



NetBrain for Beginners

NetBrain Technologies
15 Network Drive
Burlington, MA 01803

+1 800.605.7964
education@netbraintech.com
www.netbraintech.com



Training Flow

- Set of slides to provide context
- Demonstration using ITE Workstation
- **Workspace:**
Class – New ITE Lab (Shared)
- Hands-on: 2 Labs
- Q&A

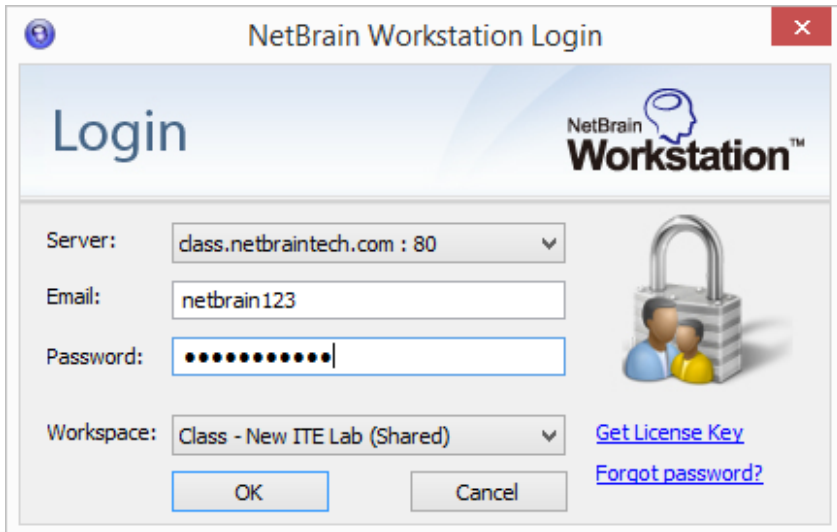


A screenshot of the NetBrain interface. At the top, there are three icons: 'Participants', 'Chat', and 'Q&A'. The 'Q&A' icon is crossed out with a red 'X'. A red arrow points to the 'Chat' icon. Below these icons are two panels: 'Participants' and 'Chat'. The 'Participants' panel shows 'Speaking: Education NetBrain (st)', 'Panelists: 2' (Education NetBrain (Host) and NetBrain Training1), and 'Attendees: Matthew Speidel (me)'. The 'Chat' panel is currently empty. At the bottom, there is a 'Send to:' dropdown menu set to 'All Panelists', a text input field with placeholder text 'Select a participant in the Send to menu first, type chat message, and send...', and a 'Send' button.

Login to server class.netbraintech.com:80 (NOT trial.netbraintech.com)

Prepare for Class Exercises

- Requirements for class exercises:
 - » You must download and install NetBrain ITE Workstation on your local PC
 - » Lets you try features in NetBrain's training lab network over the Internet
- NetBrain Workstation Download Link:
http://download.netbraintech.com/NetBrain_ITE_setup.zip



NetBrain Workstation Login

Login

NetBrain Workstation™

Server: class.netbraintech.com : 80

Email: netbrain123

Password: ●●●●●●●●

Workspace: Class - New ITE Lab (Shared)

OK Cancel

[Get License Key](#)
[Forgot password?](#)

Change server to class.netbraintech.com:80

Login to workspace [Class – New ITE Lab](#)

Guest Credentials = netbrain123/netbrain123

Course Agenda

○ Class Part I

- » Overview of NetBrain structure & deployment
- » Common NetBrain workflow (“SMA”)
- » Visual Search (elementary)
- » Qmap™ file structure and dynamic elements
- » Observer Mode
- » Layer 2 Qmap differences
- » Built-in highlights
- » SmartTelnet

○ Exercise 1 (10 minutes)

○ Class Part II

- » A to B Path Calculator (elementary)
- » Overview of Qapps™
- » The Overall Health Monitor
- » Qapp Selector
- » Qapp Center

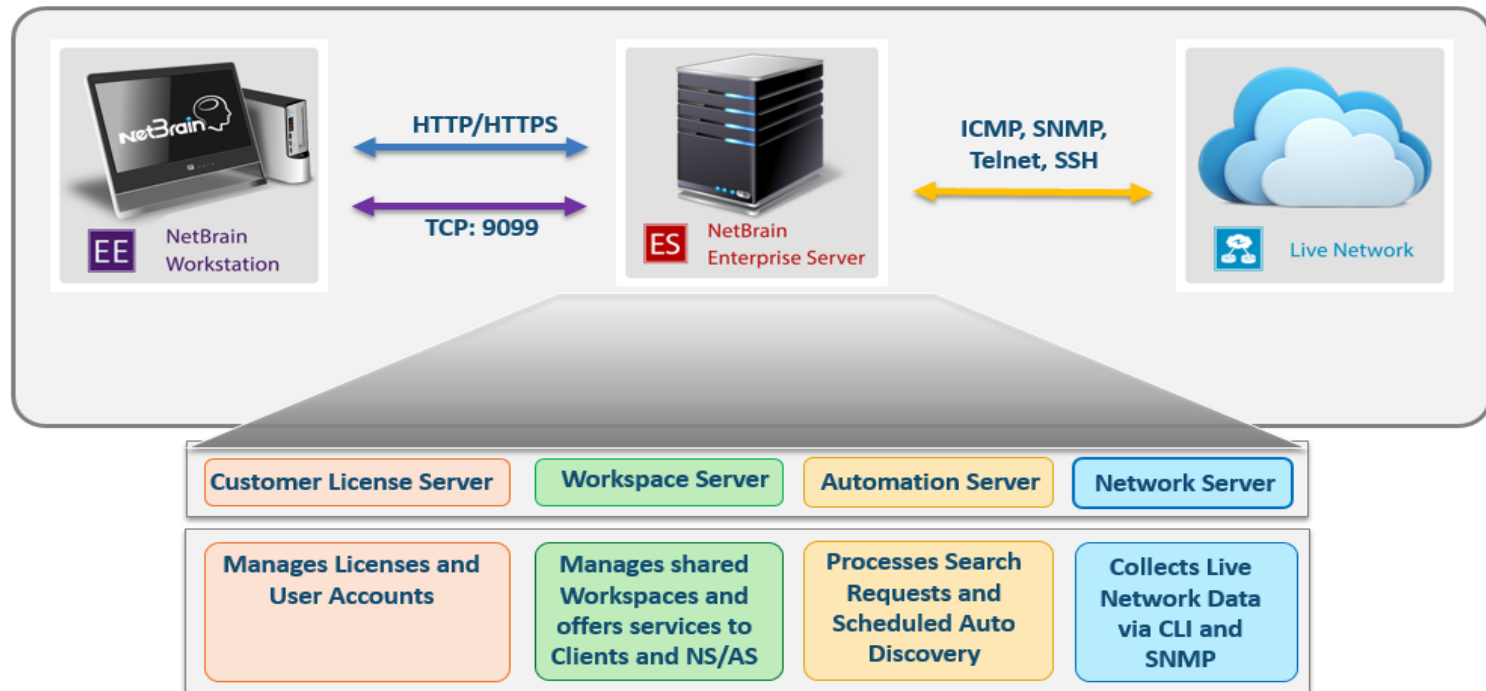
○ Exercise 2 (10 minutes)

○ Class Part III

- » Local vs Shared Device Settings
- » Network Discovery (elementary)

NetBrain EE Deployment

- NetBrain Enterprise Edition (EE) has five components: **Customer License Server**, **Workspace Server**, **Automation Server**, **Network Server** and **Workstation**.
- NetBrain uses the workspace as a virtual environment to emulate the network. The administrator creates and maintains a workspace shared by all Workstation users.



Common Workflow

Search

Search using:

- IP address or device hostname
- Configuration keywords
- Inventory data (e.g. model, serial number, MAC)

Inside the workspace, database, and Visio maps

Map

From the search results:

- Create a dynamic Qmap (L3 and L2) instantly
- Map a LAN Segment
- Map an Application Path

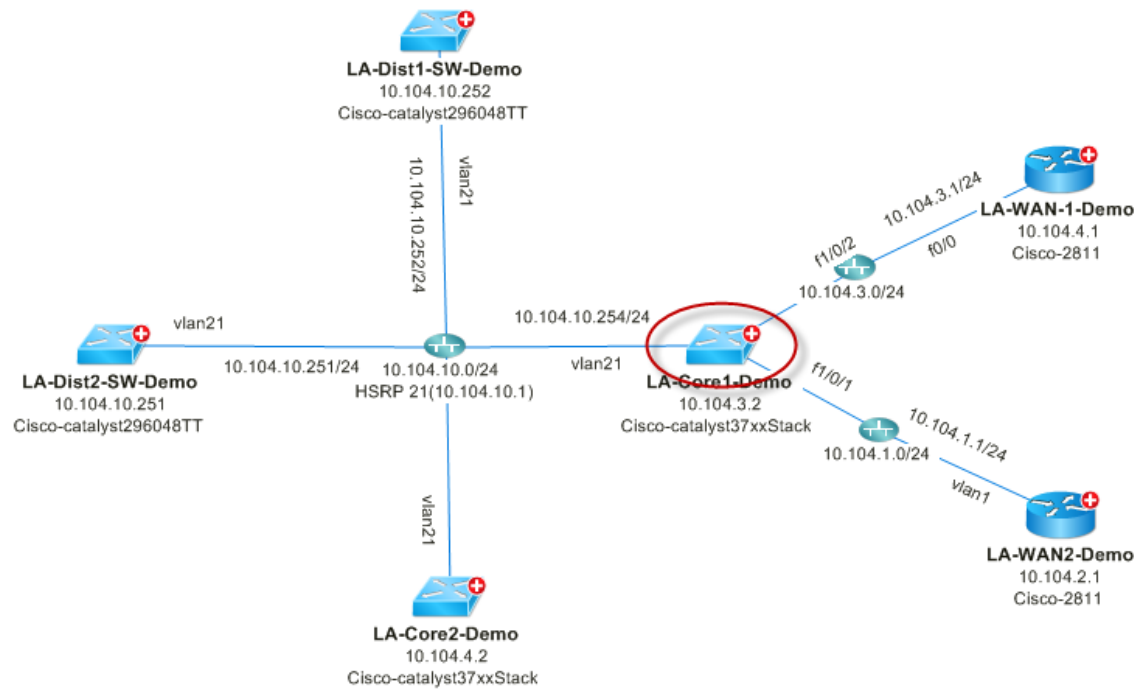
Analyze

Directly from the map:

- Extend the scope of visibility
- Work on a device via Observer
- Work on all devices via the Floating Menu

Create First Qmap

- Search a hostname and create a Qmap for the found device
- Extend L3 neighbors
- Zoom in to view design details and observe all properties of a device



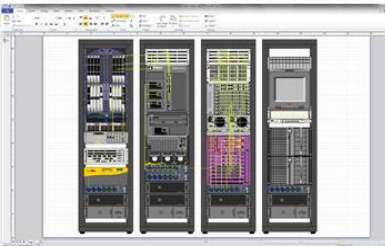
Dive into a Device via Observer Mode

Picture - LA-WAN-Tr



Press Esc to close 1/2

Picture - LA-WAN-Tr



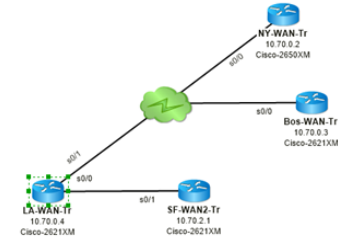
Press Esc to close 2/2

Properties - LA-WAN-Tr

In Site	My Network\Internal Labs\Bost...
Management IP	10.70.0.4
Management Interface	s0/1
Device Type	Cisco Router
Driver	Cisco Router
sysObject ID	1.3.6.1.4.1.9.1.469
Vendor Model	Cisco 2621XM
Software Version	12.3(3i)
Serial Number	JAE0740004K
Asset Tag	
System Memory	41582780
Location	
Contact	

Press Esc to close

Topology - LA-WAN-Tr



Showing 3 out of 3 neighbors

Press Esc to close L3 Page L2 Page

Performance - LA-WAN-Tr

Stop

Availability	Up
CPU	2%
Memory	26%

Interface	Link Error(in)	Link Error(o...	Status	Delay(via Pr...
s0/0			Up	4ms
s0/1			Up	4ms

Press Esc to close

Design - LA-WAN-Tr

- Full Configuration
 - Router
 - All Multicasting Configuration
 - All RIP Configuration
 - Configuration Summary
 - Interface Configuration
 - Routing Configuration
 - Routing Redistribution
 - Traffic Filtering
 - BGP
 - EIGRP
 - ISIS
 - MPLS
 - NAT
 - OSPF
 - Other Routing Protocols
 - Quality of Service
 - VoIP

Press Esc to close Refresh

History - LA-WAN-Tr

1st DataFolder: ::Current Baseline

2nd DataFolder: 2014-05-27 14:45 Over

Compare

Data	Changed
Configuration	-
Route Table	-
ARP Table	-
CDP Table	-
MAC Table	-
STP Table	-

Press Esc to close

Navigator - LA-WAN-Tr

Picture Properties Topology

Design Performance History

Press Esc to close

Map L2 Connections for an IP

- **Objective:** Find and Qmap the IP address of a switch port
- **Use Case:** Block the traffic from a virus infected server

The screenshot displays the NetBrain Qmap interface. On the left, a network diagram shows various devices including ArubaWLC, Bos-ask01-2960-01, Bos-LB-f5-02, Bos-LB-f5-01, PE-ASR1K-01, and Bos-Core-6500. The Bos-Core-6500 device is highlighted with a red dashed box. On the right, a CLI terminal window for Bos-Core-6500 shows the following commands and output:

```
Bos-Core-6500>enable
Password:
Bos-Core-6500#sh ip route
Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       I - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route

Gateway of last resort is not set

    172.16.0.0/26 is subnetted, 2 subnets
      S    172.16.1.64 [1/0] via 10.88.1.5
      S    172.16.1.0 [1/0] via 10.88.1.5
    192.168.20.0/32 is subnetted, 1 subnets
      B    192.168.20.33 [20/0] via 10.88.250.2, 4w3d
    10.0.0.0/8 is variably subnetted, 74 subnets, 7 masks
      B    10.88.255.5/32 [20/0] via 10.88.250.2, 4w3d
      B    10.88.255.1/32 [20/0] via 10.88.250.2, 4w3d
      B    10.88.255.3/32 [20/0] via 10.88.250.2, 4w3d
      B    10.88.255.2/32 [20/0] via 10.88.250.2, 4w3d
      C    10.88.255.21/32 is directly connected, Loopback0
      B    10.88.255.41/32 [20/0] via 10.88.250.2, 4w3d
      C    10.88.0.192/26 is directly connected, Vlan16
      B    10.88.4.128/26 [20/0] via 10.88.250.2, 4w3d

Bos-Core-6500#
```

Now Let's See This in Action



Exercise 1: Search and Create L3/L2 Maps

A. Qmap L3 connections and analyze L3 design for hostname **Sjc-Dist-3750-01**

1. Qmap the device with hostname **Sjc-Dist-3750-01**. (Hint: visual search)
2. Extend all **L3** neighbors of device **Sjc-Dist-3750-01**. (Hint: red plus sign)
3. View the routing protocol configured on any interface of the **Sjc-Dist-3750-01** and annotate its configurations on map. (Hint: **zoom** → hover data → click icon to **Display on Current Map**)
4. View detailed properties of the device **Sjc-Dist-3750-01** via Observer. (Hint: hover device → zoom in → green brackets → **Observer**)
5. Observe the performance of the device **Sjc-Dist-3750-01**. (Hint: scroll **Observer** cards → **Performance card** → **Start**)

B. Qmap L2 connections and analyze L2 design for IP address **10.88.11.22**

1. Search and Qmap L2 device. (Hint: select **L2** neighbor)
2. Qmap all L2 connections of device **Sjc-Core-3560x-02**
3. Extend neighbors and annotate the switch port **g0/24**
4. View detailed properties of the device **Sjc-Core-3560x-02**
5. Change the Layout Style. (Hint: right-click Qmap → **Auto Layout**, up/down arrow for device allocation → **Layout Style** → **OK**)

Login to server class.netbraintech.com:80 (NOT trial.netbraintech.com)

Guest login: netbrain123/netbrain123

Common Troubleshooting Workflow

Search

- IP address or hostname of a problematic device
- Configuration keywords such as static route
- Two end points to discover the path between them

Map

- Create a dynamic Qmap (L3 and L2) instantly

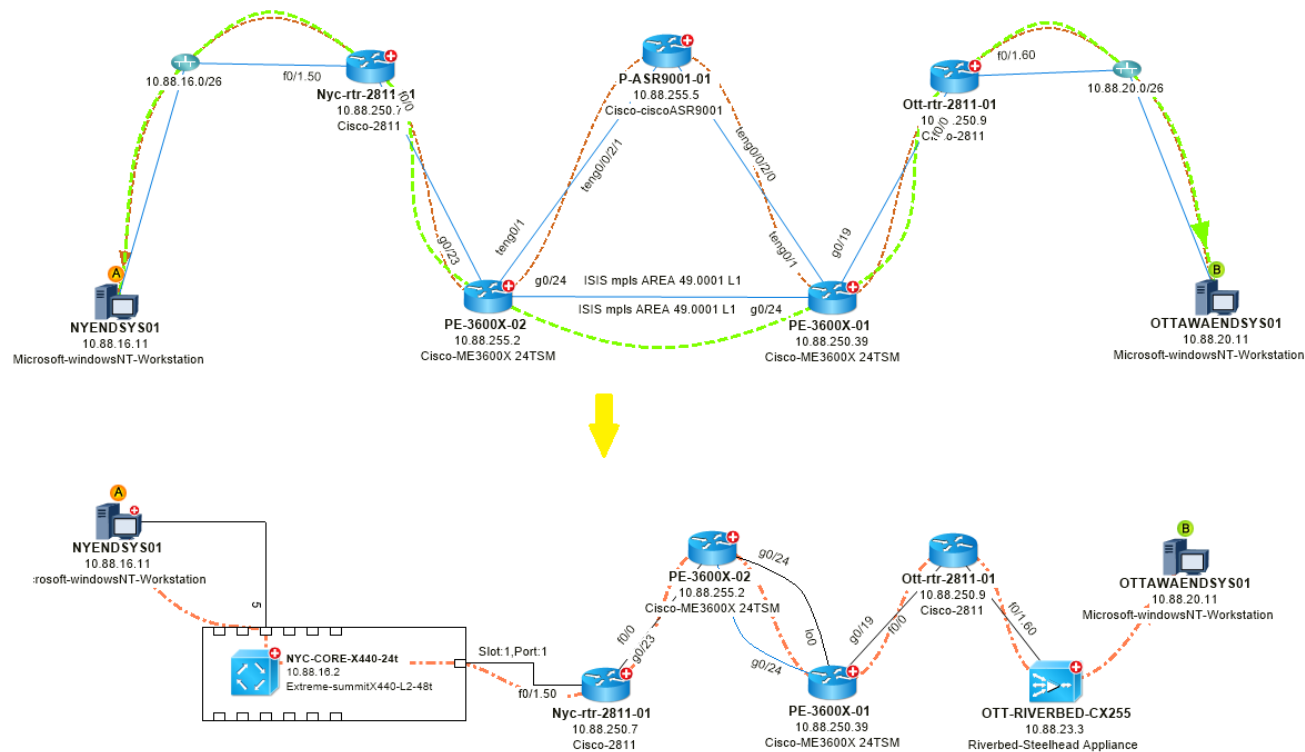
Analyze

- **Probe** the network (monitor Qapps)
- **Compare** historical data with current data
- **Drill down** with Qapps, Execution Procedure, IP SLA and NetFlow

Directly from the Qmap

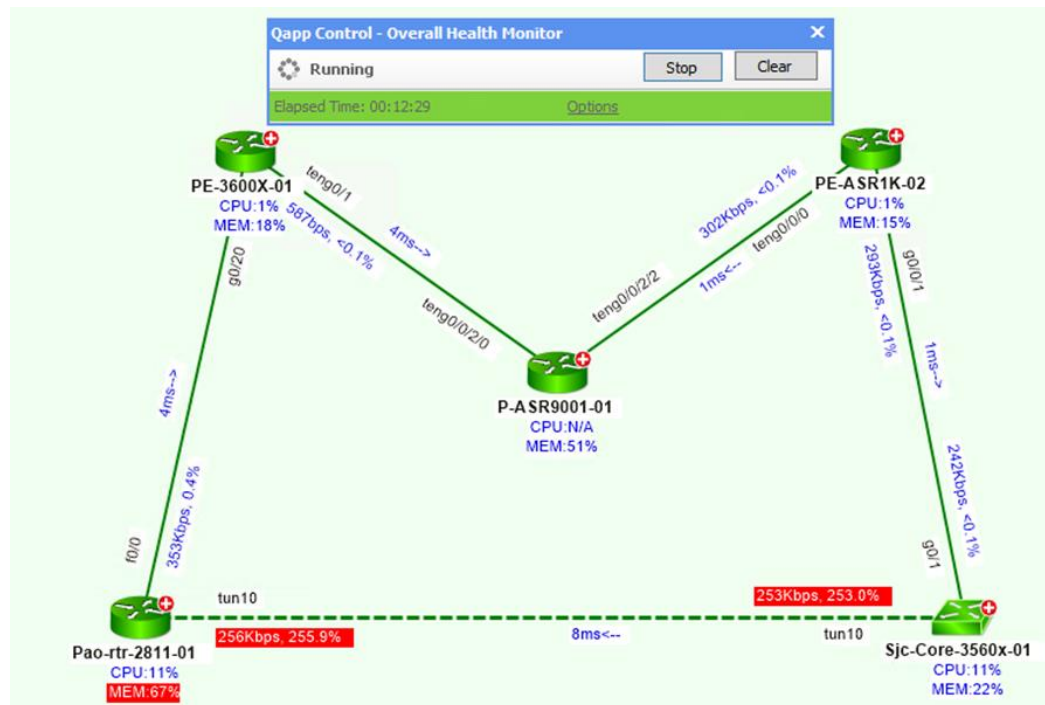
Qmap Application Path

- **Objective:** Discover and Qmap the application path (L3 & L2) between two end points
- **Use Case:** Troubleshoot application slowness and Document critical applications



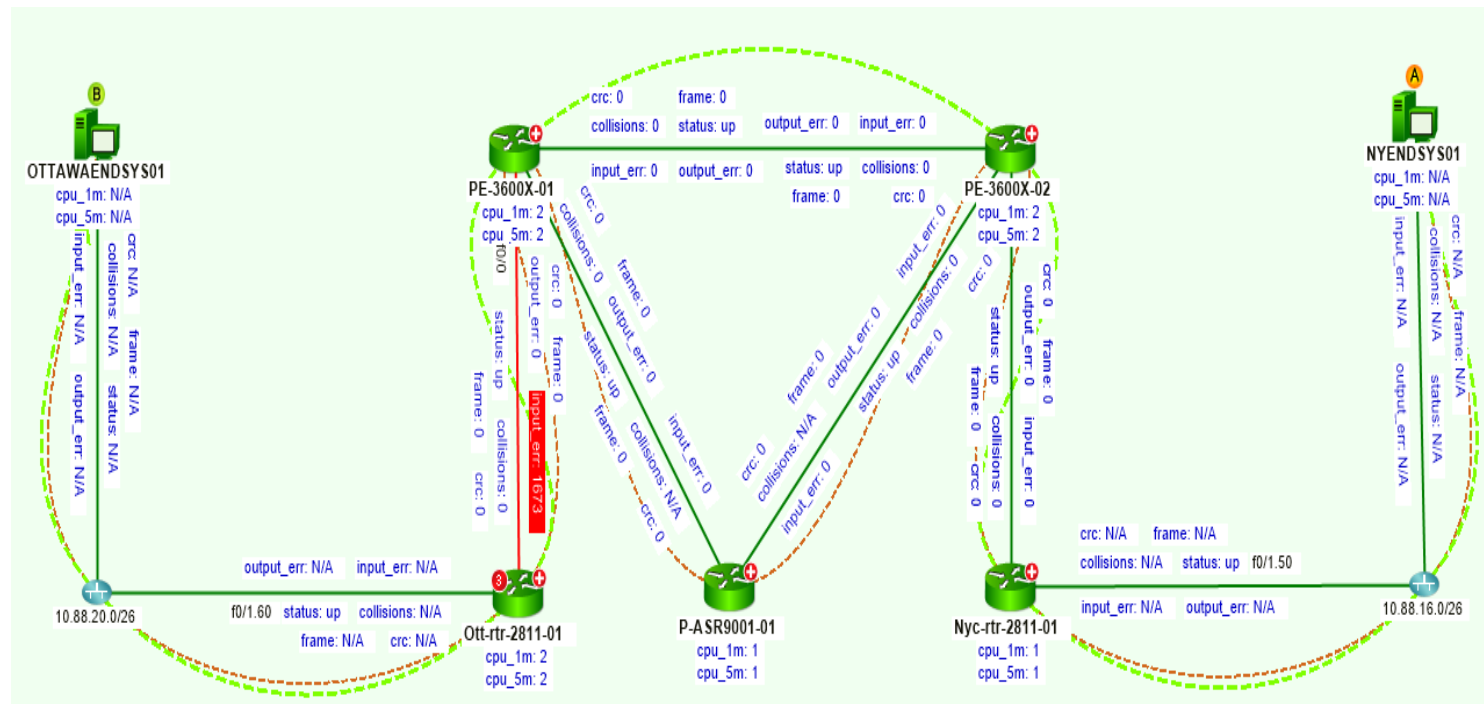
Probe the Live Network

- Visualize the device/interface status and performance data on the Qmap
- Identify a down/unstable device or interface
- Identify any interfaces with high bandwidth or devices with high CPU or memory usage



Monitor Data from a CLI Command via Qapp

- **Objective:** Monitor the L2 Qmap for factors such as interface errors
- **Use Case:** Identify any interfaces with input errors, CRC, collisions or switching errors



Exercise 2: Qmap and Probe

A. Qmap and Monitor an Application Path

1. Discover and Qmap the live roundtrip path between 10.88.16.11 and 10.88.1.11. (Hint: **Traffic Path** → select roundtrip option)
2. Qmap the L2 connections along the path from the L3 Qmap. (Hint: right click path → click the **View L2 Path**)
3. Monitor devices and interfaces along the L3 path. (Hint: Floating Menu → **Monitor** → **Overall Health Monitor**)
4. Monitor Interface errors along the L2 path. (Hint: Floating Menu → **Monitor** → **Monitor Qapps** → **Monitor Intf errors**)

Now Let's See This in Action



Live Network Settings

Live network settings include username/password pairs, enable passwords, SNMP RO strings, Jumpboxes and Network Servers

- Username/password pairs and enable passwords are used to Telnet/SSH to devices and retrieve live data.
- SNMP RO strings are used to access devices via SNMP. Monitoring and discovering devices require SNMP RO strings.
- NetBrain also supports telnet/SSH to network devices via a Jumpbox.

The image shows two overlapping windows. The top window is a terminal session with the following text:

```
Trying 40.40.40.40...
Connected to 40.40.40.40.
Escape character is '^]'.

User Access Verification

Username: nb
Password:
LA_server>enable
Password:
LA_server#
LA_server#
```

Red boxes and arrows highlight the 'Username: nb' and 'Password:' lines, with a label 'Username/password' pointing to them. Another red box and arrow highlight the 'Password:' line after the 'enable' command, with a label 'enable password' pointing to it.

The bottom window is a configuration editor titled 'Device Configuration(Bos-Core-6500)'. It shows a configuration file with the following relevant lines:

```
801 | sort-by packets
802 | cache-timeout 10000
803 | !
804 | no ip http server
805 | no ip http secure-server
806 | ip pim bsr-candidate Loopback0 0
807 | ip pim rp-candidate Loopback0
808 | ip mshp peer 10.88.255.5 connect-source Loopback0 remote-as 64550
809 | ip mshp cache-sa-state
810 | ip mshp originator-id Loopback0
811 | !
812 | !
813 | snmp-server community nbITE RO
814 | snmp-server community
815 | !
816 | !
817 | control-plane
818 | !
819 | !
820 | dial-peer cor custom
821 | !
822 | !
823 | !
824 | !
825 | line con 0
826 | logging synchronous
827 | line vty 0 4
```

Live Network Discovery

- Discover your Live Network from a seed device. NetBrain's neighbor-walking algorithm discovers neighbor devices from routing and CDP/LLDP tables
- The system retrieves device info by SNMP and collects data such as configurations and routing table via CLI show commands

The screenshot displays the 'Live Network Discovery' window. At the top, there are two radio buttons: 'Discover via Seed Routers' (selected) and 'Scan IP Range'. Below them is a text input field containing '10.88.255.21' and a 'Select Device' button. A hint text below the input field reads 'e.g: 10.10.10.1;NY_R1'. There is also an 'Import IP List' button. Below the input field, there is a 'Stop' button, a dropdown menu set to 'Telnet/SSH and SNMP', and 'Network Settings' and 'Options' buttons. The main section is titled 'Discovered devices' and contains a table with the following columns: IP Address, Discover from, Ping, SNMP, Hostname, Device Type, Vendor, and Model. The table lists several devices, including Cisco IOS switches, Cisco ASA firewalls, Cisco Routers, and Aruba WLCs. Below the table is a 'Blocked Interfaces List' section with a log of actions such as 'Sending "exit" command', 'Telnet to [10.88.255.21] Disconnected', and 'Add Bos-Core-6500 successfully'. At the bottom, there is a status bar showing 'Discover Live Network' and 'Elapsed time: 00:00:47', followed by a summary of the discovery process: 'Discovering [10.88.3.10]; discovered 28 IP Address(es), found 20 device(s) within 00:00:47. Successfully discovered: Aruba LWAP:1, Aruba WLC:1, Cisco ASA Firewall:1, Cisco IOS Switch:5, Cisco IOS XR:1, Cisco Nexus Switch:1, Cisco Router:7, Cisco WLC:1, Juniper SRX Firewall:1, LWAP:1. Build L3/L2 Topology is Pending.'

IP Address	Discover from	Ping	SNMP	Hostname	Device Type	Vendor	Model
10.88.255.21	via 10.88.25...	Succeeded	nbITE	Bos-Core-6500	Cisco IOS S...	Cisco	catalyst65xx...
10.88.1.5	via 10.88.25...	Failed					
10.88.0.65	via 10.88.25...	Succeeded	nbITE	Bos-FW-ASA/act	Cisco ASA Fi...	Cisco	ASA5505
10.88.243.2	via 10.88.25...	Succeeded	nbITE	Pao-rtr-2811-01	Cisco Router	Cisco	2811
10.88.250.2	via 10.88.25...	Succeeded	nbITE	PE-ASR.1K-01	Cisco Router	Cisco	ASR.1K
192.168.0.23	via 10.88.25...	Failed					
10.88.3.12	via 10.88.25...	Succeeded	nbITE	Bos-Dist-Nex5k-01	Cisco Nexus ...	Cisco	5548UP
10.88.250.220	via 10.88.25...	Failed					
10.88.1.132	via 10.88.25...	Succeeded	nbITE	NBITE_ArubaWLC	Aruba WLC	Aruba	3200
10.88.3.15	via 10.88.25...	Succeeded	nbITE	ITE_WLC	Cisco WLC	Cisco	AirCt2504K9
10.88.0.196	via 10.88.25...	Succeeded	nbITE	Bos-Dist-Nex5k-02	Cisco Nexus ...	Cisco	5548UP

Now Let's See This in Action



Class Outcomes

- **Understand common workflow (SMA)**
 - » Every network task starts with search and Qmap
 - » Search the hostname or IP address of a device and Qmap its L2/L3 connections
 - » Observe all properties of a device via Observer
 - » Visualize the network design from the Qmap's Floating Menu
- **Map and Analyze the network from a Qmap**
 - » Qmap an application path
 - » Probe the Live Network
 - » Monitor via Qapp
- **Discover a network in the local workspace**

Thank You and See You Again

Ready to learn more? Check our [Live Web Training Catalog](#) for all classes and dates. Course preview below:

End User Classes:

1. **NetBrain for Beginners**
2. **Dynamic Documentation**
3. **Visual Troubleshooting**
4. **Automated Change Management**
5. **Routing Analysis & Troubleshooting**

Power User Classes:

1. **Network Automation with Qapp – Fundamentals**
2. **Network Automation with Qapp – Building Parsers**
3. **Network Automation with Qapp – Customization with Qapp Editor**

Administrator Classes:

1. **Setup & Discovery**
2. **Workspace Management**

Need Help?

Contact us at 781-221-7199 or education@netbraintech.com



Thank you

Q&A – 30 minutes

NetBrain Technologies
15 Network Drive
Burlington, MA 01803

+1 800.605.7964
education@netbraintech.com
www.netbraintech.com

