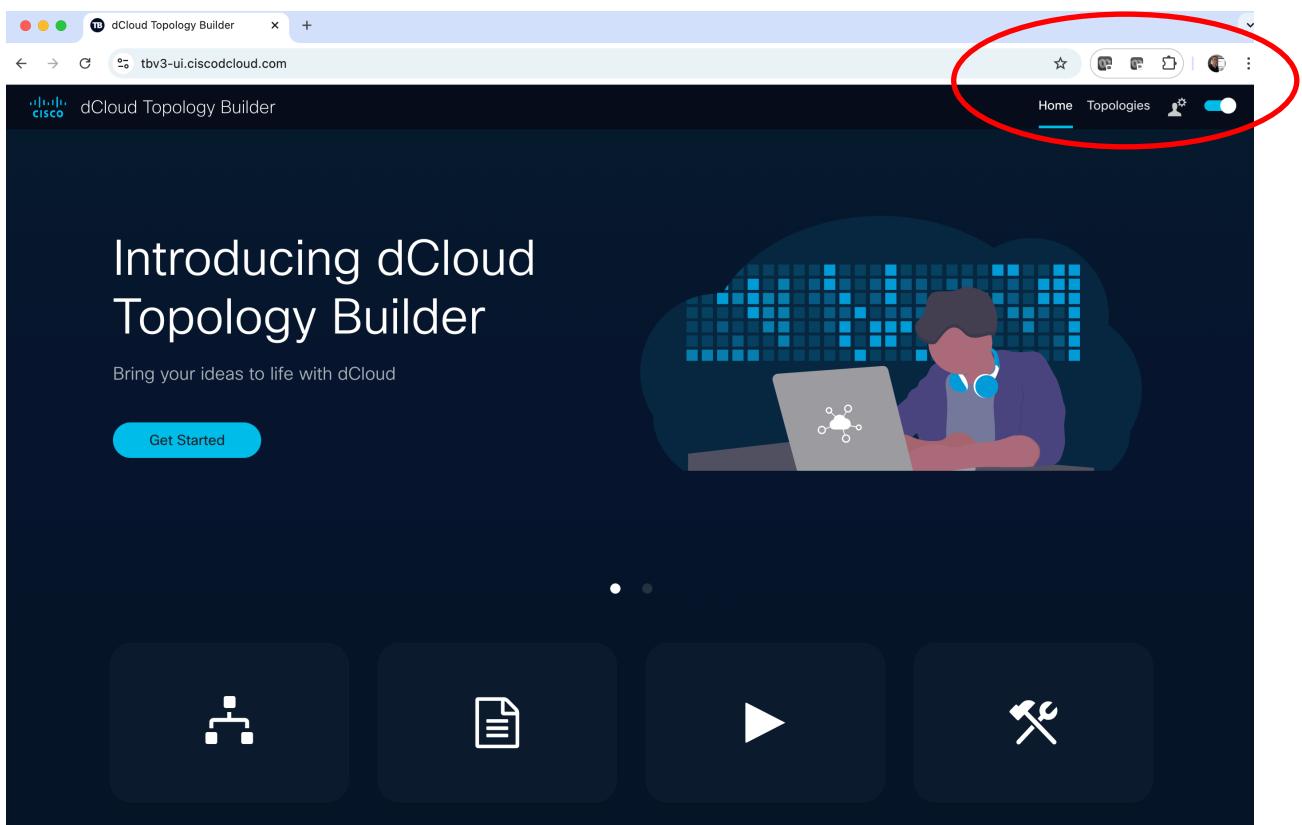


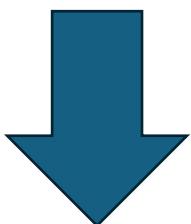
# Lab Guide for BYO dCloud Lab

## Part 1 – dCloud Topology Builder Tool

1. dCloud Topology Builder:  
<https://tbv3-ui.ciscodcloud.com/>
2. CEC login if prompted
3. Select “Topologies”:



4. Select “Create”



My Topologies

Create

Filters (7 applied) ▾

clab-vxr-k8s  
Demo ID: 1139406 12/05/2024 08:12:00 Owner: brmcdoug@cisco.com  
attempting to get k8s nested vms working  
In Sync with dCloud RTP

clab-vxr-k8s  
Demo ID: 1124726 12/04/2024 15:33:04 Owner: brmcdoug@cisco.com  
Rebuilt lab, jalapeno105, sonic-vs and 8k images  
In Sync with dCloud RTP

ASP - SONiC SRv6  
11/20/2024 14:39:30 Owner: robermur@cisco.com  
Lab for showcasing the use of SRv6 load balancing techniques in a SONiC DC Fabric  
Push to Custom Content RTP

srv6-labs-large  
Demo ID: 1131816 11/17/2024 10:14:04 Owner: brmcdoug@cisco.com  
jalapeno103, srv6-ai-backend  
In Sync with dCloud RTP

## 5. Select a Data Center (US East or West)

My Topologies

1 Data Center 2 Demo 3 Details

ANZ Sydney, Australia

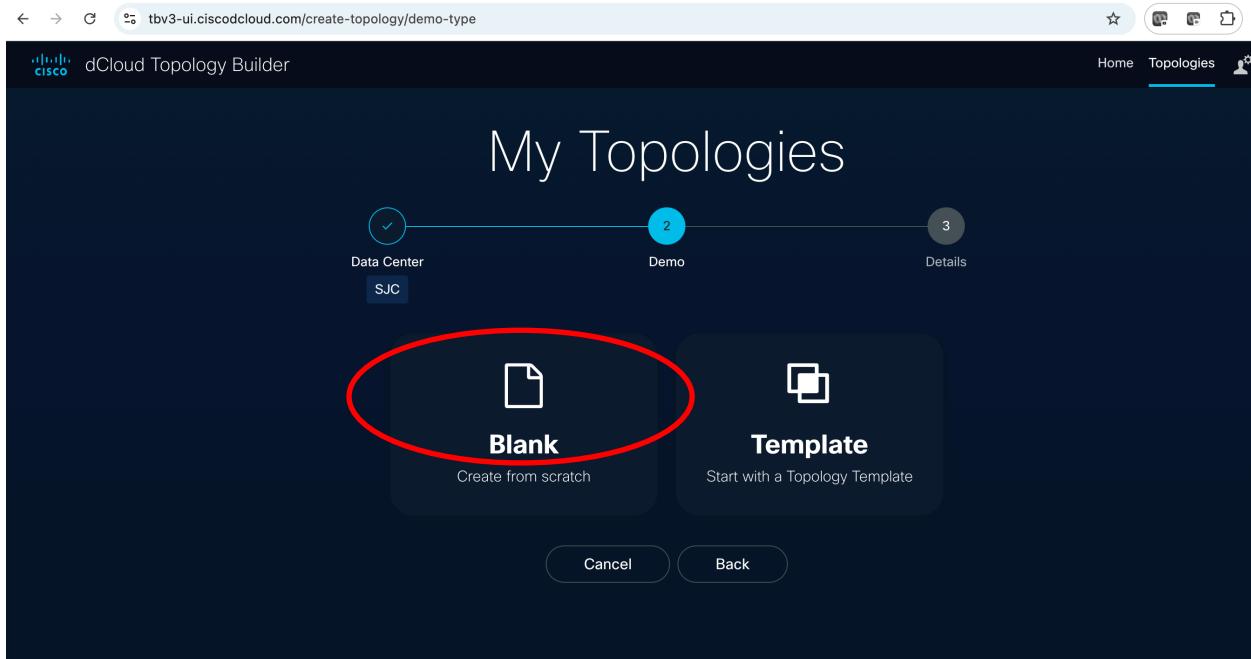
APJ Singapore

EMEA London, United Kingdom

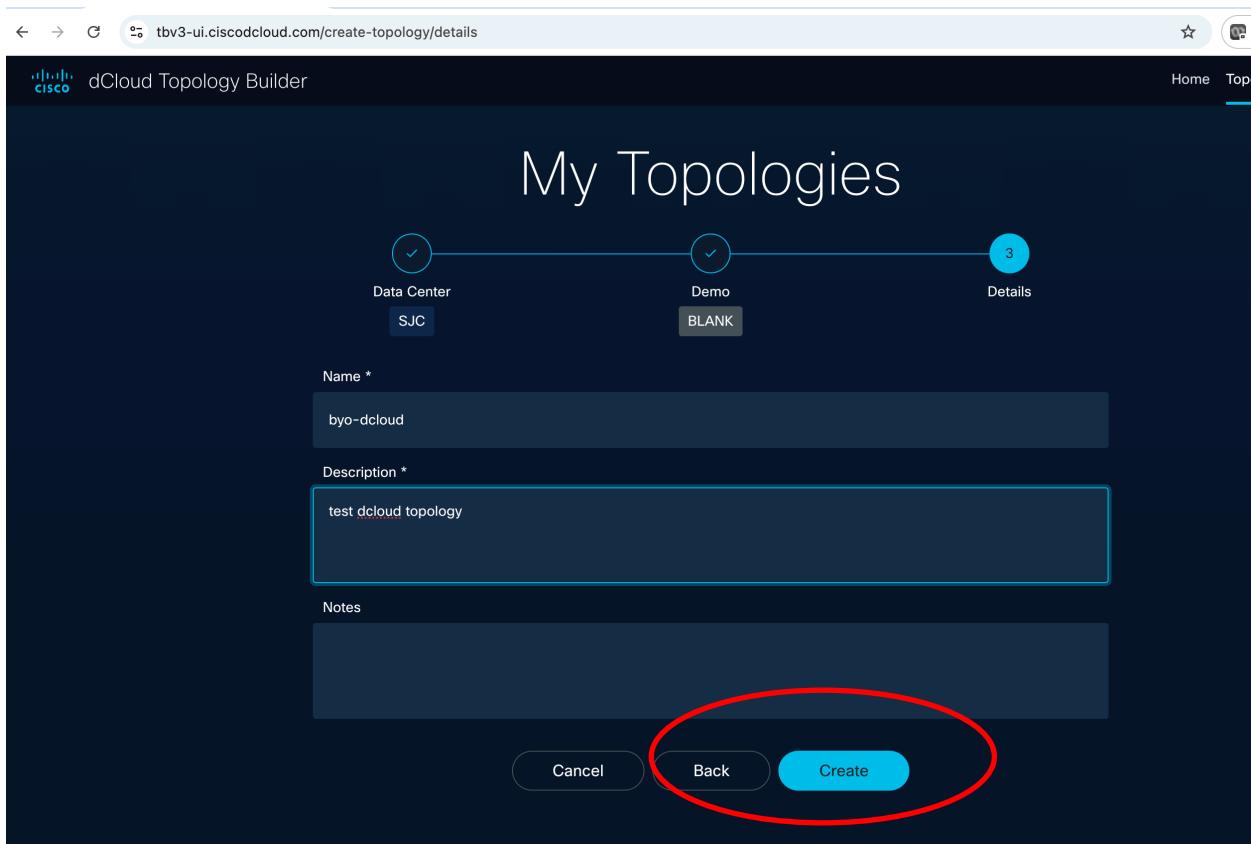
US East Raleigh, North Carolina, USA

US West San Jose, California, USA

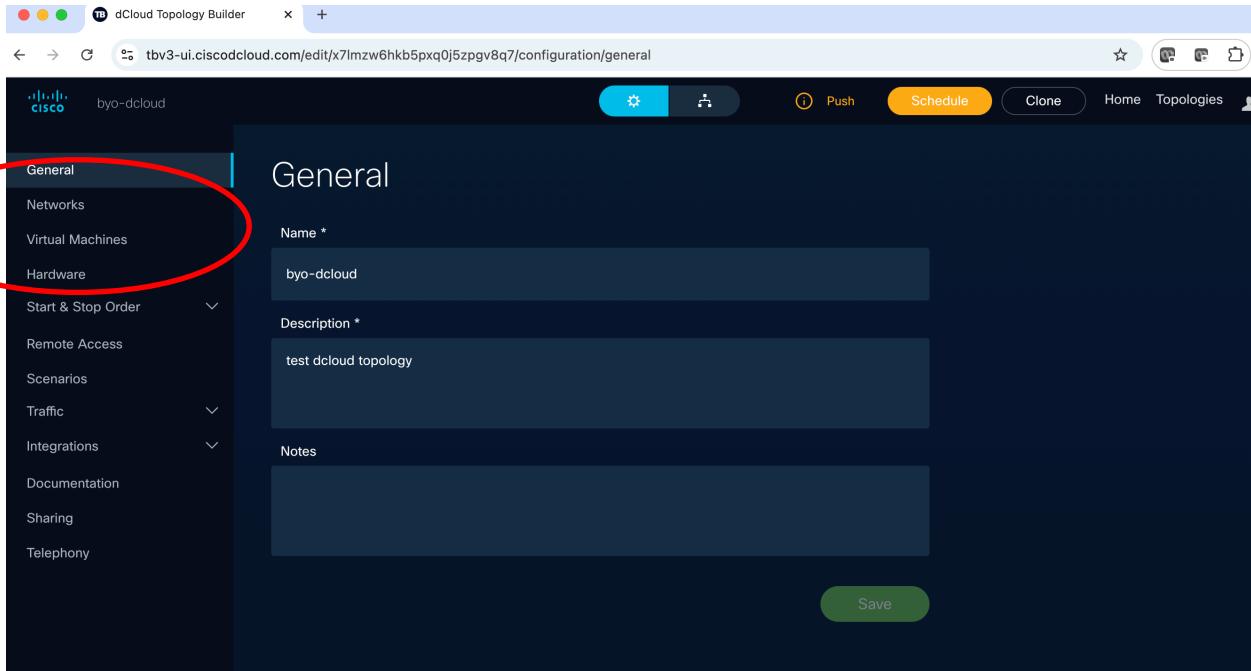
## 6. Select Blank/Create from scratch



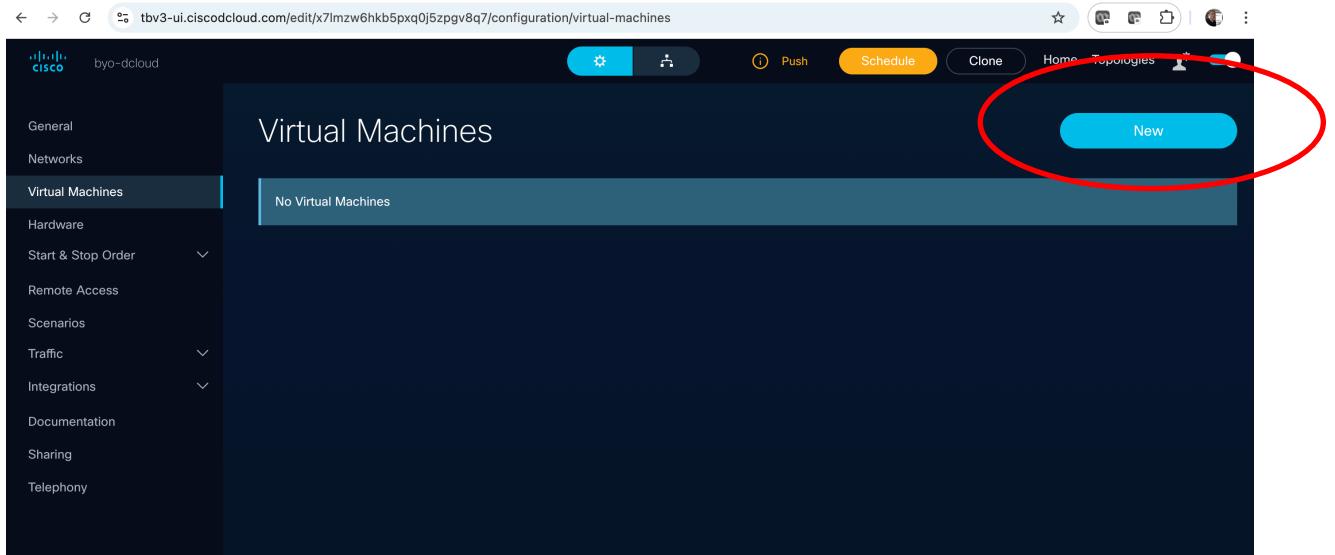
7. Name it and click “create”



8. We're going to build a very simple topology with one Big VM. Select “Virtual Machines”:



9. Select “New”



10. Search for “**ubuntu-22-04-server-80gb-preconfig**” (you can also search for just “ubuntu” to see other options)

The screenshot shows the Cisco Cloud UI interface for adding a virtual machine. On the left, a sidebar lists various configuration categories like General, Networks, and Virtual Machines. The main area is titled 'Add Virtual Machine' and shows a table of VM templates. One template, 'ubuntu-22-04-server-80gb-preconfig', is selected and its details are shown in the table. A red circle highlights the search bar at the top right of the main area.

11. Select the VM template, then in the configure network screen select “Default Network” from the dropdown. Then click Add:

The screenshot shows the 'Configure Network' screen. It lists network interfaces and their assigned networks. The 'Network adapter 0' row has 'Default Network' selected in the dropdown. A red circle highlights this dropdown. At the bottom right, there is a large blue 'Add' button, which is also highlighted with a red circle.

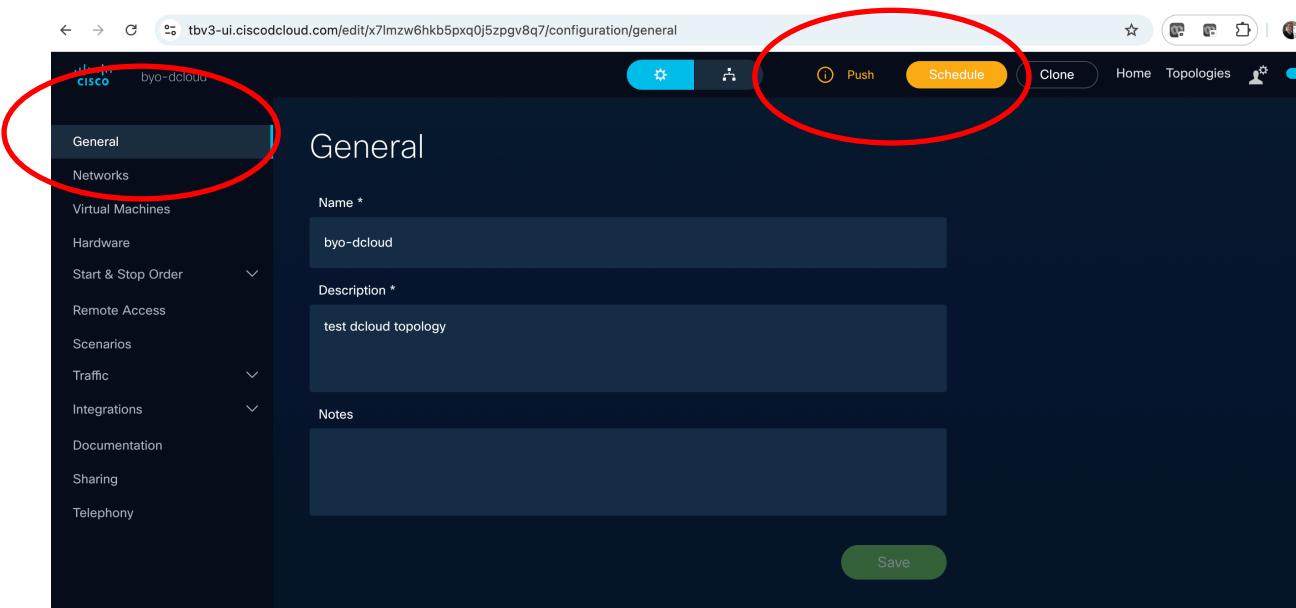
12. Virtual machine has been added. Now we want to edit it to increase memory and CPUs. Hover mouse/trackpad to the right of the screen as shown...select the pencil thing:

The screenshot shows the 'Virtual Machines' section of the dCloud Topology Builder. On the left is a sidebar with options like General, Networks, Virtual Machines (which is selected), Hardware, Start & Stop Order, Remote Access, Scenarios, Traffic, Integrations, Documentation, Sharing, and Telephony. The main area displays a table with columns: Name, Memory (GB), CPUs, and NICs. The first row, named 'ubuntu-22-04-server-80gb-preconfig', has values 8, 2, and 1 respectively. A red circle highlights the 'NICs' column.

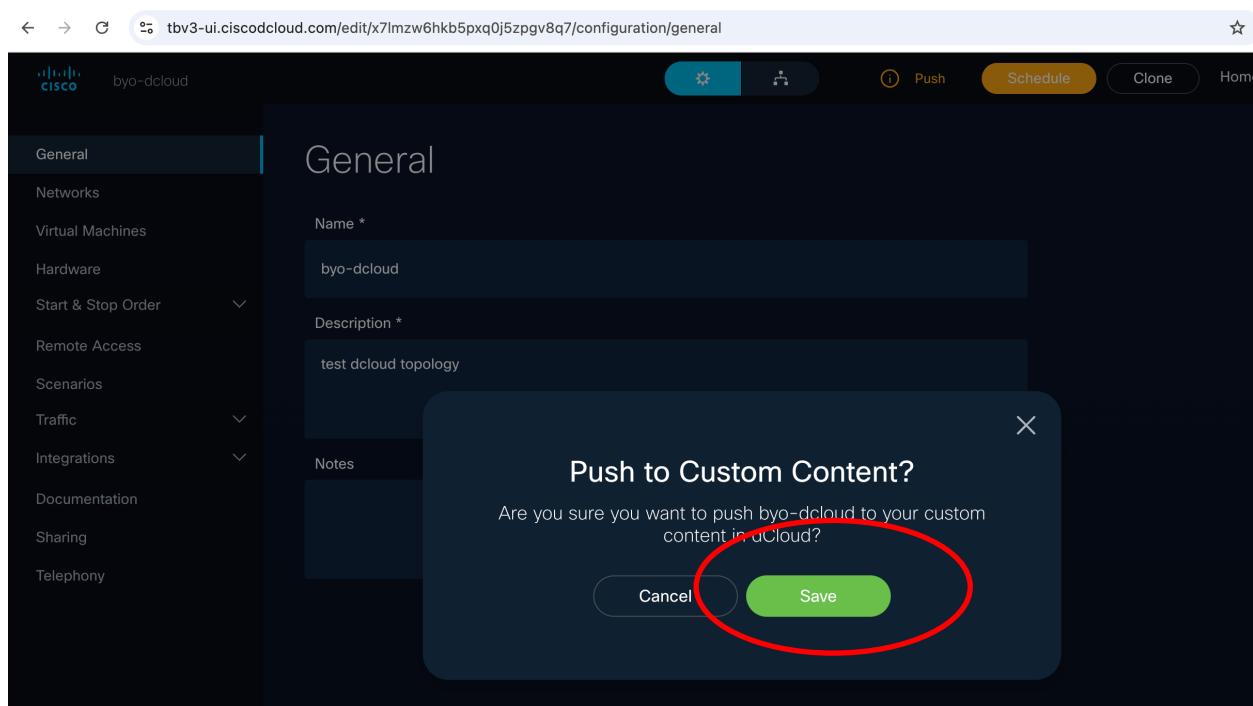
13. Change CPUs to 16 and Memory to 32. Note other options on this screen such as Nested Hypervisor (enable/disable) and Networking, etc. After editing CPU/Memory click “Update”

The screenshot shows the 'Edit Virtual Machine' dialog. The left sidebar is identical to the previous screen. The main area is titled 'Edit Virtual Machine' and contains a 'Virtual Machine' section. It includes fields for Name (ubuntu-22-04-server-80gb-preconfig), vCPUs (set to 16), Memory (set to 32), Operating System Icon (Linux), Description (IP address: 198.18.133.100, login details: dcloud/Cisco12345, Remote Access via VM Console & SSH, 2 vCPU & 8GB RAM & 80GB Hard Disk, DHCP enabled), and a Nested Hypervisor checkbox. At the top right is a 'Reset' button and a large green 'Update' button. A red circle highlights the 'vCPUs' field and the 'Memory' field. Another red circle highlights the 'Update' button.

14. Go back to the “General” screen. You should see “Push” and “Schedule” lit up in Orange. Click “Push”



## 15. Click Save



16. Your “topology” has now been pushed to dCloud (in this case SJC). For reference log into dCloud sjc or rtp:

<https://dcloud2-sjc.cisco.com/>  
<https://dcloud2-rtp.cisco.com/>

17. Select “My Hub” at the top right, then “Custom Content” in the left side menu:

The screenshot shows the Cisco dCloud interface. The left sidebar has a 'Custom content' option highlighted. The main area displays a 'Custom Content' list with one item: 'byo-dcloud'. This item includes details like 'Saved: 05-Dec-2024 10:22', 'ID: 398738', 'Shared by: brmcdoug', and 'States: Saved/Config Only/Promoted'. Below the details are buttons for 'Favorite', 'Delete', 'Edit', and 'Share'. A large red oval highlights the 'Schedule' button at the bottom right of the card.

18. You can schedule the session from either the dCloud UI or the Topology Builder UI:

The screenshot shows the Cisco dCloud General configuration page for a session named 'byo-dcloud'. On the right, there's a 'Schedule' button highlighted with a red oval. A modal window is open, displaying the message 'This content has been pushed to dCloud' and asking 'Do you want to schedule?'. Inside this modal, another green 'Schedule' button is circled with a red oval.

19. dCloud scheduling window...drag the bottom of the blue section down and across to schedule your session for a couple days, or simply click/edit the “End Date”, then click Next

The screenshot shows a Cisco dCloud session scheduling interface. At the top, there are three tabs: 'dCloud Topology Builder', 'Cisco dCloud', and another 'dCloud Topology Builder'. The main window title is 'byo-dcloud'. Below the title, the 'Start Date' is set to '05-Dec-2024'. The 'Start Time' is '10:30' and the 'End Time' is '15:30'. The 'End Date' is circled in red and is set to '07-Dec-2024'. In the bottom right corner, there are 'Cancel' and 'Next' buttons, with 'Next' also circled in red. Below the controls, there are tabs for 'Day', 'Week' (which is selected), and 'Month'. The main area displays a weekly calendar from December 5 to December 11, 2024. The days are labeled 'Thu 5', 'Fri 6', 'Sat 7', 'Sun 8', 'Mon 9', 'Tue 10', and 'Wed 11'. The time axis ranges from 12am to 5pm. On Friday, December 6, there is a blue block from 10:30 to 00:00 labeled 'byo-dcloud'. On Saturday, December 7, there is a blue block from 00:00 to 15:30 labeled 'byo-dcloud'. The 'Sun 8' and 'Mon 9' sections are currently empty.

20. The “Please tell us how you will use this dcloud session screen”...Let “Primary Use” default to Customer Demo/Lab/POC/POV
21. In Account Name – Country enter the country where your customer is based. Then type in customer name. The tool should provide a drop down of options for customer location. Select one of them:

Back Schedule byo-dcloud

Please tell us about how you will be using dCloud to help prioritize future enhancements. We recommend you test connectivity before your session using the Connection Test tool available from the Dashboard page.

\* Required Field

Primary Use \* Customer Demo/Lab/POC/POV

Account Name - Country \* United States

Account Name (English) \* Microsoft

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Account Name (English)

	City	SAVM ID
MICROSOFT US MICROSOFT	SAMMAMISH	283347795
MICROSOFT US MICROSOFT	SAN ANTONIO	283347795
<b>MICROSOFT US MICROSOFT</b>	<b>REDMOND</b>	<b>283347795</b>
MICROSOFT US MICROSOFT	ATLANTA	283347795
MICROSOFT US MICROSOFT	TINLEY PARK	283347795

Show more results for "Microsoft"

## 22. Click Schedule:

← → ⌂ dcloud2-sjc.cisco.com/schedule/398738/usage?returnPathTitleKey=content-schedule-usage

Back Schedule byo-dcloud

Please tell us about how you will be using dCloud to help prioritize future enhancements. We recommend you test connectivity before your session using the Connection Test tool available from the Dashboard page.

\* Required Field

Primary Use \* Customer Demo/Lab/POC/POV

Account Name - Country \* United States

Account Name (English) \* MICROSOFT US MICROSOFT

City \* REDMOND

SAVM ID \* 283347795

Cancel Schedule

## 23. dCloud session will start at the time shown...we may get to wait a few minutes. Coffee break

The screenshot shows the dCloud session dashboard. On the left, a sidebar menu includes 'Sessions' (which is highlighted in blue), 'Authorize for Scheduling', 'Favorites', 'Events', 'History', 'Custom content', 'Routers', 'Connection tests', and 'Topology Builder'. The main area is titled 'Sessions' and shows a table with one row. The row for 'byo-dcloud' has a red oval around it. The table columns include 'Start' (05-Dec-2024 10:30), 'End' (07-Dec-2024 10:30), 'Session ID' (416198), and 'Virtual Center' (5). Below the table are buttons for 'Edit', 'Share', and 'Cancel'. To the right of the table, another red oval surrounds the status 'Starting ...'.

24. Once the Session has started we can AnyConnect VPN in. Click “Info” then scroll down to AnyConnect Credentials.

The screenshot shows the dCloud session dashboard with the 'Info' button highlighted in a red oval. The session details are visible: Start (05-Dec-2024 10:30), End (07-Dec-2024 10:30), Session ID (416198), and Virtual Center (5). Below the session details, there is a 'View' button in a green box. Further down, the 'AnyConnect Credentials' section is shown, listing Host (dcloud-sjc-anyconnect.cisco.com), User (v398user1), and Password (415776).

25. Optionally you can click the green View button, which will open a new topology view tab. Click “Info” and scroll down on the left hand menu to see AnyConnect Credentials here as well:

The screenshot shows the Cisco dCloud Session View interface. At the top, there's a navigation bar with icons for back, forward, search, and session details. Below it is a toolbar with buttons for Info, End, Save & End, Rename, and Documentation. A red circle highlights the 'Info' button.

The main area displays session details in a table:

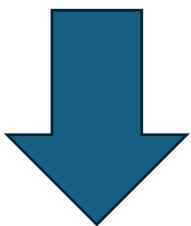
Parent Demo	byo-dcloud
Owner	brmcdoog
Session Id	416198
End Time	07-Dec-2024 10:30
Last Modified	05-Dec-2024 10:38
VPN Available	Yes
Virtual Center	5
Session Licenses	There are no session Licenses configured in this demo.

Below the session details is a sidebar with dropdown menus for Endpoint Kits, Public NAT IP / Internal NAT IP / Proxy, and AnyConnect Credentials. The AnyConnect Credentials section is expanded, showing the following table:

VPN	https://dcloud-sjc-anyconnect.cisco.com
User	v398user1
Password	415776

A red circle highlights the 'AnyConnect Credentials' section. To the right, a network diagram shows a 'Default Network' node with the IP range 198.18.128.0 /18.

26. Fire up your VPN:



**Cisco Secure Client**

AnyConnect VPN:  
Contacting dcloud-sjc-anyconnect.cisco.com.

dcloud-sjc-anyconnect.cisco.com

ISE Posture:  
No policy server detected.  
Default network access is in effect.

Umbrella:  
Umbrella is active.

AMP Enabler:  
Waiting for configuration...

**Cisco Secure Client | dcloud-sjc-anyconnect.cisco.com**

Group: Anyconnect-to-dCloud

Username: v398user1

Password:

## Part 2 – Containerlab and XRd

- Once connected to VPN we can ssh to our Ubuntu VM.

**Ssh [dcloud@198.18.133.100](mailto:dcloud@198.18.133.100)**

**Password = C1sco12345**

```
byo-dcloud - dcloud@server: ~ - ssh dcloud@198.18.133.100 - 153x38
(base) BRMCDOUG-M-890Q:Downloads brucemcdougall$ cd .. /go/brmcdoug-github/byo-dcloud/
(base) BRMCDOUG-M-890Q:byo-dcloud brucemcdougall$
(base) BRMCDOUG-M-890Q:byo-dcloud brucemcdougall$ ssh dcloud@198.18.133.100
Warning: Permanently added '198.18.133.100' (RSA) to the list of known hosts.
dcloud@198.18.133.100's password:
Welcome to Ubuntu 22.04.3 LTS (GNU/Linux 5.15.0-82-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

System information as of Thu Dec  5 06:54:22 PM UTC 2024

System load: 0.080078125      Processes:            322
Usage of /: 10.4% of 76.47GB   Users logged in:      0
Memory usage: 1%               IPv4 address for ens160: 198.18.133.100
Swap usage:  0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

Last login: Wed Aug 30 22:09:49 2023
dcloud@server:~$
```

- Optional: change hostname and your password to something easier to type:
  - vi or nano /etc/hostname and /etc/hosts
  - passwd command
- We'll use the open-source tool Containerlab to build/deploy our XRd network:  
Containerlab homepage: <https://containerlab.dev/>
- Install Containerlab: <https://containerlab.dev/install/>  
Scroll down to the Quick Setup section and copy the curl setup command:

The easiest way to get started with containerlab is to use the [quick setup script](#) that installs all of the following components in one go (or allows to install them separately):

- docker (docker-ce), docker compose
- Containerlab (using the package repository)
- `gh` CLI tool

The script has been tested on the following OSes:

- Ubuntu 20.04, 22.04, 23.10, 24.04
- Debian 11, 12
- Red Hat Enterprise Linux 9
- CentOS Stream 9
- Fedora Server 40 (should work on other variants of Fedora)
- Rocky Linux 9.3, 8.8 (should work on any 9.x and 8.x release)

To install all components at once, run the following command on any of the supported OSes:

```
curl -sL https://containerlab.dev/setup | sudo -E bash -s "all"
```

To complete installation and enable sudo-less `docker` command execution, please run `newgrp docker` or logout and log back in.

5. Paste the command into your ssh session. The installation script will check for dependencies and install packages such as Docker and containerd. Once the script completes run “`sudo clab version`”. Example:

```
dcloud@server:~$ sudo clab version
```

```
version: 0.60.0
commit: 53c2ce42
    date: 2024-12-05T18:11:54Z
    source: https://github.com/srl-labs/containerlab
rel. notes: https://containerlab.dev/rn/0.60/
dcloud@server:~$
```