**IHC Course updates at-a-glance**

**Now a 3 day Course!!!**

**General Slide Enhancements:**

1. Lots of new Info. Overview module talks about everything you see in Cloud Central page.
2. Slide content has been tightened up. Lots of value-add slides (like animated power points for labs)
3. Lots of good technical content. All marketing content is gone. NPS networking details are gone. AltaVault is gone.
4. Lots of valuable Instructor notes.

**General Lab Enhancements:**

1. Instructor no longer needs to run Cleanup Scripts at the end of the class.
2. ONTAP version 9.5 in on-prem, 9.4 for CVO at this point, but expecting to have 9.5 when the class is released officially.
3. New way to login to AWS and Azure.
   1. Students set up their own password for AWS and Azure
4. LOD instance assigned to each student will have 2 labs.
   1. For labs in Mod 0 – Mod 8, the students will have to provision this lab (click on take this lab) and then connect to it.
   2. For Mod 9 (CVS), they get pre-provisioned LOD lab and they can connect to it.

**Instructor lab troubleshooting tips:**

1. **If students forget their password**
   * 1. **click on the AWSaccount Unlocker/Azureaccount UnLocker shortcut on desktop to reset it.**
   1. **If the unlocker freezes, how can we instruct students to get the credentials?**
      1. **opening a PowerShell window and typing “ls Env:” returns the environmental variables that includes the cloud credentials**
   2. **How can the instructor get a list of cloud account assignments to the student sessions?**
      1. **open a ticket the first day of class at** [**https://lod-support.netapp.com**](https://lod-support.netapp.com) **to request the user and lab mapping list.**

**Module 0: Welcome**

* Usual content. Remember it will be a packed 3 days. And adjust the agenda as you see fit.
* **Set the expectations here in this module: Prework should have been completed by students. A slide showing the pre-work requirement is added in this module.**

**Module 0 Lab:**

* **Set the expectations here: The AWS and Azure UI might change frequently but we will not be able to update the lab guides dynamically to reflect those changes. Learners will be intuitively able to follow the changes to the UI to perform tasks that the lab guide specifies.**
* Usual checking the environment but shorter.

**Module 1 DF\_Overview:**

* This is a long module. The idea is to give a quick overview. Don’t deep dive into the topics. Also try to hold off questions from students about some of the items in this overview module that we may be covering in detail in a module of its own (eg. Cloud Volumes Service)
* Ex 2 slide (new exercise to use the Cloud Assessment Tool) in this module is just before the slides that talk about the Focus of this course and the Module Review. You may choose to finish up those slides before letting the students work on Ex2.

**Module 1 Lab:**

1. EG01\_EX1\_AWS\_Azure\_PowerShell – nothing new, removed the CLI part.
2. EG01\_EX2\_Assessments: NEW

The assessment example .csv files provided in the CourseFiles folder can be viewed using an online viewer from the jumphost. for eg. <http://convertcsv.com/csv-viewer-editor.htm>

(Using Notepad++ or wordpad is not user friendly)

**Module 2 AWS\_VPC\_Connectivity:**

* Some new additions: CloudFormation, AWS Networking entity used for connectivity by NPS and CVS. There are animated slides in the deck that you can use to narrate what the students do in the lab exercises. YOUR CHOICE: use it before they do the lab or after they finish the lab as a review.

**Module 2 Lab:**

1. EG2\_EX1\_Configure\_AWS\_VPC\_Resources: This uses CloudFormation to set up the basic VPC resources needed. Students will create and run a stack and then examine the resources created. New way of doing this exercise
2. EG2\_EX2\_OnPrem\_To\_Cloud\_Connectivity - establish the VPN connection: Here they do everything by hand starting from the VGW creation.

**Module 3 Cloud\_Volumes\_ONTAP:**

* Content for OCCM and CVO, a diagram showing deployment of OCCM and CVO in private subnets. AGAIN YOUR CHOICE: use before or after the completion of the lab.

**Module 3 Lab:**

1. EG03Ex1\_CloudManager\_CVO: Deploy OCCM and CVO. Remember CVO takes 25 minutes to deploy.
2. There is a new task that sets the shutdown schedule. New

**Module 4 Implementing\_Disaster\_Recovery:**

* Implementing Disaster Recovery using CVO : Drag and drop feature for setting up SnapMirror Relationship. Nice diagram with animation that shows what the students will do in the lab.

**Module 4 Lab:**

1. EG04\_EX1\_Implement DR CVO – nothing new here.

**Module 5 Azure\_VNet\_Connectivity:**

* Azure VNET Connectivity: A new slide talking about LRS/ZRS since those are shown when we talk about CVO. Nothing else is new here.
* You can choose to do this module on day 3 prior to the CVS module, if you are running out of time.
* Link to the online VClassroom course for Azure is provided in the slide.

**Module 5 Lab:**

1. EG05\_Ex1\_Azure\_VNet\_and\_connectivity : All the powershell commands to run are from a txt file that can be opened by Notepad++. 1 script where the students will do a search and replace of their specific Resource Group name that will be the same as their login name.

YAY!!! No more csv file 😊

**Module 6: Data Tiering**

* Brand new module. It has been made possible because we are using newer version of ONTAP.

**Module 6 Lab:**

1. EG06\_EX1\_Tier\_Data\_S3 : New exercise that sets up tiering using a backup policy so that data will be tiered from a destination DP volume to S3. Shows comparison of EBS space consumed before and after tiering. New Exercise.

Students will delete the working environment in OCCM to get a clean plate for deploying CVO HA in the next lab. New Task.

**Module 7 Cloud\_Volumes\_ONTAP\_HA:**

* New module with info on HA architecture in AWS and Azure

**Module 7 Lab:**

* Deploy CVO in multiple AZs providing Floating IP, failover/failback and data access New Exercise.

**~~Module 8: Data\_Availability\_Services: New Module~~**

* ~~Lecture ONLY about the NDAS.~~
* ~~Check Instructor Notes for comparison to Cloud Backup Service.~~

**~~Module 8 Lab:~~**

* ~~None because it is not available at the time of writing the course.~~

**Module 8 Cloud\_Sync:**

* Info similar to what we had before

**Module 9 Lab:**

* Simplified. Students will simply do a sync from the on-premises CIFS server to an S3 bucket.

**Module 9: Cloud\_Volumes\_Service**

* New module. CVS in AWS, GCP and ANF
* Demo video embedded in PPT that shows AWS setup for CVS.

**Module 9 Lab:**

* Using the LOD lab for CVS exercises since we don’t have CVS available for our environment yet.
* This is a pre-provisioned lab.
* Students should not do the CVS lab if they have not completed the lab exercises of everything else before that. They will have to end the IHC lab if they want to do the CVS lab (since they can only take 1 lab at a time) and ending the IHC lab means they cannot go back to it.