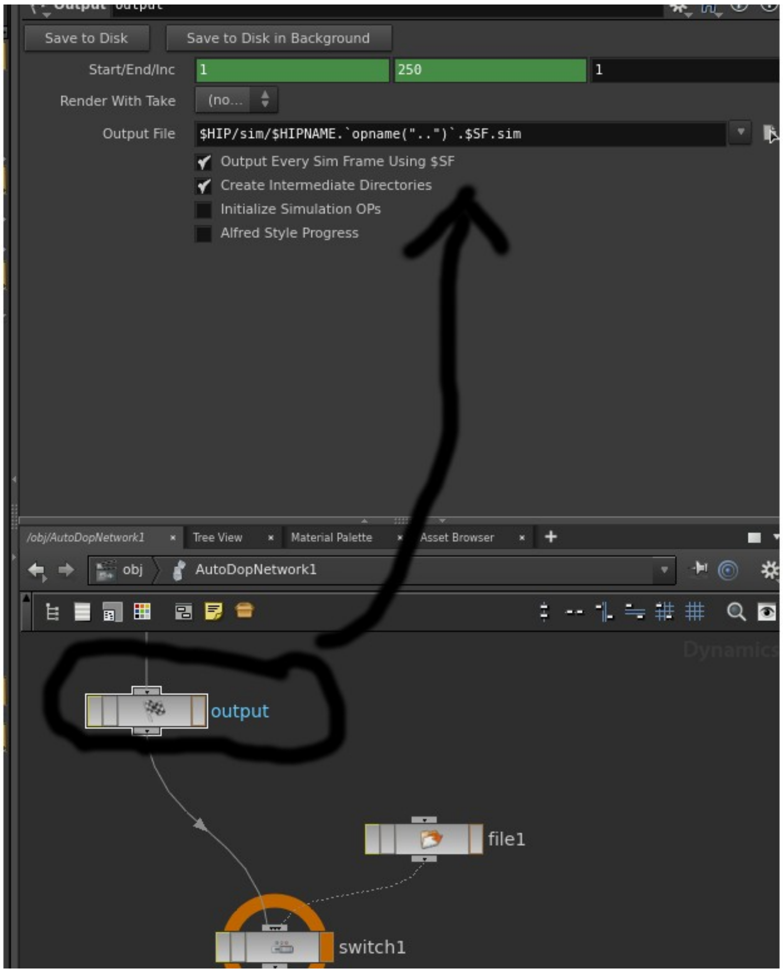
☑ Pre-Render Script: Hscript
☑ Pre-Frame Script: $HIP/archive_script.hsc Hscript
☑ Post-Frame Script: Hscript
☑ Post-Render Script: Hscript

Input Operators (Drag/Drop to reorder)

dop1
($HIPNAME.$OS.$SF.sim)

ifdarchive1


Archive
archive_script.hsc
backup
bakedgeo
Hearts_Royals.jpg
ifds
outputframes
renderimages
render_script.hsc
sim
simpleShattering.hipnc
simpleShattering15.hipnc



Start/End/Inc 1 250 1

Render With Take (no...

Output File `$HIP/sim/$HIPNAME.`opname("..")`.$SF.sim`

☑ Output Every Sim Frame Using $SF

☑ Create Intermediate Directories

□ Initialize Simulation OPs

□ Alfred Style Progress

(To generate the ifds refer to the **Qube_Renderfarm_Guide_Houdini_Hrender.docx** guide) (basically resubmit a HRender job on Qube and remember that the .hipnc scene file you are trying to render needs to have the “Save IFD files to disk” checkbox of your mantra out driver ticked)

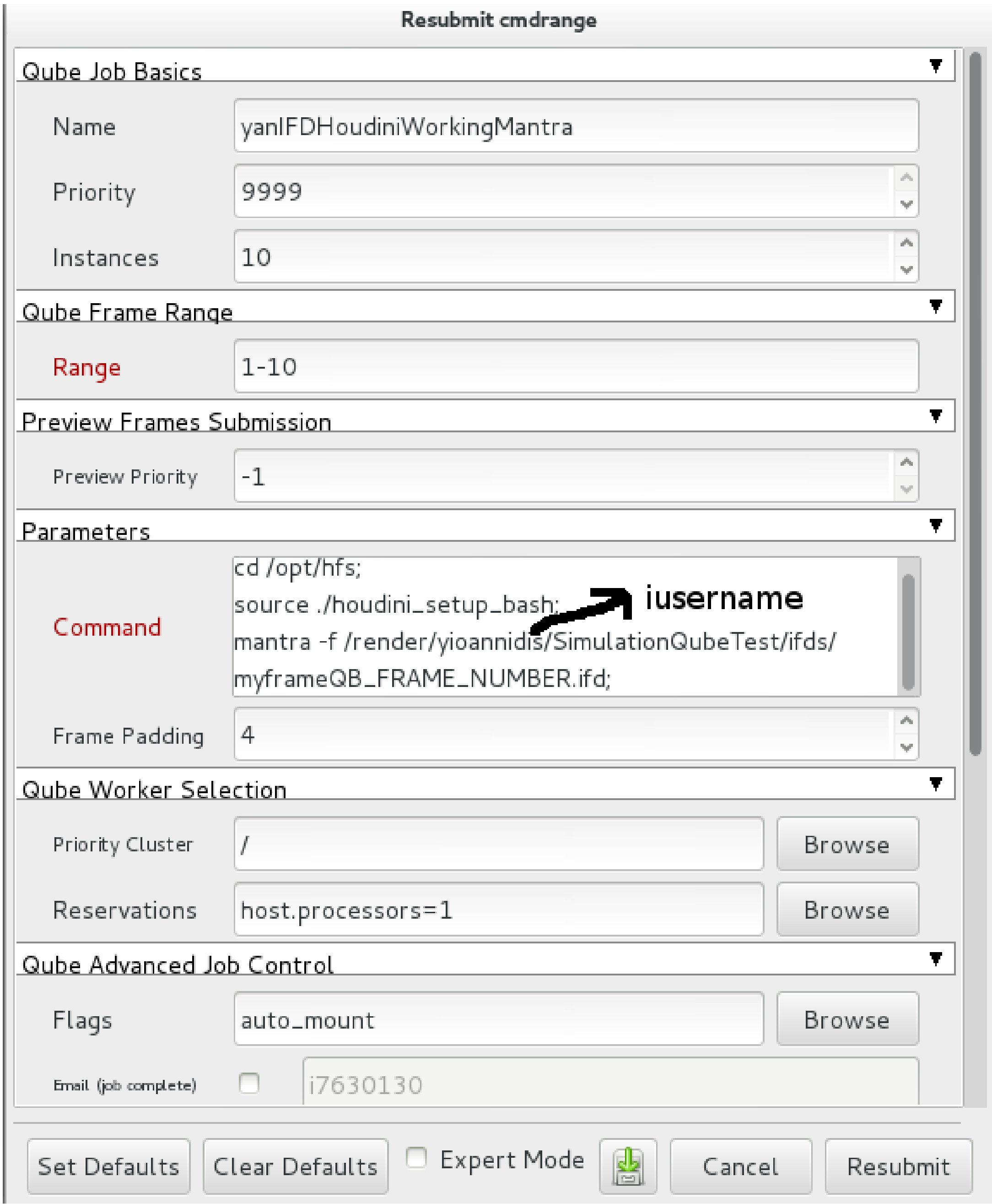
Instances: Set number of frames to render in parallel (not more than 40)

Range: Specify frame range in the format start-end.

IFD file: Enter path to the ifd file to render i.e.
/render/iusername/SimulationQubeTest/ifds/myframe.ifd

Command: Render command to be executed. This needs to include commands to initialize the HoudiniEnvironment. We recommend starting with the entire template shown here:

cd /opt/hfs;source ./houdini_setup_bash;
mantra -f /render/iusername/SimulationQubeTest/ifds/myframeQB_FRAME_NUMBER.ifd;



Resubmit cmdrange

Qube Job Basics

Name: yanIFDHoudiniWorkingMantra

Priority: 9999

Instances: 10

Qube Frame Range

Range: 1-10

Preview Frames Submission

Preview Priority: -1

Parameters

Command:

```
cd /opt/hfs;
source ./houdini_setup_bash;
mantra -f /render/yioannidis/SimulationQubeTest/ifds/
myframeQB_FRAME_NUMBER.ifd;
```

Frame Padding: 4

Qube Worker Selection

Priority Cluster: /

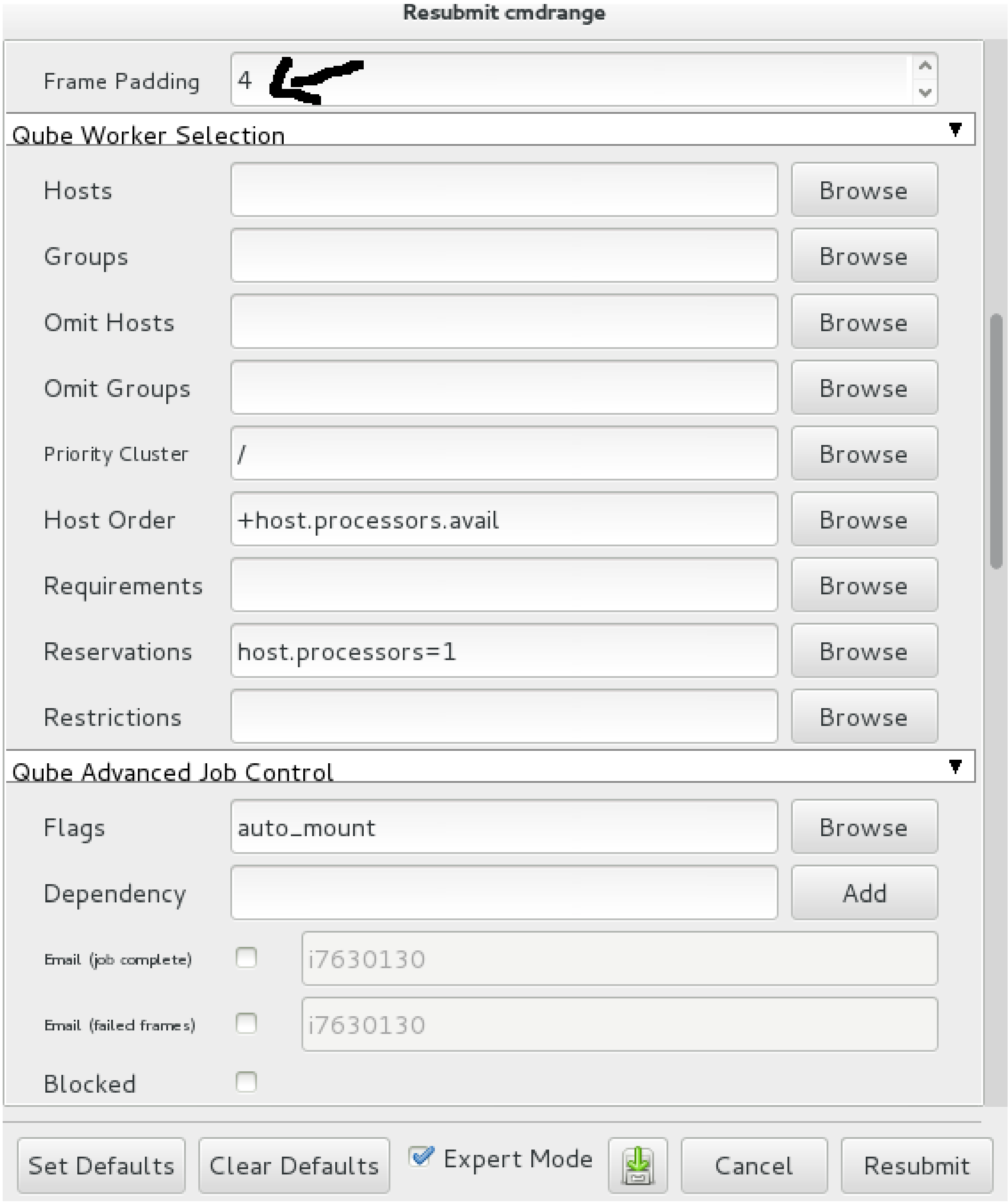
Reservations: host.processors=1

Qube Advanced Job Control

Flags: auto_mount

Email (job complete): □ i7630130

Be careful and use the same frame padding as the one in the scene you generated the ifds from



Resubmit cmdrange

Frame Padding: 4

Qube Worker Selection

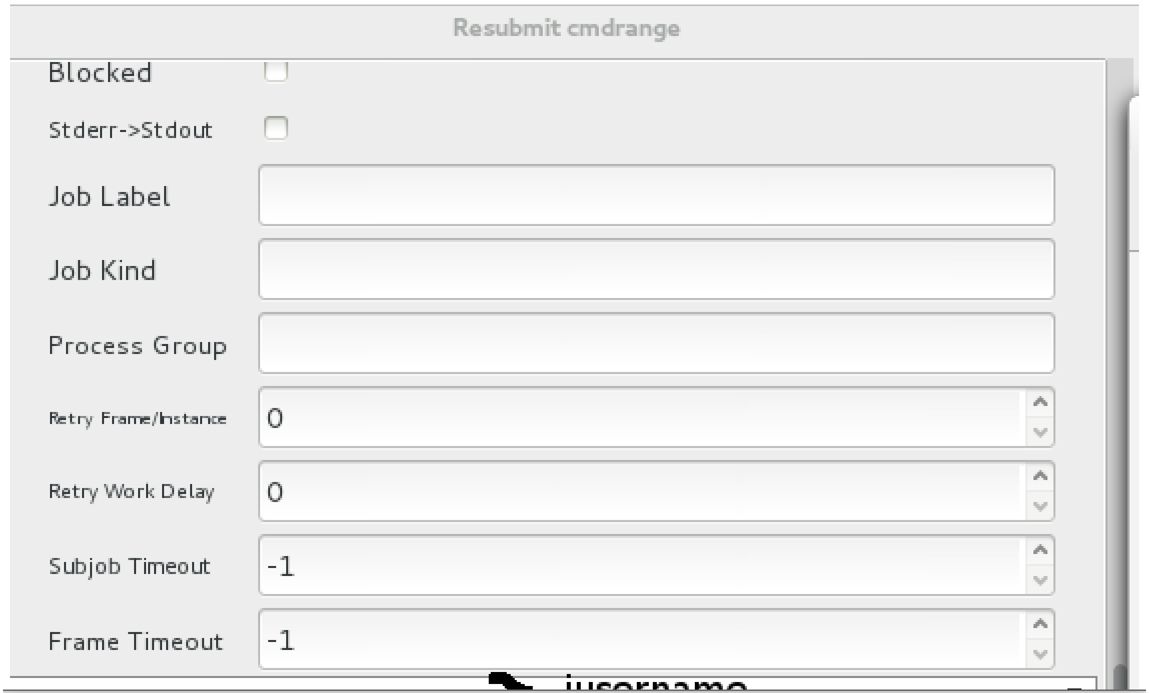
- Hosts:
- Groups:
- Omit Hosts:
- Omit Groups:
- Priority Cluster: /
- Host Order: +host.processors.avail
- Requirements:
- Reservations: host.processors=1
- Restrictions:

Qube Advanced Job Control

- Flags: auto_mount
- Dependency:
- Email (job complete): □ i7630130
- Email (failed frames): □ i7630130
- Blocked: □

☑ Expert Mode

Environment Variables: Used to add environment variables.
Must have variable for license server set here



Resubmit cmdrange

Blocked ☐

Stderr->Stdout ☐

Job Label

Job Kind

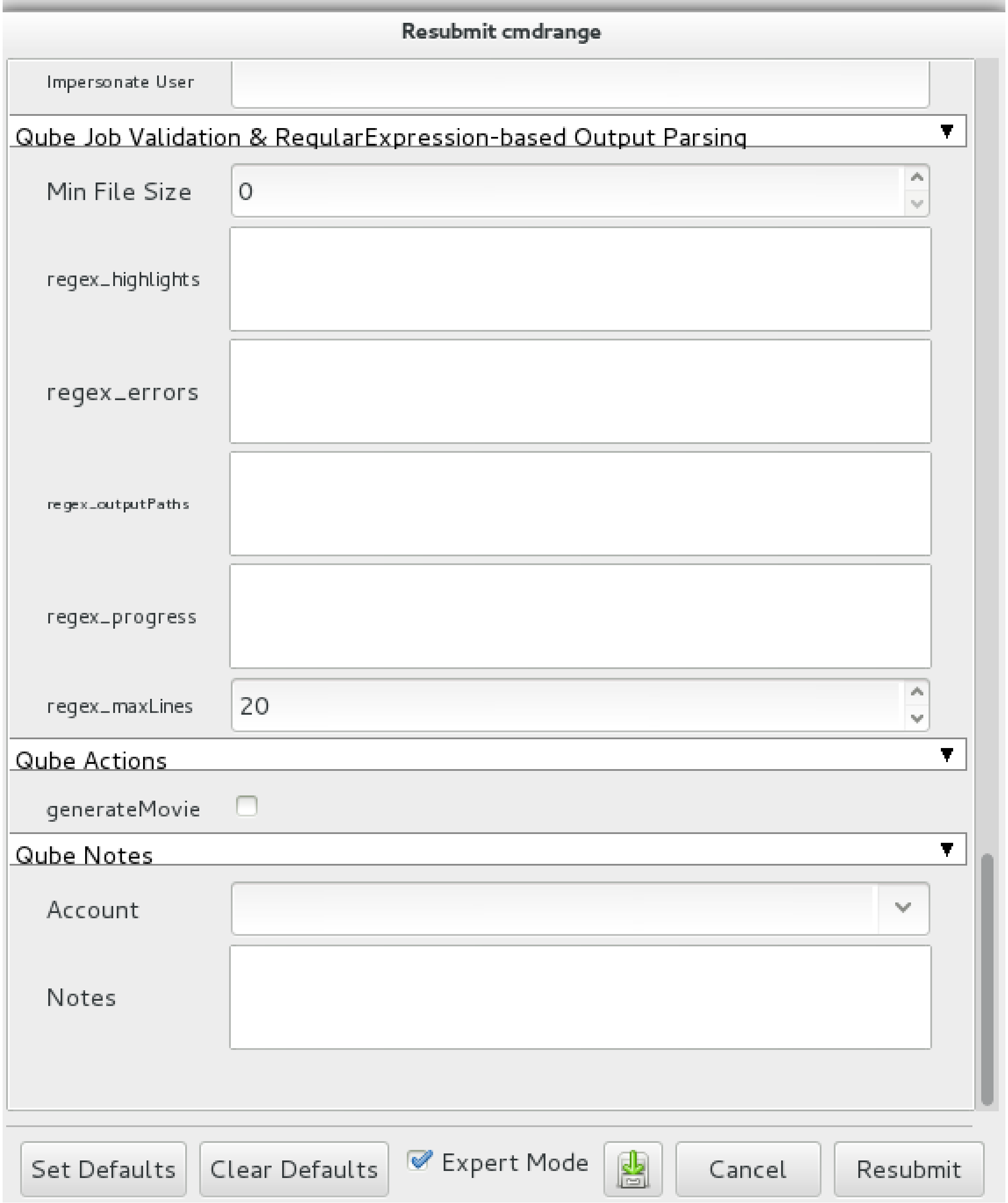
Process Group

Retry Frame/Instance 0

Retry Work Delay 0

Subjob Timeout -1

Frame Timeout -1



Resubmit cmdrange

Impersonate User

Qube Job Validation & RegularExpression-based Output Parsing ▼

Min File Size 0

regex_highlights

regex_errors

regex_outputPaths

regex_progress

regex_maxLines 20

Qube Actions ▼

generateMovie ☐

Qube Notes ▼

Account

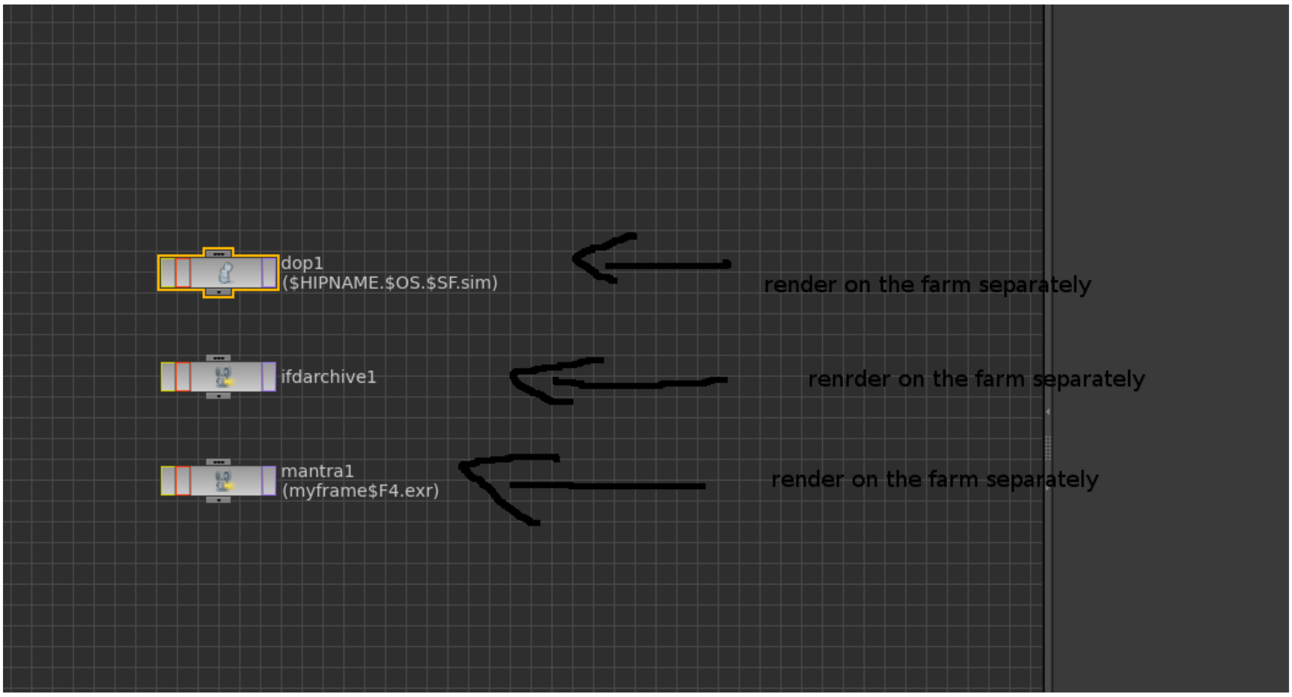
Notes

Tips if you find you get dropped frames:

If you see that some of your ifd frame files are dropped for no apparent reason, you can **re-render** and **try to re-generate the IFD files**, which shouldn't take long usually cause they are much faster to generate rather than rendering from the live Houdini scene network.

OR

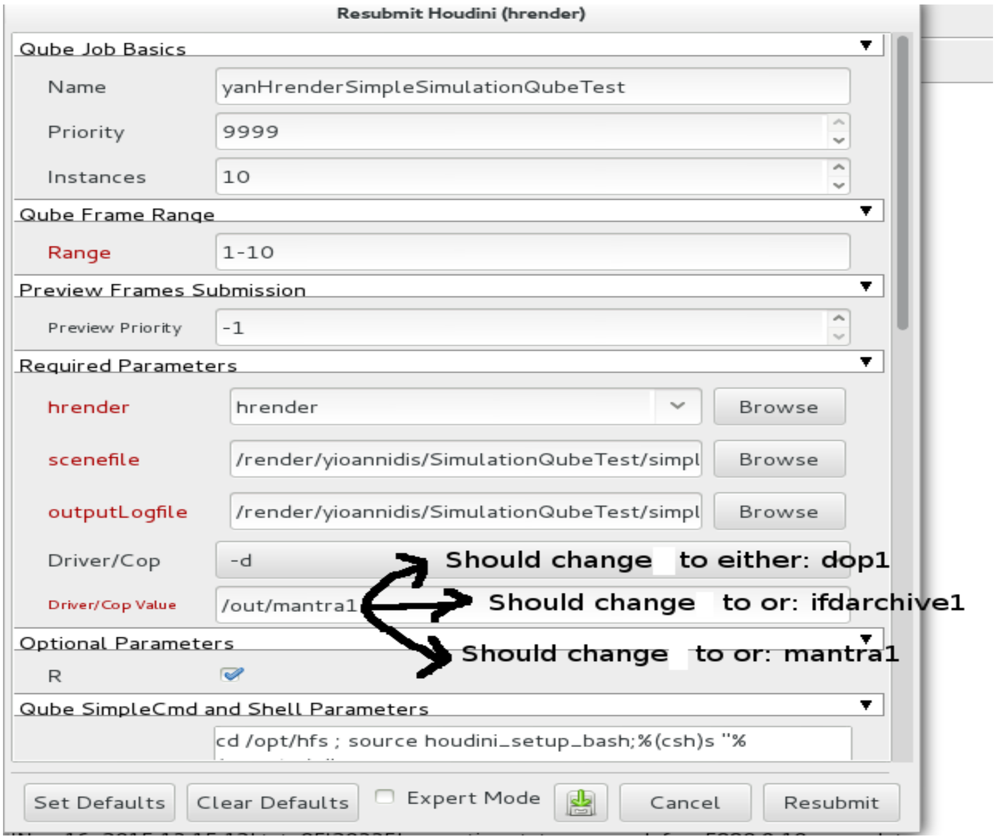
Instead of using a chain in the outputs level in Houdini, just disconnect and render separately each one of them



render on the farm separately

renrder on the farm separately

render on the farm separately


Resubmit Houdini (hrender)

Qube Job Basics

Name	yanHrenderSimpleSimulationQubeTest
Priority	9999
Instances	10

Qube Frame Range

Range	1-10

Preview Frames Submission

Preview Priority	-1

Required Parameters

hrender	hrender
scenefile	/render/yioannidis/SimulationQubeTest/simpl
outputLogfile	/render/yioannidis/SimulationQubeTest/simpl
Driver/Cop	-d
Driver/Cop Value	/out/mantra1

Should change to either: dop1

Should change to or: ifdarchive1

Should change to or: mantra1

Optional Parameters

R	✓

Qube SimpleCmd and Shell Parameters

cd /opt/hfs ; source houdini_setup_bash;%(csh)s "%