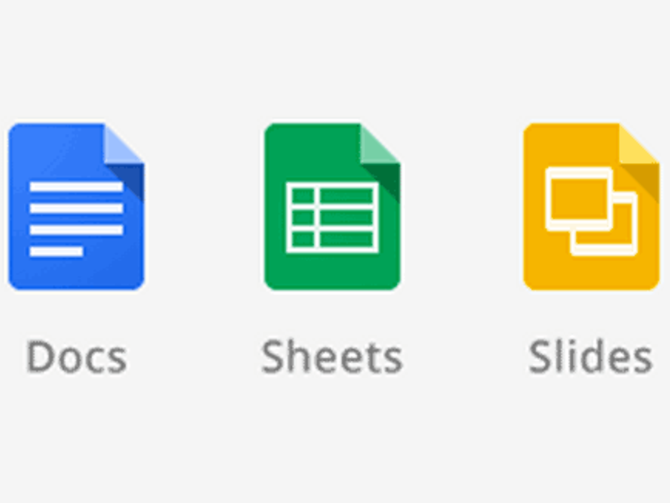
An Najah HTC Class Agenda

This document contains the class agenda for each class. It serves as both a record of the classes and also a guide to what we cover in each class. It is a living document in that it will evolve as the class evolves. This is different than a syllabus in that this is not an outline for the series of classes, but rather a guide as to what we will be doing in each class. Please use this guide during the class to see what other documents are relevant to the class and what we will be working on in the class. This will change to address the pace that we progress together.

Each class has a few sub categories:

* Class Slides - These are the Google Slides presented at the beginning of class
* Support documents for the in-class work - Additional documents that you should check. This documents introduce new ideas, clarify concepts cover in Class Slides or clarify the material in the In-class Documentation,
* In-Class Documentation - The Google Doc documentation that we use in the class.

Please note the different icons for Google Docs, Sheets and Slides:



Be sure to check the Extra Information directory occasionally.

[**Class 1 Agenda: An Introduction to HTC**](#_429s4dxg3us0) **3**

[**Class 2 Agenda: Installing and Configuring Your First Node**](#_b0dbq7kc9tba) **3**

[**Class 3 Agenda: Cobbler Installation Part 1**](#_abqacwukhzer) **3**

[**Class 4 Agenda: Cobbler Installation Part 2**](#_nvcib3yqou7v) **4**

[**Class 5 Agenda: Cobbler Installation Part 3**](#_1f1n78z6k9fw) **4**

[**Class 6 Agenda: Puppet Installation and Configuration 1**](#_9j8y8bw001il) **4**

[**Class 7 Agenda: Puppet Installation and Configuration 2**](#_3jgqnjopt0c9) **5**

[**Class 8 Agenda: Puppet Installation and Configuration 3**](#_51syqd54lrid) **5**

[**Class 9 - Agenda: User/Host ssh keys and more:**](#_laoorse3uivk) **6**

[**Class 10 - Agenda Running Jobs on Distributed Systems:**](#_97pfhbhopjw) **6**

[**Class 11 Agenda: Catching Up Part One**](#_dnv7wpn3fu2j) **6**

[**Class 12 Agenda: Catching Up Part Two**](#_rfdb2xbzems) **7**

[**Class 13 Agenda: Catching Up Part Three**](#_xhih0f3dhtbd) **7**

[**Class 14 Agenda: Individualization**](#_89ohjar2l8dg) **7**

[**Class 15 Agenda: A Taste of XSEDE**](#_ox3pwrrhcut4) **8**

[**Class 16 Agenda: Directed Acyclic Graph**](#_vv92l6hob2zu) **8**

[**Class 17 Agenda: Virtual Machines**](#_pd0moi64crxt) **8**

# Class 1 Agenda: An Introduction to HTC

February 27, 2018  
Objective: Introduce HTC and instructors history with computing.

* Class Slides  
  Class 1 - An Introduction to High Throughput Computing
* Overview of the class with a history about the instructor’s computing experience
* Class 1 slides include a short video made using ray tracing software

# Class 2 Agenda: Installing and Configuring Your First Node

March 1, 2018  
Objective: Perform a minimal CentOS7 using a USB memory stick

* Class Slides:   
  Class 2 - First Node Installation
* Support documents for the in-class work:
  + Class 2 - Hosts File
  + Class 2 - InstallPackages
  + Class 2 - InstallRepos
* In-class documentation:  
  Class 2 - Installing and Configuring Your First Node

# Class 3 Agenda: Cobbler Installation Part 1

March 6, 2018  
Objective:

* Class Slides:   
  Class 3 - Host provisioning and configuration Management Part 1  
  - Introduce find and grep  
  - Introduce motivation for automatic provisioning  
  - Over of provisioning
* Support documents for the in-class work:  
  Class 3 - Cobbler Cheat Sheet - My personal notes for Cobbler  
  Class 3 - Script for Cobber Installation - Potential script to do complete Cobbler installation  
  Class 3 - Script to Modify /etc/cobbler/settings - Support script for Cobbler Installation script
* In-class documentation:  
  Class 3 - Cobbler Installation Part 1

# Class 4 Agenda: Cobbler Installation Part 2

March 13, 2018  
Objective:

* Class Slides:   
  Class 4 - Host provisioning and configuration Management Part 2
* Support documents for the in-class work:  
  Class 4 - Add Cobbler Host - Script to add a host (system to Cobbler)  
  Class 4 - Cobbler Client Commands - Commands to be run on Cobbler Client to reinstall operating system. Directions for creating are provided.
* In-class documentation:  
  Class 4 - Cobbler Installation Part 2

# Class 5 Agenda: Cobbler Installation Part 3

March 15, 2018  
Objective:

* Class Slides:   
  Class 5 - Final steps for host provisioning
* Support documents for the in-class work:  
  Class 5 - Understanding the kickstart file  
   Incomplete discussion of the kickstart file
* In-class documentation:  
  Class 4 - Cobbler Installation Part 2

# Class 6 Agenda: Puppet Installation and Configuration 1

March 20, 2018  
Objective: Beginning puppet installation

* Class Slides:   
  Class 6 - Puppet Installation, Configuration and Use  
  XSEDE Reminder  
  Introduce Puppet
* Support documents for the in-class work:  
  Class 6 - ssh key error  
   How to fix  
  Class 6 - Using Different Kickstart Files  
   Introduction to symbolic links
* In-class documentation:  
  Class 6 - Puppet Installation and Configuration

# Class 7 Agenda: Puppet Installation and Configuration 2

March 22, 2018  
Objective: Continue puppet installation

* Class Slides:  
  Class 7 - Puppet Installation, Configuration and Use 2  
  XSEDE Reminder  
  Review  
  Introduce NFS and autofs
* Support documents for the in-class work:  
  **Please do not work through this document until Class 8**  
  Class 7 - Introduction NFS and autofs
* In-class documentation:  
  Class 6 - Puppet Installation and Configuration

# Class 8 Agenda: Puppet Installation and Configuration 3

March 27, 2018  
Objective: Finish Puppet and Install NFS Client  
 In this class we will:   
 To finish the initial Puppet Installation  
 Install NFS and autofs on the Puppet Server  
 Write Puppet module to install NFS/autofs on Puppet Client

* Class Slides:   
  Class 8 - Completing Puppet Installation and Writing Your First Module
* Support documents for the in-class work:
* In-class documentation:  
  Class 6 - Puppet Installation and Configuration  
  Class 7 - Introduction NFS and autofs  
  Class 8 - Writing Your First Puppet Module

# Class 9 - Agenda: User/Host ssh keys and more:

Date: March 29, 2018  
Objective: Finish Puppet Installation   
 Recovering from a crashed system drive

* Class 9 Slides:   
  Class 9 - SSH keys and Re-Installation
* In-class documentation:
  + Class 9 - User/Host ssh keys and more
  + In class problem - Putting it all together

# Class 10 - Agenda Running Jobs on Distributed Systems:

Date: April 2, 2018  
Objective: Review ssh keys  
 Execute remote processes  
 Install the HTCondor Batch System   
 Submitting HTCondor Batch Jobs

* Class 10 Slides:
  + Class 10 - Introduction to Batch Processing
* Support documents for the in-class work:
  + Class 10 - A Solution to Class 9 Problem
* In-class documentation:
  + Class 10 - Running Jobs on Distributed Systems

# Class 11 Agenda: Catching Up Part One

Date April 5, 2018  
Objective: Having Everyone Finish the Last Two Classes  
 Configuration for Full Client Reboot Restore  
 Saving Host ssh keys and restoring  
 Saving Puppet Client certificates and Restoring  
 HTCondor Installation  
 Running First HTCondor Job

* Class 11 Slides: Catching Everyone Up
* In-class documentation:  
  No new documentation for this class  
  Please consult:
* Class 7 - Introduction NFS and autofs
* Class 8 - Writing Your First Puppet Module
* Class 9 - User/Host ssh keys and more
* In class problem - Putting it all together
* Class 10 - Running Jobs on Distributed Systems

# Class 12 Agenda: Catching Up Part Two

Date: April 19, 2018  
Objective: This is a continuation of Class 11  
 Monte Carlo Calculation of Ⲡ

* Class 12 Slides: Catching up Part Two
* In-class documentation:   
  Class 12 - Monte Carlo Calculation of Ⲡ

# Class 13 Agenda: Catching Up Part Three

Date: April 19, 2018  
Objective: This should be the final class for everyone to catch up  
 Monte Carlo Calculation of Ⲡ

* Class 12 Slides: Catching up Part Three
* In-class documentation:   
  Any documentation up to Class 12.

# Class 14 Agenda: Individualization

Date: April 17, 2018  
Objective: Add a GUI to the Puppet Client  
 Create individual accounts on all machines  
 One combined cluster  
 Compile and submit program to HTCondor

Submit 500 copies of program to HTCondor

* Class 14 Slides:   
  Class 14 - Transitioning to One Cluster
* In-class documentation:   
  Class 14 - Puppet Configuration for GUI  
  Class 14 - Combining Resources to Make One Cluster

# Class 15 Agenda: A Taste of XSEDE

Date: April 19, 2018  
Objective: Finish the previous HTCondor Tutorial  
 Run your first jobs on XSEDE

* Class 15 Slides:   
  Class 15 -
* In-class documentation:   
  Class 15 - A Taste of XSEDE

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# Class 16 Agenda: Directed Acyclic Graph

Date: April 26, 2018  
Objective: Finish the previous HTCondor Tutorial  
 Directed Acyclic Graphs  
 Doing more on your own

* Class 16 Slides:   
   Class 16 - Directed Acyclic Graph
* Support documents for the in-class work:  
  [DAGMan Applications](http://research.cs.wisc.edu/htcondor/manual/v8.7/2_10DAGMan_Applications.html)[HOWTOs Condor Submit File](http://www.iac.es/sieinvens/siepedia/pmwiki.php?n=HOWTOs.CondorSubmitFile)
* In-class documentation:   
  Class 16 - HTCondor Directed Acyclic Graph Manager

# Class 17 Agenda: Virtual Machines

Date: May 3, 2018  
Objective: Create and run KVM Virtual Machine  
 Finish the previous HTCondor Tutorial  
 Directed Acyclic Graphs  
 Doing more on your own

* Class 17 Slides:   
   Class 17 - Virtual Machines
* Support documents for the in-class work:  
  [DAGMan Applications](http://research.cs.wisc.edu/htcondor/manual/v8.7/2_10DAGMan_Applications.html)[HOWTOs Condor Submit File](http://www.iac.es/sieinvens/siepedia/pmwiki.php?n=HOWTOs.CondorSubmitFile)
* In-class documentation:   
  Class 17 - KVM: Virtual Machines

# Class 18 Agenda: The Assignment

Date: May 8, 2018  
Objective: Assignments for Final Implementation  
 Create and run KVM Virtual Machine  
 Finish the previous HTCondor Tutorial  
 Directed Acyclic Graphs  
 Doing more on your own

* Class 17 Slides:   
   Class 17 - Virtual Machines
* Support documents for the in-class work:  
  [DAGMan Applications](http://research.cs.wisc.edu/htcondor/manual/v8.7/2_10DAGMan_Applications.html)[HOWTOs Condor Submit File](http://www.iac.es/sieinvens/siepedia/pmwiki.php?n=HOWTOs.CondorSubmitFile)
* In-class documentation:   
  Class 17 - KVM: Virtual Machines

# Class 19 Agenda: PERT Chart

Date: May 10, 2018  
Objective: Assignments for Final Implementation  
 Create and run KVM Virtual Machine  
 Finish the previous HTCondor Tutorial  
 Doing more on your own

* Class 19 Slides:   
   Class 17 - PERT Chart
* Support documents for the in-class work:  
  [DAGMan Applications](http://research.cs.wisc.edu/htcondor/manual/v8.7/2_10DAGMan_Applications.html)[HOWTOs Condor Submit File](http://www.iac.es/sieinvens/siepedia/pmwiki.php?n=HOWTOs.CondorSubmitFile)
* In-class documentation:   
  Class 19 - 3Ware RAID Configuration  
  Class 19 - Cluster Account Creation and Management  
  Class 19 - KVM Configuration  
  Class 19 - Proxy Server  
  Class 19 - Web Server Installation  
  Class 20 - Logical Volume Manager

# Class 20 Agenda: Transitioning Updates

Date: May 17, 2018  
Objective: Transition Status Updates

* Class 17 Slides:   
   Class 17 - Transition Updates
* In-class documentation:  
  Class 20 - Logical Volume Manager  
  Class 20 - Linux Router

# Class 21 Agenda: Petra

Date: May 26, 2018  
Objective: Transition Status Updates  
 Presentation by the RAID Storage Group

* Class 21 Slides:   
   Class 21 - Petra
* In-class documentation:  
  Class 21 - Using VirtClone  
  Class 20 - Linux Router  
  Class 21 - Automounting Home Directories

# Class 22 Agenda:

Date: May 29, 2018  
Objective: Transition Status Updates

* Class 22 Slides:   
   Class 22 -
* In-class documentation:  
  Class 22 - Using GIT