

# 3D Printer Procedures

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## Power-on/recover-from-standby

- Use KVM to switch to the printer computer:
  - If printer is “fully powered-down”, turn on (switch in back), then do following
  - To go from standby to online, start Alaris30 application and then make sure the 3D printer is online (big dot should be “green”)
- Use KVM to switch to the host computer (stew1):
  - Log in to host machine using CS account

## Printing

- **If needed, clean printer (see below)**
- Make sure the printer door is closed (magnetic lock)
- Use KVM to switch to the host machine (stew1):
  - Use the software ObjectStudio to load the model in STL format
  - Place model onto printing bed with appropriate scale, translation, and rotation in the software
  - Optionally use the auto placement to automatically place multiple objects
  - Save the tray file
  - Make sure the remaining material is more than what is needed (need to switch to printer-computer view and compare to job requirement on host machine); when putting in material, make sure to put them in the same way to prevent leaking
  - Press build tray to send the model to the printer
  - Build time varies from 0 to 10 hours in practice.
- The printer will warm up before printing
- During printing, one can pause, stop and resume
  - After stop, the last layer number is shown when you resume
  - After pause, the last layer number is required for resume the operation
  - You can look at the printer interface for the last layer number

## After-printing

- Remove the object using spatula
- Wash object:
  - Open water valve near wall and behind wash station, place object inside station, press foot pedal and power-wash until supporting material removed. When all done, close water valve again.
- **Important: Perform the clean printer procedure (see below)**

## Cleaning the Printer

- **After each use:**
  - Clean the printing bed with alcohol and lint-free cloth
  - Run wizard for printer head and roller cleaning
    - When cleaning, wash from middle to outside
- **Weekly cleaning:** (after several prints, e.g., after paper submission)
  - Clean the bath on the left for the printer head (run the wizard)
- **Monthly cleaning:** (e.g., after several projects/papers)
  - Clean the bath on the right for the roller – see Prof. Aliaga for this more involved process

## Power-down/goto-standby

- To go to standby:
  - Switch to printer computer and “X” close the Alaris30 application; printer fans should stop and noise-level is significantly reduced
- To power down:
  - Switch to printer computer and use the shut down wizard to shut down the printer appropriately.