

## ldt.config: HyMAP Settings (1/2)

```
# == LDT Main Entry Options ==
```

```
LDT running mode:          "LSM parameter processing" # LDT type of run-mode (top-level option)
LSM parameter attributes file:  ./LS_PARAMETERS/param_attribs.txt # List of LSM Parameter types
Processed LSM parameter filename: ./lis_input.noahmp36_hymap_amazon.nc # Final output file read by LIS-7

LIS number of nests:          1 # Total number of nests run by LIS
Number of surface model types: 1 # Total number of desired surface model types
Surface model types:          "LSM" # Surface models: LSM | Openwater
Land surface model:          "Noah-MP.3.6" # Enter LSM(s) of choice, "Noah.3.3"
Lake model:                   none # Enter Lake model(s) of choice
Routing model:                "HYMAP" # "HYMAP" | "none"
Water fraction cutoff value:   0.5 # Fraction at which gridcell is designated as 'water'
Incorporate crop information:  .false. # Option to modify LSM parameters if crop info present

Number of met forcing sources: 1 # Enter number of forcing types
Met forcing sources:          "GDAS" # Specify links below, 'none' if no forcing selected
```

```
# LIS domain: (See LDT User's Guide for other projection information)
```

```
Map projection of the LIS domain: latlon # Specifies the output LIS domain grid to be used with LIS
```

```
# SALDAS - Amazon:
```

```
Run domain lower left lat:    -17.95 #-19.95
Run domain lower left lon:    -81.95 #-82.05
Run domain upper right lat:    0.95 #2.05 ;1.05
Run domain upper right lon:   -67.05 #-66.95
Run domain resolution (dx):    0.1 # 0.1 for 10 km, 0.05 for 5 km
Run domain resolution (dy):    0.1
```

## ldt.config: HyMAP Settings (2/2)

```
HYMAP river width map:          ./LS_PARAMETERS/HYMAP_10KM_GLOBAL/riwth_Getirana_Dutra.bin
HYMAP river height map:         ./LS_PARAMETERS/HYMAP_10KM_GLOBAL/rivhgt_Getirana_Dutra.bin
HYMAP river roughness map:      ./LS_PARAMETERS/HYMAP_10KM_GLOBAL/rivman_Getirana_Dutra.bin
HYMAP floodplain roughness map: ./LS_PARAMETERS/HYMAP_10KM_GLOBAL/fldman.bin
HYMAP river length map:         ./LS_PARAMETERS/HYMAP_10KM_GLOBAL/rivlen.bin
HYMAP floodplain height map:    ./LS_PARAMETERS/HYMAP_10KM_GLOBAL/fldhgt.bin
HYMAP floodplain height levels: 10
HYMAP flow direction x map:     ./LS_PARAMETERS/HYMAP_10KM_GLOBAL/nextx.bin
HYMAP flow direction y map:     ./LS_PARAMETERS/HYMAP_10KM_GLOBAL/nexty.bin
HYMAP grid elevation map:       ./LS_PARAMETERS/HYMAP_10KM_GLOBAL/elevtn.bin
HYMAP grid distance map:        ./LS_PARAMETERS/HYMAP_10KM_GLOBAL/nxtdst.bin
HYMAP grid area map:           ./LS_PARAMETERS/HYMAP_10KM_GLOBAL/grarea.bin
HYMAP runoff time delay map:    ./LS_PARAMETERS/HYMAP_10KM_GLOBAL/kirpich.bin
HYMAP runoff time delay multiplier map: ./LS_PARAMETERS/HYMAP_10KM_GLOBAL/trunoff.bin
HYMAP baseflow time delay map:  ./LS_PARAMETERS/HYMAP_10KM_GLOBAL/tbasflw_45_amazon.bin
HYMAP reference discharge map:  ./LS_PARAMETERS/HYMAP_10KM_GLOBAL/qrefer.bin
HYMAP basin mask map:          ./LS_PARAMETERS/HYMAP_10KM_GLOBAL/mask_all.bin
HYMAP drainage area map:       ./LS_PARAMETERS/HYMAP_10KM_GLOBAL/uparea.bin
HYMAP basin map:               ./LS_PARAMETERS/HYMAP_10KM_GLOBAL/basin.bin
#HYMAP river flow type:        ./LS_PARAMETERS/HYMAP_10KM_GLOBAL/mask_all.bin
HYMAP river flow type map:     ./LS_PARAMETERS/HYMAP_10KM_GLOBAL/trunoff.bin
HYMAP baseflow dwi ratio map:  ./LS_PARAMETERS/HYMAP_10KM_GLOBAL/trunoff.bin
HYMAP runoff dwi ratio map:    ./LS_PARAMETERS/HYMAP_10KM_GLOBAL/trunoff.bin

# It is important the coordinates are the same as those that Augusto used to create HyMAP parameters
HYMAP params spatial transform: none
HYMAP params map projection:    latlon
HYMAP params lower left lat:   -17.95 #-19.95 #-59.9500
HYMAP params lower left lon:   -81.95 #-82.05 #179.9500
HYMAP params upper right lat:  0.95  #2.05  #89.9500
HYMAP params upper right lon: -67.05 #-66.95 #179.9500
HYMAP params resolution (dx):  0.10
HYMAP params resolution (dy):  0.10
```

# lis.config: HyMAP Settings

## #Overall driver options

```
Running mode: "retrospective"
Map projection of the LIS domain: "latlon"
Number of nests: 1
Number of surface model types: 1
Surface model types: "LSM"
Surface model output interval: "1da" #"1mo"
Land surface model: "NoahMP.3.6"
Routing model: "HYMAP router" # "HYMAP router" | "none"
Number of met forcing sources: 2
Number of ensembles per tile: 1
```

## #----- ROUTING -----

### # SEE ROUTING MODEL SELECTION AT TOP

```
# Routing model: "HYMAP router" # "HYMAP router" | "none"
HYMAP routing model time step: 30mn
HYMAP routing model output interval: 1da #1mo
HYMAP run in ensemble mode: 0
HYMAP routing method: "kinematic"
HYMAP routing model linear reservoir flag: 1
HYMAP routing model evaporation option: 1
HYMAP routing model start mode: "coldstart" #"coldstart" | "restart"
HYMAP routing model restart interval: 1da # 1 mo | 1hr | 1da
HYMAP routing model restart file: none # none | ./hymap.rst #./LIS_RST_HYMAP_router_201512310000.d01.bin
HYMAP routing LIS output directory: ROUTING
```



LDT runs successfully with HyMAP, but LIS returns the following errors (1/3):

Last lines of lislog.0000:

```
[INFO] Using GDAS forcing
[INFO] GDAS forcing directory : ./MET_FORCING/GDAS
MSG: The GDAS forcing resolution is coarser than the running domain.
      Interpolating with the bilinear method.
[INFO]
[INFO] Using LDT-generated met forcing data
[INFO] Generated metforcing directory: ./MET_FORCING/CHIRPS10km_6hr_Global
[INFO] -- Obtain Forcing Dataset Parameters --
[INFO] -- Parameters from forcing file:
./MET_FORCING/CHIRPS10km_6hr_Global/FORCING/200105/LDT_HIST_200105200000.d01.nc
[INFO] LDT-Generated Forcing Timestep:      21600.00
[INFO] LDT-Generated Forcing Number of Cols, Rows:          3600      1000
[INFO] LDT-Generated Forcing Projection:  Latlon
[INFO] Allocating and Initializing Forcing Variables --
** LDT-generated variable being read in: Rainf_tavg
[INFO] Number of LDT-generated forcing fields:          1
[INFO]
[INFO] Reprojection option selected: bilinear (interpolation)
[INFO] Initializing HYMAP....
[INFO] Processing data before running HYMAP
[calc_1d_seq] number of cells          0
[INFO] Calculate maximum river storage
[INFO] Remove zeros from groundwater time delay
[INFO] Calculate river bed elevation
[INFO] Calculate river surface area
[INFO] Setting floodplain staging
```



LDT runs successfully with HyMAP, but LIS returns the following errors (2/3):

Last lines of lislog.0001 - 0003:

(same as one another, but stops before initializing HyMAP unlike for lislog.0000 on previous slide)

```
[INFO] Using GDAS forcing
[INFO] GDAS forcing directory : ./MET_FORCING/GDAS
MSG: The GDAS forcing resolution is coarser than the running domain.
      Interpolating with the bilinear method.
[INFO]
[INFO] Using LDT-generated met forcing data
[INFO] Generated metforcing directory: ./MET_FORCING/CHIRPS10km_6hr_Global
[INFO] -- Obtain Forcing Dataset Parameters --
[INFO] -- Parameters from forcing file:
./MET_FORCING/CHIRPS10km_6hr_Global/FORCING/200105/LDT_HIST_200105200000.d01.nc
[INFO] LDT-Generated Forcing Timestep:      21600.00
[INFO] LDT-Generated Forcing Number of Cols, Rows:          3600          1000
[INFO] LDT-Generated Forcing Projection:  Latlon
[INFO] Allocating and Initializing Forcing Variables --
** LDT-generated variable being read in: Rainf_tavg
[INFO] Number of LDT-generated forcing fields:          1
[INFO]
[INFO] Reprojection option selected: bilinear (interpolation)
```

LDT runs successfully with HyMAP, but LIS returns the following errors (3/3):

From terminal window:

```
=
= BAD TERMINATION OF ONE OF YOUR APPLICATION PROCESSES
= RANK 0 PID 50362 RUNNING AT univ-server
= KILLED BY SIGNAL: 9 (Killed)
=
=
=
= BAD TERMINATION OF ONE OF YOUR APPLICATION PROCESSES
= RANK 1 PID 50363 RUNNING AT univ-server
= KILLED BY SIGNAL: 9 (Killed)
=
=
=
= BAD TERMINATION OF ONE OF YOUR APPLICATION PROCESSES
= RANK 2 PID 50364 RUNNING AT univ-server
= KILLED BY SIGNAL: 9 (Killed)
=
=
=
= BAD TERMINATION OF ONE OF YOUR APPLICATION PROCESSES
= RANK 3 PID 50365 RUNNING AT univ-server
= KILLED BY SIGNAL: 9 (Killed)
=
=
```

Bad termination for all 4 processors  
(Rank 0 PID - Rank 3 PID)