

CA Identity Suite 14.x: CA Identity Manager - Manage Endpoints 200

Lab Guide

04IMG2044S

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For the *Learn More Edition* Subscriber:

In addition to this fully functional training platform (*Dynamic Lab Environment*), your subscription includes a web-based training component with recorded demonstrations of these lab activities. Although not required, we recommend you review the WBT component first, as it describes various use cases for the features and context for the lab activities.

Lab 2-1 Acquire the Voonair AD Endpoint

Goal Acquire the Voonair Active Directory endpoint.

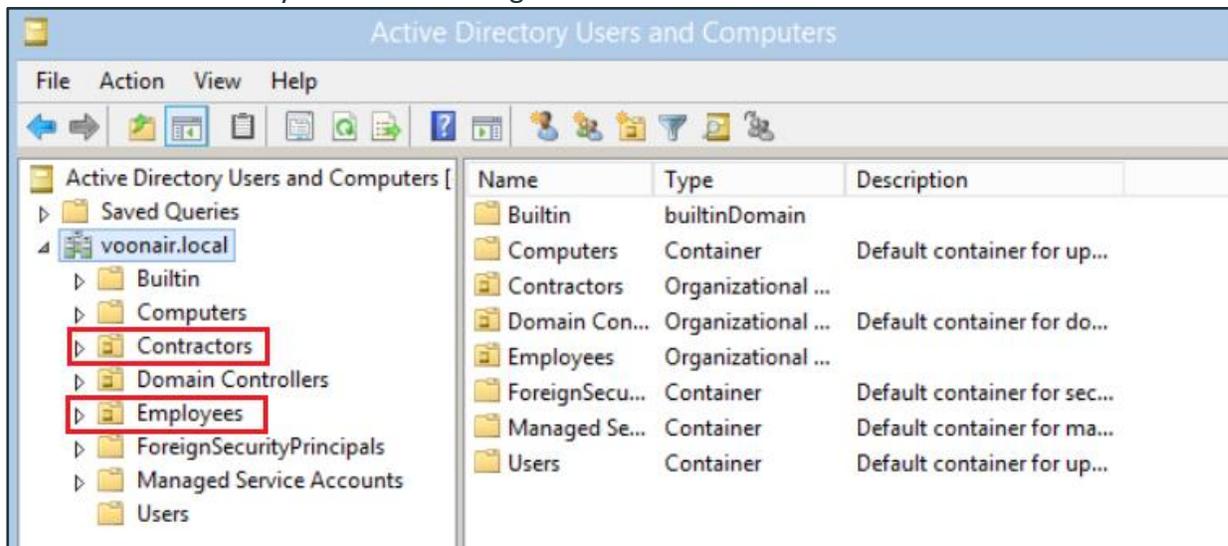
Scenario With your CA Identity Manager environment provided out of the box, you can now start acquiring endpoints. At Voonair Airlines, the primary endpoint is an Active Directory endpoint that holds the user identities across various containers. To import these users into CA Identity Manager, you need to acquire the endpoint first.

Time 20 minutes

Instructions:

Verify the Active Directory Endpoint Environment is Up and Running

1. Launch the **04IMG20299-DirectoryServer** virtual machine (VM).
2. On the desktop, double-click the **Active Directory Users and Computers** shortcut.
3. In the Active Directory Users and Computers window, under voonair.local, verify that the **Contractors** and **Employees** containers exist. These are the Active Directory user stores for Voonair Airlines that you will use throughout this class.



4. Expand the **Contractors** container and verify that it has the following subcontainers:

Name	Type	Description
Business Operations	Organizational ...	
Customer Service	Organizational ...	
Flight Operations	Organizational ...	
Information Technology	Organizational ...	
Maintenance and Support	Organizational ...	

5. Expand the **Employees** container and verify that it has the following subcontainers:

Name	Type	Description
Business Operations	Organizational ...	
Customer Service	Organizational ...	
Executive	Organizational ...	
Flight Operations	Organizational ...	
Information Technology	Organizational ...	
Maintenance and Support	Organizational ...	

Notice the additional Executive subcontainer in the Employees container.

6. In the Contractors and Employees containers, click each subcontainer to view the Active Directory users in Voonair Airlines that you will be managing throughout this class.

Note: In the Contractors container, some subcontainers might be empty, this is fine.

Name	Type	Description
Jiro Horando	User	
Johan Barnett	User	
Keiko Mori	User	
Leslie Slight	User	
Sabine Aubin	User	
Sanna Richardson	User	
Sue Sponsor	User	

In this class, you will acquire all these users and explore/correlate them into the out-of-the-box CA Identity Manager environment. Now that you have verified that all the containers, subcontainers, and users exist in Active Directory, you can start the process of acquiring the Voonair Active Directory endpoint.

Log in to the CA Identity Suite Virtual Appliance

Next, you will log in to the Virtual Appliance dashboard so you can access the CA Identity Manager web interfaces.

7. Using the shortcut on the desktop, open the Google Chrome browser.
8. In the Address bar, type the following and press Enter:

192.168.1.20

An SSL certificate error appears. It is safe to ignore because it is a self-signed certificate generated on the fly after an IP address is selected (and therefore not signed by a known authority).

9. To ignore the SSL certificate error, click **Advanced** and then click **Proceed to 192.168.1.20**.
10. Log in to the CA Identity Suite Virtual Appliance using the following credentials:

Username	config
Password	caeducation

The Virtual Appliance dashboard appears, which shows all the deployed components of CA Identity Suite, including CA Identity Manager. Notice the links that enable you to access the User Console and Management Console for CA Identity Manager.

Add the Department Attribute to Attribute Mappings

Before you acquire the endpoint, you need to add the department attribute to the Attribute Mappings on the Provisioning Server. You do this to make sure the department attribute is imported from Active Directory when you perform the Explore and Correlate operation after the endpoint is acquired. You'll do an Explore and Correlate in the next lab exercise.

11. On the Virtual Appliance dashboard, click the **Management Console** link for CA Identity Manager.
12. Log in to the Management Console using the following credentials:

Username	admin
Password	CAIMAG1

13. In the Management Console, click the **Environments** link.

14. On the Environments page, in the Name column, click the link for the **identityEnv** environment. The properties for the **identityEnv** environment appear.
15. In the Provisioning Server row, to the right of the Provisioning link, click the green arrow. The Provisioning page appears.
16. Scroll down to the **Attribute Mappings** section.
17. To add the department to the Attribute Mappings:
 - a. In the User Attribute drop-down box, select **departmentNumber**.
 - b. In the Provisioning Attribute drop-down box, select **eTDepartment**.
 - c. Click **Add**.

You do this because you want to pull the department attribute from Active Directory into our global user that will be stored in the corporate user store (CA Identity Manager directory).
18. Scroll down to the bottom of the page and click **Save**. You will be prompted to restart the environment.
19. Click **Restart Environment**.

Acquire the Voonair Active Directory Endpoint

Now go ahead and use the Create Endpoint task to acquire the endpoint.

20. On the Virtual Appliance dashboard, click the User Console link for CA Identity Manager.
21. Log in to the User Console using the following credentials:

Username	imadmin
Password	test

22. In the Tasks menu, expand **Endpoints**.
23. Expand **Manage Endpoints** and click **Create Endpoint**.
24. In the Create a new endpoint of Endpoint Type list, select **Active Directory**.
25. Click **OK**.

26. On the Endpoint tab, provide the following information:

Endpoint	Voonair_AD
Description	<Add an optional description>
Host Name	directoryserver.voonair.local
User ID	Administrator
Password	caeducation

27. Click the **Security** tab and make sure **Use LDAP – SSL Encryption (Recommended)** is selected.

Note: If you do not enable this option, then resetting passwords and some of the other security-related features will not work.

Note: The SSL Certificate has already been imported into this lab environment. In a real deployment, you would need to export the SSL Certificate from your domain controller host and import it into the connector server host. For more information, see the CA Identity Manager Wiki.

28. Click the **Endpoint Settings** tab.

By default, the **Account Options on Delete** setting is configured so that **Accounts will be deleted from both the provisioning directory and the managed endpoint**. For this class, you want to change this option so the account is left unchanged on the managed endpoint. This is to make sure you do not accidentally delete users from Active Directory.

29. Change the **Account Options on Delete** setting to **Accounts will be deleted from the provisioning directory, but left unchanged on the managed endpoint**.

30. Click **Submit**.

You will receive a confirmation that the task for creating the endpoint has been submitted.

You have successfully acquired the Voonair Active Directory endpoint.

Lab 2-2 Explore and Correlate the Voonair AD Endpoint

Goal	Explore and Correlate the Voonair Active Directory endpoint.
Scenario	Now that you have acquired the Voonair AD endpoint, you can define an Explore and Correlate operation and execute it against the endpoint. The operation will discover objects in the acquired endpoint and store instances of them in the provisioning directory. It will then try to associate every account discovered in the endpoint to an existing global user in the CA Identity Manager directory (corporate user store). If the user does not yet exist in the directory, it will be created.
Time	30 minutes

Instructions:

Create an Explore and Correlate Definition

To perform an Explore and Correlate, first you need to create an Explore and Correlate definition, which you can do through the User Console.

1. In the CA Identity Manager User Console, expand **Endpoints**.
2. Expand **Explore And Correlate Definitions**.
3. Click **Create Explore And Correlate Definition**.
4. Make sure the **Create a new object of type Explore and Correlate** option is selected.
5. Click **OK**.
The Create Explore And Correlate Definition page appears.
6. In the Explore and Correlate Name field, type the following:
E&C Voonair AD
7. Click **Select Container/ Endpoint/Explore Method**.
8. Under Search for endpoints, select **Active Directory** from the drop-down list and then click **Search**.
9. Under Search Results, select the **Voonair AD** endpoint you created earlier and then click **Select**.
10. Under Search for a container, click **Search**.

Under Search Results, CA Identity Manager returns a list of containers that came from the Voonair Active Directory endpoint that you acquired earlier. Do not select all containers, this will only create problems. You only want to select the containers that hold the users you need to manage.

11. Select the following containers and click **Select**:

Search Results		
<input type="checkbox"/> Select	▲ Name	▼ Parent Container
<input type="checkbox"/>	Builtin	<Endpoint>
<input checked="" type="checkbox"/>	Business Operations	Contractors, <Endpoint>
<input checked="" type="checkbox"/>	Business Operations	Employees, <Endpoint>
<input type="checkbox"/>	Computers	<Endpoint>
<input type="checkbox"/>	Contractors	<Endpoint>
<input checked="" type="checkbox"/>	Customer Service	Contractors, <Endpoint>
<input checked="" type="checkbox"/>	Customer Service	Employees, <Endpoint>
<input type="checkbox"/>	Domain Controllers	<Endpoint>
<input type="checkbox"/>	Employees	<Endpoint>
<input checked="" type="checkbox"/>	Executive	Employees, <Endpoint>
<input checked="" type="checkbox"/>	Flight Operations	Contractors, <Endpoint>
<input checked="" type="checkbox"/>	Flight Operations	Employees, <Endpoint>
<input type="checkbox"/>	ForeignSecurityPrincipals	<Endpoint>
<input checked="" type="checkbox"/>	Information Technology	Contractors, <Endpoint>
<input checked="" type="checkbox"/>	Information Technology	Employees, <Endpoint>
<input checked="" type="checkbox"/>	Maintenance and Support	Contractors, <Endpoint>
<input checked="" type="checkbox"/>	Maintenance and Support	Employees, <Endpoint>
<input type="checkbox"/>	Managed Service Accounts	<Endpoint>
<input type="checkbox"/>	Microsoft	Program Data, <Endpoint>

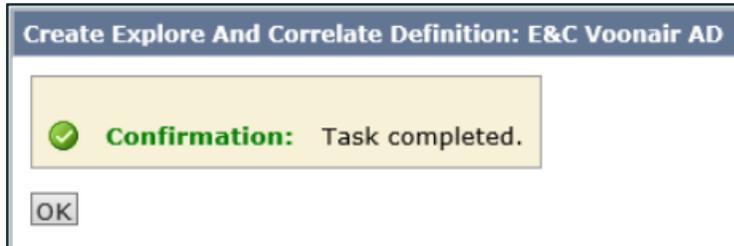
12. Select the checkboxes as shown below:

Explore/Correlate Action	<input checked="" type="checkbox"/> Explore endpoint for managed objects <input checked="" type="checkbox"/> Update user fields <input checked="" type="checkbox"/> Correlate accounts to users <input type="radio"/> Use existing user <input checked="" type="radio"/> Create users as needed
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You select the **Create users as needed** option because you only have a few users in your corporate user store at this point, from the directory import that you performed earlier. The Explore and Correlate process, as configured here, will populate the corporate user store with all the Active Directory users from the Voonair endpoint.

13. Click **Submit**.

You will receive a confirmation that the task for creating the Explore and Correlate definition has been submitted.



Execute the Explore and Correlate

You have completed the configuration, so go ahead and execute the Explore and Correlate operation immediately.

14. In the Tasks menu, under Endpoints, click **Execute Explore And Correlate**.

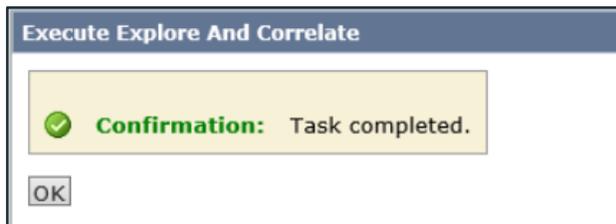
15. Select **Execute now** and then **Next**.

16. Click **Browse** and then click **Search**.

17. Under Search Results, select **E&C Voonair AD** and click **Select**.

18. Verify that the correct Explore and Correlate definition was selected and click **Finish**.

You will receive a confirmation that the task for executing the Explore and Correlate has been submitted.



19. To view the status of the Explore and Correlate import process, expand **System** and click **View Submitted Tasks**.

20. Click **Search**.

21. Examine the status of the Explore and Correlate import process and click **Refresh** to get an updated status if needed.

View Submitted Tasks				
Description	Status	Priority	Initiated by	Submitted
Provisioning Modify User task, User ktoma	Completed	Medium	imadmin	6/15/2017 7:18 AM
Provisioning Modify User task, User mabadi	Completed	Medium	imadmin	6/15/2017 7:18 AM
Provisioning Modify User task, User jsauer	Completed	Medium	imadmin	6/15/2017 7:18 AM
Create Global User from Account: Karima Toma task, Provisioning Non Managed Object Karima Toma	Completed	Medium	imadmin	6/15/2017 7:18 AM
Create Global User from Account: Mahir Abadi task, Provisioning Non Managed Object Mahir Abadi	Completed	Medium	imadmin	6/15/2017 7:18 AM
Provisioning Create User task, User mabadi	Completed	Medium	imadmin	6/15/2017 7:18 AM
Create Global User from Account: Jason Sauer task, Provisioning Non Managed Object Jason Sauer	Completed	Medium	imadmin	6/15/2017 7:18 AM
Provisioning Create User task, User jsauer	Completed	Medium	imadmin	6/15/2017 7:18 AM
Provisioning Create User task, User ktoma	Completed	Medium	imadmin	6/15/2017 7:18 AM

Verify the User Import into the Corporate User Store

With the execution now completed, you can verify the import was successful by viewing the users in the corporate user store.

22. In the Tasks menu, expand **Users**.
23. Expand **Manage Users** and click **Modify User**.
24. Under Search for a user, click **Search**.

Under Search Results, you can see all the users in your corporate user store that were pulled in from Active Directory endpoint by the Explore and Correlate process.

Search Results					
Select	Login Id	User ID	Last Name	First Name	Organization Name
<input checked="" type="radio"/>	mabadi	mabadi	Abadi	Mahir	im
<input type="radio"/>	dabraham	dabraham	Abraham	Dave	im
<input type="radio"/>	badams	badams	Adams	Bruce	im
<input type="radio"/>	imadmin	imadmin	admin	im	im
<input type="radio"/>	comes	comes	Ames	Colter	im
<input type="radio"/>	jarnold	jarnold	Arnold	June	im
<input type="radio"/>	saubin	saubin	Aubin	Sabine	im
<input type="radio"/>	jbarnett	jbarnett	Barnett	Johan	im
<input type="radio"/>	cboyd	cboyd	Boyd	Charlie	im
<input type="radio"/>	bchin	bchin	Chin	Bai	im
<input type="radio"/>	pdas	pdas	Das	Pradeep	im
<input type="radio"/>	ddavies	ddavies	Davies	Dylan	im
<input type="radio"/>	cdimitri	cdimitri	Dimitri	Cathy	im

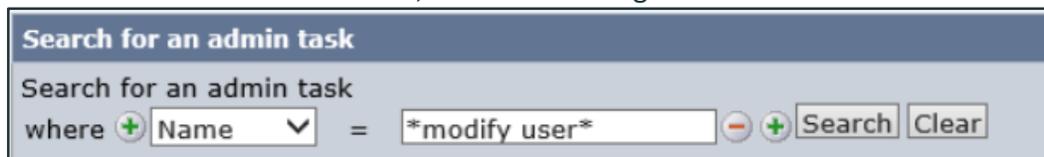
Add Department to the Default User Search

By default, the user search results only show the organization that a user belongs to. You want to be able to see the department too and search for users by department.

25. In the Tasks menu, expand **Roles and Tasks**.

26. Expand **Admin Tasks** and click **Modify Admin Task**.

27. Under Search for an Admin task, set the following search criteria and click **Search**.



Search for an admin task

Search for an admin task

where =

28. Under Search Results, select **Modify User** and click **Select**.

29. Click the **Search** tab.

30. Click **Browse**.

31. Under Select Screen Definition, select **Default User Search** and click **Edit**.

32. Under Configure Standard Search Screen, scroll down to the section called **Select the fields the user can search on**.

33. In the drop-down list, select **Department**.

The screen refreshes and Department is added to the list of fields that a user can search on. You will need to scroll down again to see this.

34. Scroll down to the section called **Select the fields that appear in the search results**.

35. In the drop-down list, select **Department**.

The screen refreshes and Department is added to the list of fields that appear in search results. You will need to scroll down again to see this.

36. To make the Department field sortable, select the check box for it in the Sortable column.

Select the fields that appear in the search results:

Field	Name	Style	Sortable	
User ID	User ID	String	<input checked="" type="checkbox"/>	[-] [↑] [↓]
Last Name	Last Name	String	<input checked="" type="checkbox"/>	[-] [↑] [↓]
First Name	First Name	String	<input type="checkbox"/>	[-] [↑] [↓]
User organization name	Organization Name	String	<input type="checkbox"/>	[-] [↑] [↓]
Department	Department	String	<input type="checkbox"/>	[-] [↑] [↓]

Again, the screen will refresh and you will need to scroll down to see the checkbox selected.

37. Scroll to the bottom of the page and click **OK**.

Now you can go back and run a user search to verify that Department appears in search criteria and results.

38. In the Tasks menu, expand **Users**.

39. Expand **Manage Users** and click **Modify User**.

If you get a message about losing your changes if you continue, click **Yes**.

40. Under Search for a user, notice that you can now select Department as a search parameter in the drop-down list.

Search for a user

Search for a user
in organization

where **Department** = *

41. Under Search for a user, click **Search**.

Under Search Results, you can see the new Department column that you added to the search results for the default user search and the different departments that the Voonair users belong to (Back Office, IT, Flight Operations, Customer Service, and so on). You will use these departments in later labs.

Search Results						
Select	Login Id	User ID	Last Name	First Name	Organization Name	Department
<input checked="" type="radio"/>	mabadi	mabadi	Abadi	Mahir	im	Back Office
<input type="radio"/>	dabraham	dabraham	Abraham	Dave	im	IT
<input type="radio"/>	badams	badams	Adams	Bruce	im	Executive
<input type="radio"/>	comes	comes	Ames	Colter	im	Flight Operations
<input type="radio"/>	jarnold	jarnold	Arnold	June	im	Flight Operations
<input type="radio"/>	saubin	saubin	Aubin	Sabine	im	Flight Operations
<input type="radio"/>	jbarnett	jbarnett	Barnett	Johan	im	Flight Operations
<input type="radio"/>	cboyd	cboyd	Boyd	Charlie	im	Maintenance
<input type="radio"/>	bchin	bchin	Chin	Bai	im	IT
<input type="radio"/>	pdas	pdas	Das	Pradeep	im	Customer Service
<input type="radio"/>	ddavies	ddavies	Davies	Dylan	im	IT
<input type="radio"/>	cdimitri	cdimitri	Dimitri	Cathy	im	Flight Operations
<input type="radio"/>	adubois	adubois	Dubois	Alice	im	IT
<input type="radio"/>	meckhard	meckhard	Eckhard	Markus	im	Flight Operations
<input type="radio"/>	agarrett	agarrett	Garrett	Anne	im	IT
<input type="radio"/>	egillian	egillian	Gillian	Erin	im	Maintenance
<input type="radio"/>	jhardy	jhardy	Hardy	Jeff	im	Flight Operations
<input type="radio"/>	ahirsch	ahirsch	Hirsch	Anita	im	IT
<input type="radio"/>	jhorando	jhorando	Horando	Jiro	im	Flight Operations

Appendix: Dynamic Lab Environment Access and User Guide

Getting Started

Dynamic Lab Environment is the name of the CA Education virtual environment for labs and practice activities. The technology behind the Dynamic Lab Environment is provided by Skytap and some of the instructions in this document reference Skytap.

This appendix provides the following information:

- System and network requirements
- Self-Directed Learning login and usage information
- Setting up an environment (other than Self-Directed Learning)
- Instructor-Led classroom set up
- Best practices
- Troubleshooting
- Escalating unresolved issues

System Requirements

The minimum system requirements for an individual client machine accessing the Dynamic Lab Environment are listed below. Please check that you meet the minimum requirements and that you have the equipment you need before attempting to use the environment.

Operating Systems	<ul style="list-style-type: none"> • Windows XP/2003/Vista/2008/Windows 7/2008 R2/Windows 8/2012 • Mac OS X 10.7 or higher (Lion or Mountain Lion) • Linux variants with supported browser and Java versions
Browsers	<ul style="list-style-type: none"> • Internet Explorer 8, 9, or 10 • Mozilla Firefox • Google Chrome • Mac OS X Safari

Java Version

- The acceptable Java versions are Java 1.6, 1.7, or newer.
- If you are unsure which version of Java you are running, simply click the following link and it will auto-detect: <http://java.com/en/download/installed.jsp> or type “java -version” in the terminal for Linux.
- If you are running OS X, please see [Running Java on Mac OS X](#).
- For information on installing Java on your local Linux machine, see [How to install Java on my local Linux machine](#).

Network Requirements

We recommend a minimum download speed of **1.16 Mb/sec (150 KB/sec) per client connection** (i.e., each individual user). In addition, we **recommend latency of 250ms or less**.

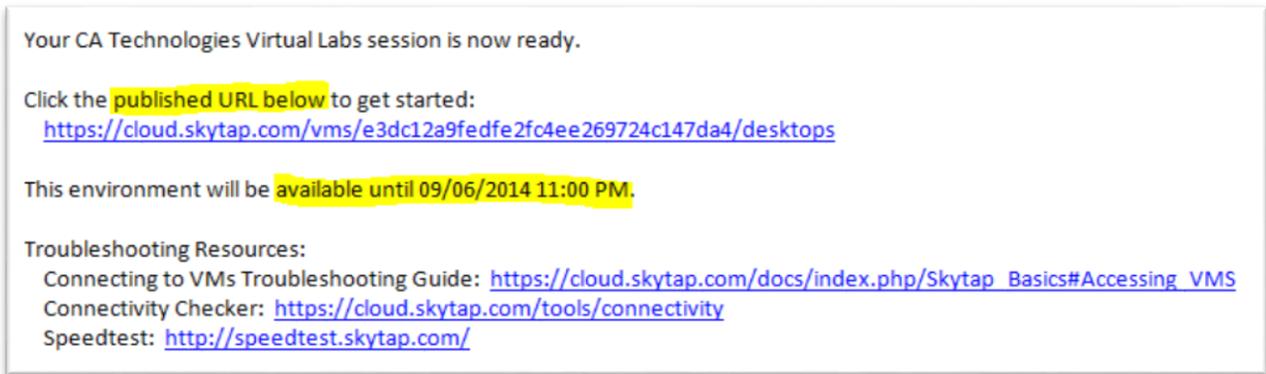
Self-Directed Learning Access and Instructions

After you register for the course, you will receive a system-generated email that includes two important pieces of information:

- A published URL to access your assigned lab environment
- The date and time on which your access to that environment expires

Keep this email as you will need to use the URL whenever you access your lab environment.

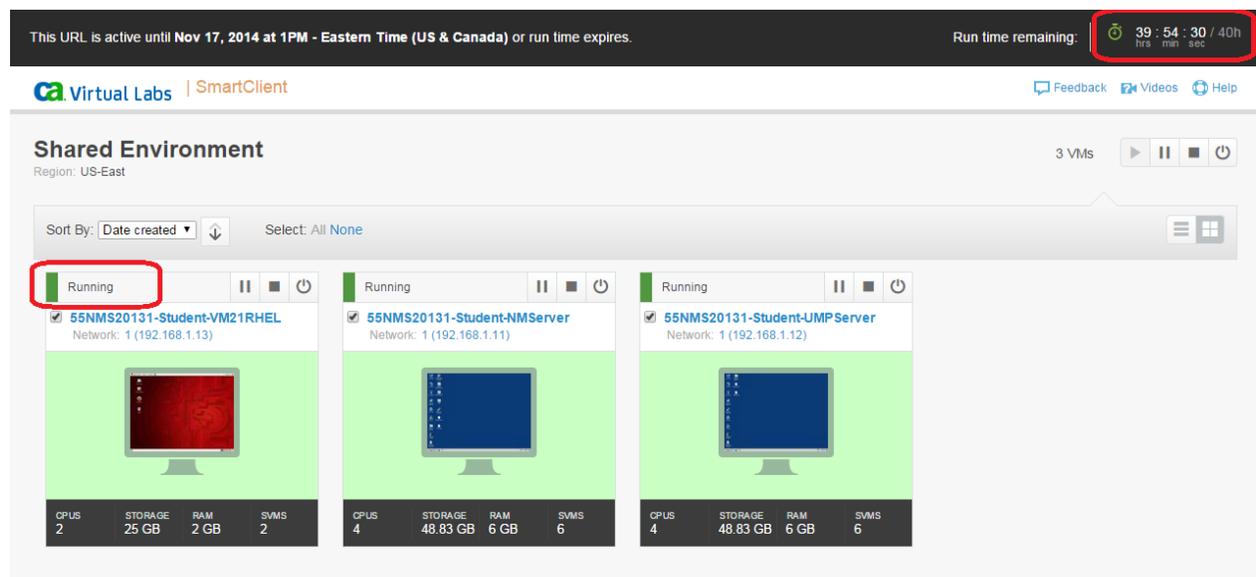
Here is a sample email with the two pieces of information highlighted:



Access Your Assigned Lab Environment

Click on the published URL from the email or paste the link in your web browser to access your assigned lab environment. Use this same link each time you access your dynamic lab environment.

A sample environment with multiple Virtual Machines (VMs) is shown below:



The above sample environment includes three VMs. Your particular environment will be appropriate for the course activities for which you have registered.

NOTE: When you initially access your environment, you may see a Java prompt, asking if you want to run this application. Click Run if you see this prompt. It will enable you to properly connect into the environment and enable the keyboard to work correctly.

Manage Your Assigned Lab Environment

You are allocated a certain amount of lab session time to complete all of the activities associated with a given course. That time starts once you access your environment and continues to run until the end date and time specified in the email. The clock continues to run even if you are not actively working in the environment *unless* you manage your environment.

Use the Suspend and Run buttons to manage your lab environment. These buttons are shown below:



Using Suspend to preserve your lab time

Click the Suspend button to stop the Run Time clock. Do this any time you are not working on course activities to preserve your remaining time. You can suspend any or all of the VMs in your environment by clicking in the check box in each VM window and then clicking the Suspend button.

The Suspend button is called out in the following sample where all three VMs have been checked:

This URL is active until **Nov 17, 2014 at 1PM - Eastern Time (US & Canada)** or run time expires. Run time remaining: 39 : 54 : 30 / 40h

Virtual Labs | SmartClient
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Shared Environment 3 VMs ▶ || ■ 🔌

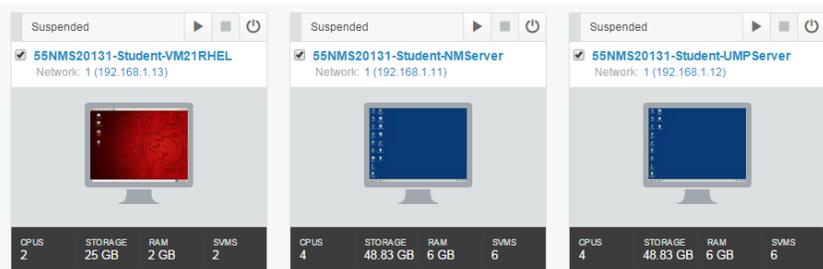
Region: US-East

Sort By: Date created ▼
Select: All None

Running	Running	Running
<input checked="" type="checkbox"/> 55NMS20131-Student-VM21RHEL <small>Network: 1 (192.168.1.13)</small>	<input checked="" type="checkbox"/> 55NMS20131-Student-NMServer <small>Network: 1 (192.168.1.11)</small>	<input checked="" type="checkbox"/> 55NMS20131-Student-UMP Server <small>Network: 1 (192.168.1.12)</small>
		
<small>CPU: 2 STORAGE: 25 GB RAM: 2 GB SVMS: 2</small>	<small>CPU: 4 STORAGE: 48.83 GB RAM: 6 GB SVMS: 6</small>	<small>CPU: 4 STORAGE: 48.83 GB RAM: 6 GB SVMS: 6</small>

Ensure all the virtual machines are selected and click on the suspend button.

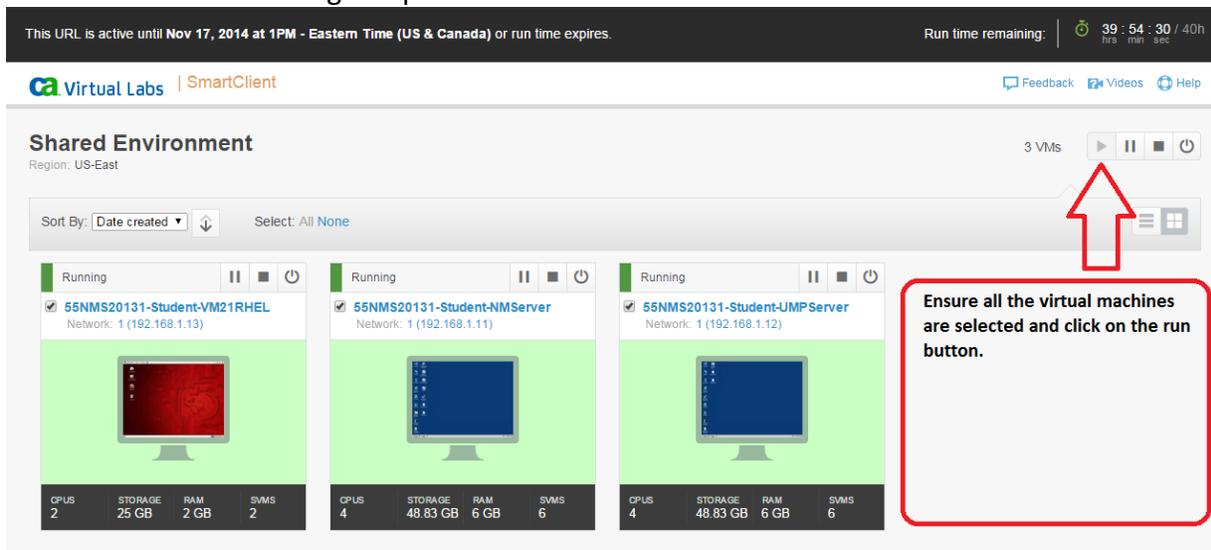
When you click Suspend, your allocated lab time is preserved and the time clock remains paused until you change the status to Run. The VMs in a suspended environment display that status as shown in the following image:



Once you have suspended your environment, you can minimize or close the browser window in which the environment has been running. Use the same URL you were sent in email to re-open your environment when you are ready to resume.

Using Run to resume running your lab time

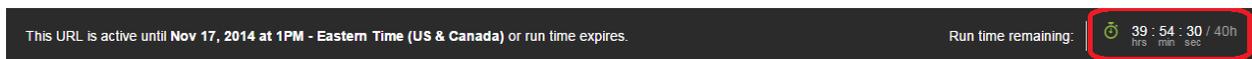
Click the Run button to start up suspended VMs and restart the Run Time clock. The Run button is called out in the following sample:



This may take several minutes. The environment is ready the when VMs are highlighted in green and display a Running status. Click on the machine(s) you want to directly access to start or resume your lab activities.

Tracking lab time using the Run Time clock

The Run Time clock in the upper right corner of your set of VMs tracks how much dynamic lab environment time you have left.



Network Requirements

We recommend a minimum download speed of **1.16 Mb/sec (150 KB/sec) per client connection** (i.e., each individual user). In addition, we **recommend latency of 250ms or less**.

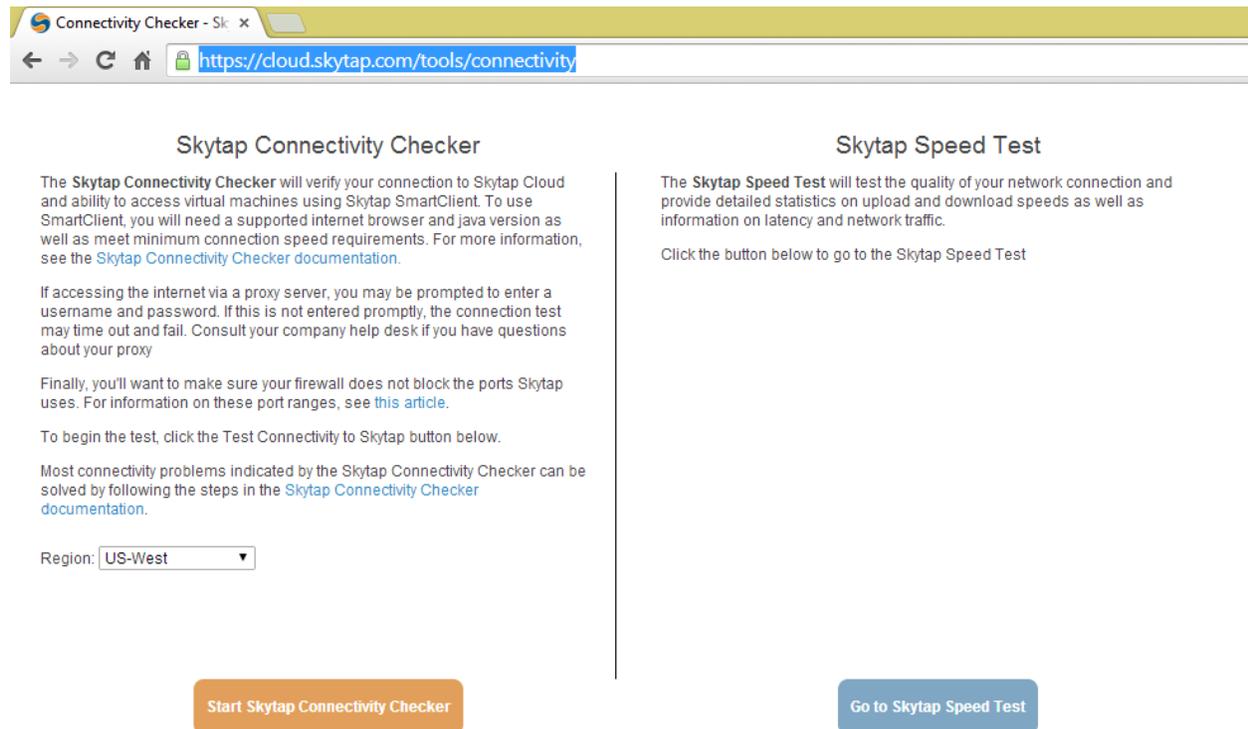
If you have a group of 15 users, each connecting to their own client session from the same physical location concurrently, the recommended amount of bandwidth required is **1.16Mb/sec per user x 15 or 17.5Mb/sec**.

Connection Test

If you are connecting for the first time, or connecting from a computer you have never used before, run the connection and speed tests to make sure that your browser supports a connection to the Dynamic Lab Environment. These tests are hosted by Skytap directly.

Use the following URL to use the Skytap Connectivity Checker to run connection and speed tests:

<https://cloud.skytap.com/tools/connectivity>

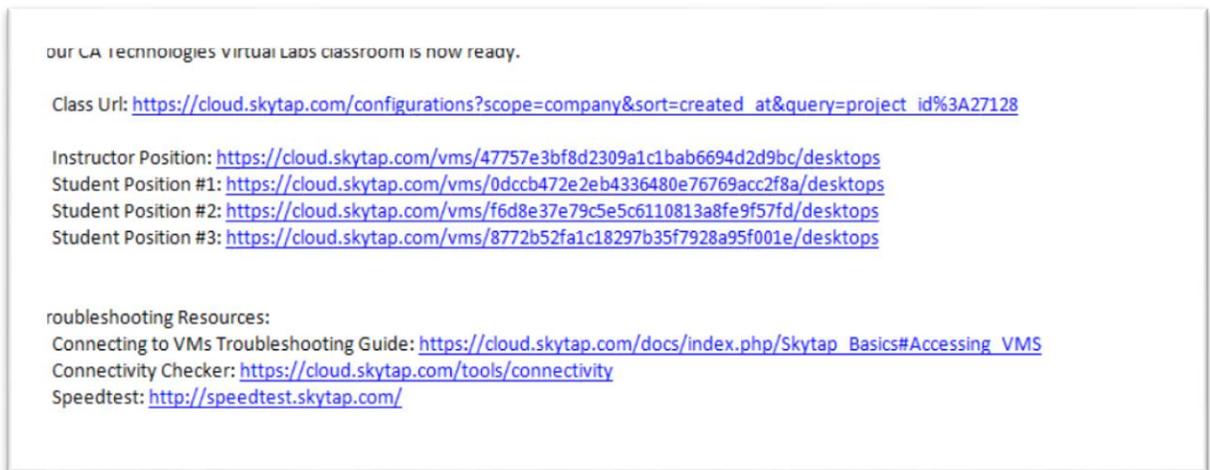


The screenshot shows a browser window with the URL <https://cloud.skytap.com/tools/connectivity>. The page is divided into two main sections:

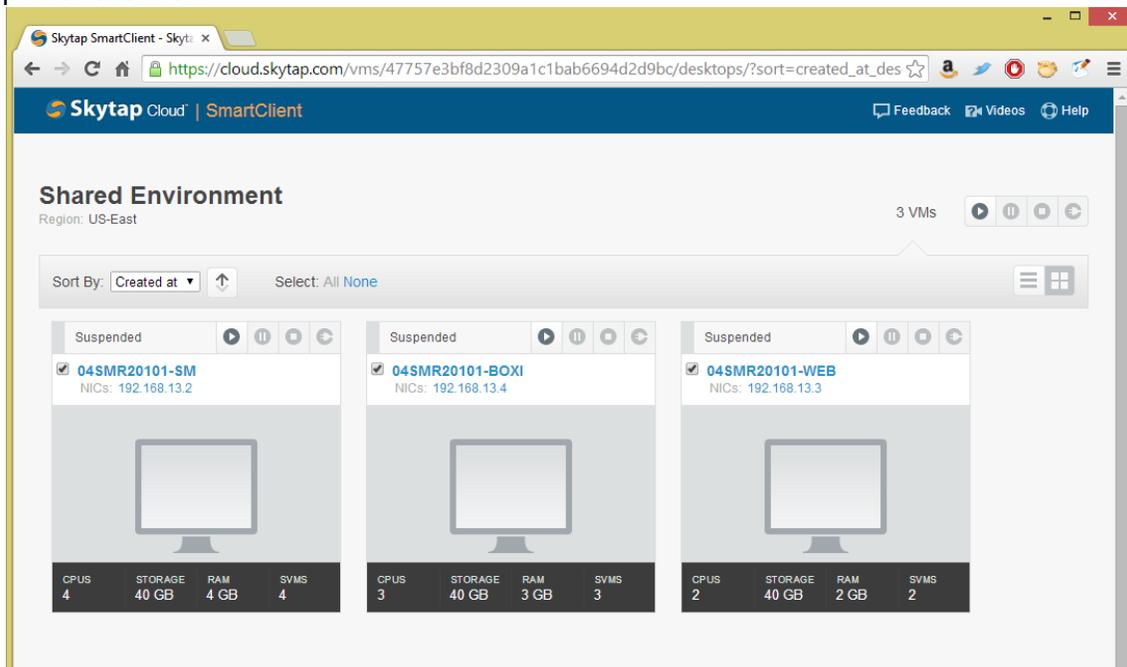
- Skytap Connectivity Checker:**
 - Text: "The **Skytap Connectivity Checker** will verify your connection to Skytap Cloud and ability to access virtual machines using Skytap SmartClient. To use SmartClient, you will need a supported internet browser and java version as well as meet minimum connection speed requirements. For more information, see the [Skytap Connectivity Checker documentation](#)."
 - Text: "If accessing the internet via a proxy server, you may be prompted to enter a username and password. If this is not entered promptly, the connection test may time out and fail. Consult your company help desk if you have questions about your proxy"
 - Text: "Finally, you'll want to make sure your firewall does not block the ports Skytap uses. For information on these port ranges, see [this article](#)."
 - Text: "To begin the test, click the Test Connectivity to Skytap button below."
 - Text: "Most connectivity problems indicated by the Skytap Connectivity Checker can be solved by following the steps in the [Skytap Connectivity Checker documentation](#)."
 - Form: "Region:
 - Button: "Start Skytap Connectivity Checker"
- Skytap Speed Test:**
 - Text: "The **Skytap Speed Test** will test the quality of your network connection and provide detailed statistics on upload and download speeds as well as information on latency and network traffic."
 - Text: "Click the button below to go to the Skytap Speed Test"
 - Button: "Go to Skytap Speed Test"

Instructor-Led Class Set-Up

The Dynamic Lab Environment is accessed directly through a URL link that is provided to the instructor by a system-generated email. The email includes a class URL as well as instructor and student position URLs. A sample email is shown below:

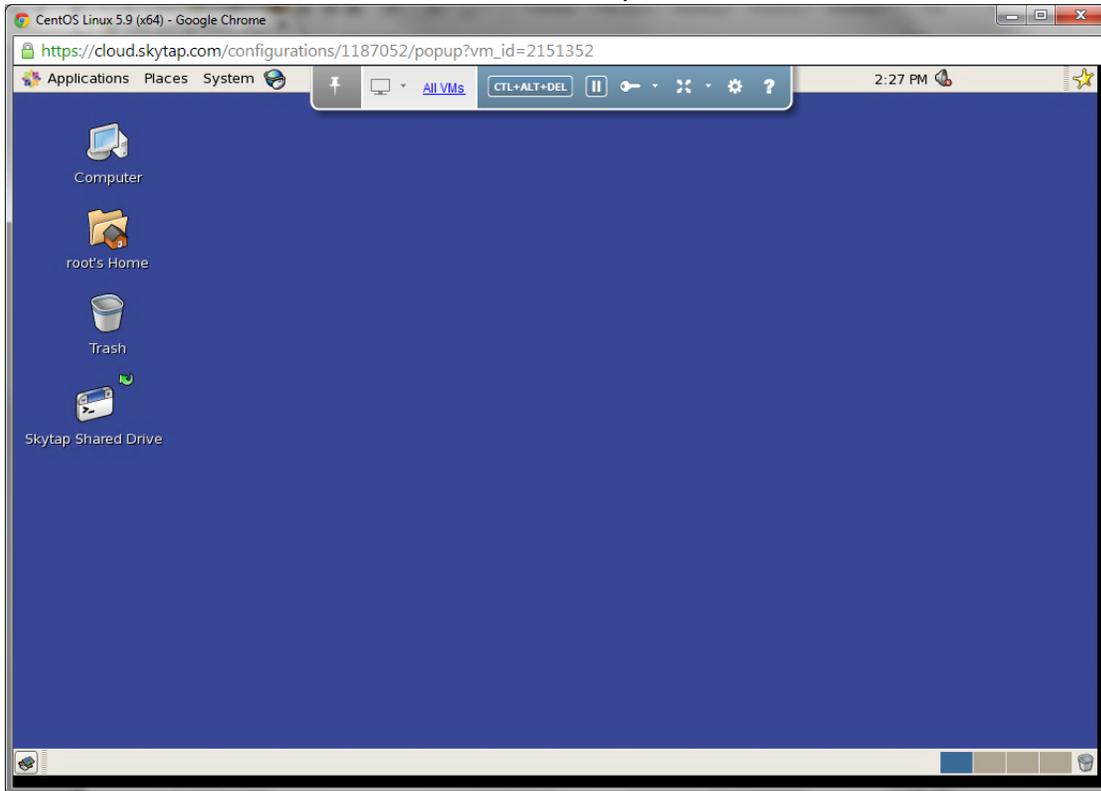


1. Click the URL link or copy and paste the link to your web browser. If the URL link is valid, your web browser will load the environment with the appropriate VM or VM set for hands-on activities.
2. Examine all VMs and ensure they are running by selecting them and clicking the Run button to power them on.



Once they are powered on, all VMs will show that they are in a running status and you may log in to the VMs by clicking the desired VM machine.

3. Click the desired VM machine to connect directly to it.



Note: Most VMs will take you directly to the desktop, but if you are prompted to enter login info, use the following credentials:

- Username: *administrator*
- Password: *caeducation*

Students should have been sent an email message telling them to run the tests before class starts.

Best practice is for the instructor to send an email message to your students to introduce yourself as the instructor and remind them to run the connectivity test before the class starts.

Best Practices

Use the following list of best practices to help you avoid potential issues with the Dynamic Lab Environment:

- Ensure that you are connected to a dedicated hardwired network connection on a broadband internet connection.
- Do not use Wi-Fi connection because it is more susceptible to higher latency issues impacting performance.
- Close all applications and documents you are not using for your virtual training; applications running in the background may use up your computer's bandwidth and affect system performance.
- You should not be connected to a corporate VPN while connecting to the virtual training class.

Troubleshooting

Run both Connectivity Checker and Speed Test from appropriate application regions and submit results to educationlabs@ca.com. Before the start of class, make sure your browser supports a connection to the remote labs.