D-Link Nuclias Connect Practice Labs

Target Audience: DMEA Engineers at Dubai (9) & branch location (8)
Student Name: Mr. _____/E-Mail _____@me.dlink.com (Team 1 ~ Team 3)
Training Course Date: Feb. 20 ~ Feb. 21, 2019 (Dubai, UAE)
Required Application: D-Link Nuclias Connect **1.0.0.20** & DAP2680-firmware-v200-**rc036** (Note: Nuclias Connect and DAP-2680 firmware, pre-installed and upgraded); attendee's mobile phone can be utilized as wireless clients (STA).

Network Topology:
Team 1: DGS-1008MP, DAP-2680*2, and DNC (DMEA laptop, IP:__.__.__.___)
- MAC Address (2.4GHz) 18:0f:76:___:___:___(IP add:_____._____._____.___)
- MAC Address (2.4GHz) 18:0f:76:___:___:___(IP add:_____._____._____.___)

Team 2: DGS-1010MP, DAP-2680*2, and DNC (DMEA laptop, IP:__.___.___.___)
- MAC Address (2.4GHz) 18:0f:76:___:___:___(IP add:_____._____._____.___)
- MAC Address (2.4GHz) 18:0f:76:___:___:___(IP add:_____._____._____.___)

Team 3: DGS-1010MP, DAP-2680*2, and DNC (DMEA laptop, IP:___.___.___.___)
- MAC Address (2.4GHz) 18:0f:76:___:___:___(IP add:_____._____._____._____)
- MAC Address (2.4GHz) 18:0f:76:___:___:___(IP add:_____._____._____._____)

DAP-2680 (default IP: 192.168.0.50; admin/admin)
Nuclias Connect Login ID/PWD (default): admin/admin
Nuclias Connect Login ID/PWD (training course): admin/cwm20
- joseph/cwm20; dhalish/cwm20; tonythomas/cwm20; manjith/cwm20; shabir/cwm20; jose/cwm20; raydan/cwm20; noor/cwm20; mcruz/cwm20 (Root Admin)

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Lab0: Lab Facility Readiness [p21~p29; p94~p97]
- Make sure Nuclias Connect and DAP-2680 are all in on-line active mode. DAP-2680 can be accessed via local GUI interface (192.168.0.50 or local IP address in this training facility)

Lab1: Nuclias Connect Setup Wizard (configuration parameters) [p98~p113]
- Click Wizard button (upper right hand corner of web page), follow below steps and answer underneath questions
- Device Access Address (server IP)? _____ (is it listed over here?)
- What is the Device Access Port? _____ (TCP or UDP?)

- Input Country and Time Zone:
- Site/Network: (Team 1) Site/Network: HULT/Business_School; SSID Name: Internet_CTY; Security: WPA-Auto-Personal, SSID Password: 44275800.
- Site/Network: (Team 2) Site/Network: MBRU/Dental_Medicine; SSID Name: Healthcare_CTY; Security: open system.
- Site/Network: (Team 3) Site/Network: AUE/College_of_Law; SSID Name: Academic_CTY; Security: WPA-Auto-Personal, SSID Password: 800aue283.
- Use auto-discovery to manage associated DAP-2680 devices
- During this discovery process, please record the AP status change _____, _____, _____, _____, _____
- End

Lab2: Access Point Status Verification (Nuclias Connect menu: Monitor > Access Point) [p478~p482; p494]

- How many DAPs are listed over there in your Nuclias Connect? _____
- What are the MAC address of each DAP-2680? _____:_____:___:___:___:___; ___:_____:_____:_____:_____:_____; _____:_____:_____:_____:_____:_____.
- Select one of the DAPs and find out 2.4 GHz channel being used: _____; 5 GHz channel being used: _____
- Out of all of the managed DAPs in your territory, which one occupies the highest CPU usage (%)? ___:___:___:___:___:___: (Monitor > Access Point)
- Out of all of the managed DAPs in your territory, which one, lowest memory usage (%)? ___:___:___:___:___:___: (Monitor > Access Point)
- By identifying the highest memory utilization AP, are we able to "Link to Device Detail Page"? _____(Yes/No). If so, what is the live data messages regarding HW Version _____; Firmware Version _____; Uptime "_____h _____ m _____ s" being displayed in that web page?
- Within the "Device Detail Page" and under the "Usage" tab, what is the highest upload usage? _____. It is occurred in the timeframe of _____.
- End

Lab3: Wireless Client Status Verification (Nuclias Connect Menu: Monitor > Wireless Client) [p367-p374]

- Use any available wireless devices and connect to pre-defined SSID, as stated in Lab2, create some internet traffic upon availability. Then, verify the status of current connected wireless stations.
- What are the IP address and channel number of the connected stations?

- ✓ (IP: _____._____._____._____; Band: _____; Channel number _____)
- ✓ (IP: _____._____._____._____; Band: _____; Channel number _____)
- ✓ (IP: _____._____._____._____; Band: _____; Channel number _____)
- ✓ (IP: _____._____._____._____; Band: _____; Channel number _____)

- Which DAP-2680 handles your personal mobile phone device? (DAP mac address: _____:_____:_____:_____:_____:_____)
- What is the last seen time period of your connected mobile phone device? (Date: _____; Time: _____)
- What is the RSSI (dBm) of your connected mobile phone device? _____, Is it higher or lower than the attendees' devices among your team members? (Higher / Lower).
- How to disable the fields of "Upload" and "Download" in your screen? _____
- End

Lab4: Band Steering [p270-p276]

- In Lab 3, if we are seeing quite a few devices are operated in 2.4 GHz and we would prefer them to be in 5 GHz. What would be the process of (a) activating Band Steering and (b) verifying the configuration results?
- Band steering configuration (Hint, Nuclias Connect Menu: Configuration > Profile setting > Site / Network Name > Wireless Resources)
- Upload the configuration and the Time Start is "immediate", what is the Run Status displayed in your Nuclias Connect? _____
- What are the IP address and channel number of the connected stations (after pushing the profile) (make comparison to the result displayed in Lab 3)?
  - ✓ (IP: _____._____._____._____; Band: _____; Channel number _____)
  - ✓ (IP: _____._____._____._____; Band: _____; Channel number _____)
  - ✓ (IP: _____._____._____._____; Band: _____; Channel number _____)
  - ✓ (IP: _____._____._____._____; Band: _____; Channel number _____)
- End

Lab5: Multiple WLAN SSID operation [p259-p337; p182-p186]

- You would like to create additional SSID within your network topology environment.
- Team 1: SSID: DGS3130; Index: SSID 2; Security: Open System; Encryption: Enabled; Key Type: ASCII; Key Value: 12345
- Team 2: SSID: DGS3630; Index: SSID 3; Security: Open System; Encryption: Enabled; Key Type: ASCII; Key Value: 87654

- Team 3: SSID: DQS-5000; Index: SSID 4, Security: Open System; Encryption: Enabled; Key Type: ASCII; Key Value: 66886
- This configuration is applied to both 2.4 GHz and 5 GHz.
- After successfully pushing the modifications to your DAPs, reconnect your mobile device(s) to the newly created SSID and generate Internet traffic.
- Record the following information on your mobile device:

IP add: _____._____._____._____; Band: _____; Channel number _____

- End

Lab6: Passcode Authentication for Enterprise Visitor Management [p392-p405]

- This lab involves with the following tasks (a) SSID configuration for enterprise visitors, (b) user account setting up with "front desk user" privilege, and (c) passcode creation
- Team 1: (a) SSID: COVR-2202; Index: SSID6; Security: Open System; User Authentication: Passcode; Idle Timeout: 10 minutes; (b) Username/PWD: lobby1/cwm20; Privilege: Front desk staff; User Privilege tab, click proper "Site/Network" target, move "lobby1" to "Authorized Users" (c) Login Nuclias Connect with "lobby1" user account, click proper "Site/Network" and select "Generate Passcode" passcode quantity: 5; Duration: 2 hours; Last Active Day: 2019-2-23; User Limit: 1
- Team 2/3: (a) SSID: DIR-2680/DCH-S161; Index: SSID6; Security: Open System; User Authentication: Passcode; Idle Timeout: 20 minutes; (b) Username/PWD: lobby2/cwm20; Privilege: Front desk staff; User Privilege tab, click proper "Site/Network" target, move "lobby2" to "Authorized Users" (c) Login Nuclias Connect with "lobby2" user account, click proper "Site/Network" and select "Generate Passcode" passcode quantity: 10; Duration: 1 hour; Last Active Day: 2019-2-23; User Limit: 1
- After successfully pushing the configuration to your DAPs, reconnect your mobile device(s) to the SSID being configured in this lab task. What is the passcode you select to connect to wireless network? _____
- Should we decide to allow maximum 2 users per passcode, what is the configuration step? _____
- Back to Nuclias Connect menu (with Root Admin user privilege) (Monitor > Wireless Client), what is the OS information for the devices connecting via passcode (Auth. Type/OS): _____/_____ [p372-p373]
- End

Lab7: Channel Adjustment and Power Adjustment [p321-p333]

- Where are the configuration regarding "Auto Channel Adjustment" and "Auto Power adjustment" in your Nuclias Connect (Hint: browse the menu of: Configuration > Profile Settings > Site > Network > _____
- Make the "Adjust Frequency" to 1 hour
- Reconnect all of your wireless devices to the SSID stated in Lab1. Write down the changes of "Channel" and "Power", if any.
- "Channel" _____ and "Power" _____ (as of NOW)
- "Channel" _____ and "Power" _____ (an hour later)
- End

Lab8: Dashboard [p166-p202]

- What is the "Average" number of clients displayed in your Nuclias Connect server? _____
- In the chart of "Traffic Usage in the Last Hour vs Traffic Usage in the Past 7 Days," what is the range of average traffic size? High: _____ (MB) Low:_____ (MB); what is the range of High traffic size? High:_____(MB) Low:_____ (MB);
- What is your downlink traffic usage range during last hour? _____ (MB)
- What is your uplink traffic usage range during last hour? _____ (MB)
- Out of all of the SSIDs being configured in this lab practice, which one occupies the highest traffic usage? Name of SSID: _____; what is the range of the traffic usage within last hour? High:_____ Low:_____
- What are the broadcast "Channel Utilization" in your Nuclias Connect (the channel actually comes with number of APs)? APs on 2.4 GHz Channel _____,_____,_____,_____,_____,_____; APs on 5 GHz Channel _____,_____,_____,_____,_____,_____;
- End

Lab9: Report [p204-p246]

- In the Peak Network Activity of Report, what "Threshold" and "Probability" being displayed? Threshold _____ / Probability _____
- Should we modify the "Threshold" to 3, what would be the corresponding probability? _____
- (Nuclias Connect menu: Report > Most Active AP) Insert your favorite floor plan and make sure all of the DAPs are displayed over there. Which DAP-2680, within your territory, manages the highest rate traffic for wireless network? DAP-2680 MAC address: ____:____:____:____:____:____:

- Should we physically move other DAPs to a better condition, except the one being identified from last question, do we see any changes? _____ (Yes/No), if Yes, please describe the changes here? _____
- Unplug the power cable from one of the DAP-2680s, wait for a few seconds, and then refresh that web page. What kind of color is displayed in that AP icon? _____; Then, make sure you put the power cable back and confirm its online status.
- In Nuclias Connect (menu: Report > Hourly Network Activity), what is the highest number of clients in the chart, titled "Hourly Unique Clients vs Past 7 Days Experiences"? _____
- End

Lab10: Log [p194-p202; p495-p502]

- Select one of the DAP-2680s in your territory and make Name/Location changes, such as (Team 1: Name, D2680-Team1; Location, Dubai_Mall; Team 2/3: Name, D2680-Team2/D2680-Team3; Location, Bastakia/Burj_Khalifa) (Hint: Nuclias Connect menu: Monitor > Access Point, Click the icon of "Link to Device Detail Page")
- Out of four components in Log (SNMP Traps, Syslogs, System Event Log, and Device Log), please locate the entries that correctly state the configuration changes, as deployed in the last item? _____
- Within that specific entry, what is the (DAP) IP Address? _____; what is the (DAP) MAC Address? __:___:___:___:_____:___; what is the Operation Type? _____; and the "Log details" field shows _____
- Out of four components in Log (SNMP Traps, Syslogs, System Event Log, and Device Log), which one documents the wireless client "4-Way Hand Shake success?" _____
- End

Lab11: Nuclias Connect System Settings [p348-p355; p461-p472]

- Create a user account with "Root User" privilege (Team 1: rootuser1/cwm20; Team 2: rootuser2/cwm20; Team 3: rootuser3/cwm20). Login with this account and attempt to generate another SSID (Team 1: SSID: Safari; Team 2: SSID: stellar_twr; Team 3: SSID: wadi_water), are you able to push this configuration to DAPs? (Yes/No), how about the capability of viewing Syslogs under Log menu? (Yes/No)

- CAPTCHA is able to help our website less vulnerable to spam bots Login. However, if we decide to temporary disable login captcha in the login page, what kind of settings could produce such result? _____
- Since we will be deploying a significant number of DAPs in our topology and we are suggested to modify "Live Packet Interval" setting from 1-min to 4-min. Please update the changes accordingly. Then, launch Wireshark in our Nuclias Connect server to confirm actual activity. [p483-p484]
- We are requested to back up configuration file to D:\Nuclias_Connect directory. Please activate Auto Back up, shortest Interval Time and proper Backup Path
- We then been asked to download System log, what is the file size of the latest item? File Size: _____; File format: _____ (.xls/.txt/.doc)
- Back to the Wireshark capture being collected in this lab practice, locate a Frame where source (DAP), destination (Nuclias Connect), Protocol (TLSv1.2), please write down TCP Src Port _____; TCP Dst Port _____
- Again, we are working on the collected Wireshark capture. Within the Frame(s) of Source (connected wireless clients) and Destination (Nuclias Connect server) with Info "Client Hello" What are the protocols being utilized? TLSv1 (Yes/No); TLSv1.2 (Yes/No); SSLv3 (Yes/No)
- Before moving to next lab practice, please restore the configurations as (a) Login Captcha: Enabled and (b) Live Packet Interval to 1-min
- End

Lab12: Nuclias Connect System Information Folder [p471-p472; p88-p92]

- Go to Nuclias Connect home directory (i.e.: C:> Program Files (x86) > Nuclias Connect > Web > LogFiles)
- Select and open the file displayed with latest data modification timestamp. Read the content from the beginning of this document and answer the following questions:
  - ✓ Date / Time $ [Info] ----- Database(mongodb: x.y.z) connection is successful. What is mongodb version being used? _____._____._____
  - ✓ Date / Time $ [Info] (infotest) ----- connect url: [mongobd: // .....@xxx.xxx.xxx.xxx:yyyyy/CWM2], what is the url? _____._____._____._____**:**_____/CWM2
- Go to Nuclias Connect home directory (i.e.: C:> Program Files (x86) > Nuclias Connect > MongoDB)
- Select and open "log" file. Read the content from the beginning of this document and answer the following questions:

- ✓ What is the timeframe of the earliest "***** SERVER RESTARTED*****" message? Date:_____ Time:_____
- ✓ What is the timeframe of the latest "***** SERVER RESTARTED*****" message? Date:_____ Time:_____
- ✓ Locate the latest entry regarding "I CONTROL [initandlisten] MongoDB starting: pid= _____ port=27010 dbpath=C:\Program Files (x86)…..
- ✓ Press Ctrl + Shift + Esc keys to access Task Manager, go to "Services" tab and then locate the entry with the same PID as stated in last question. What is its "Status?" _____
- ✓ In "Task Manager," please click "Details" tab and locate "nuclias-web.exe" in the Name column, what is its PID? _____

- Close Task Manager
- End

Continue to the last page

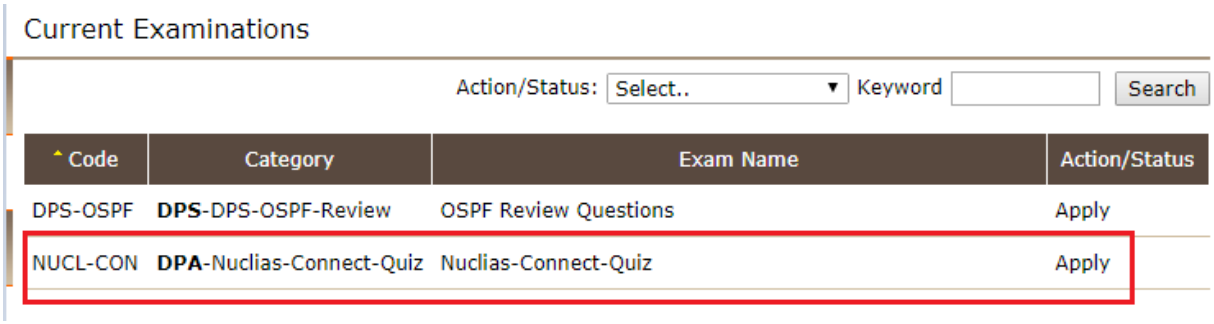
Please Share Your Valuable Feedback With Us

- Any other (WLAN/network management) features recommended to Nuclias Connect?
  1. _____
  2. _____
  3. _____
  4. _____
  5. _____

- What would be Nuclias Connect major competitor(s) in the market place?
  1. _____
  2. _____
  3. _____

- In what industry we should approach our customers on this WLAN solution?
  1. _____
  2. _____
  3. _____

You are requested to visit academy.dlink.com web site writing "D-Link Nuclias Connect Quiz" on Thu. Feb. 21, 2019. (25 Multiple choice questions, 30-minutes)
Best of luck for success



Thank You.
D-Link Academy