Intermediate Packet Tracer

Glenn Wright
Intermediate Packet Tracer

Agenda

- Using the CLI Mode
- Using Packet Tracer Activities
- Viewing PDUs
- Using the Wizard to Build Activities

Hands-on Activities

- Using Packet Tracer Activities
- Building an activity Using the Wizard
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Using the CLI Mode
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Using the CLI Mode

- The CLI mode in Packet Tracer allows a wide variety of commands to be entered
- It provides for advanced configuration of devices
- Any supported Packet Tracer Cisco IOS commands may be entered in the CLI mode
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Using Packet Tracer Activities
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Using Packet Tracer Activities

- Packet Tracer comes with a number of prebuilt activities
- The activities are divided into groups by course and then by skill
- The activities provide the user with a set of instructions for completing the task
- Upon completion the user is provided feedback
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Using Packet Tracer Activities

- Packet Tracer activity files may be accessed by going to the File menu and selecting Open
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Using Packet Tracer Activities

- Packet Tracer activity files may also be accessed through the Program Files folder
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Using Packet Tracer Activities

- Packet Tracer also provides Word documents that may be printed out for each activity file.
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Using Packet Tracer Activities

- Sample of Word documents from an activity file
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Using Packet Tracer Activities

- Activities are password protected to keep users from modifying them
- However, instructors may wish to edit an activity to make a correction or create a new activity
- To access an activity file for editing, open the desired file and then go to the File menu and select Activity Wizard
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Using Packet Tracer Activities

- When prompted for a password, enter one of the following:
  - discovery1
  - discovery2
  - discovery3
  - discovery4
  - PT_user! (used for Exploration)
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Viewing PDUs
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Viewing PDUs

- The Simulation mode provides the user with an Event List of each PDU that was sent

- The list shows each device the PDU interacted with in route to the destination
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Viewing PDUs

- A wealth of information may be obtained from viewing the individual PDUs
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Viewing PDUs

1. The PDU Information at Device: PC0
   OSI Model: | Outbound PDU Details |
   At Device: PC0
   Source: PC0
   Destination: PC1

   **In Layers**
   - Layer 7
   - Layer 6
   - Layer 5
   - Layer 4
   - Layer 3
   - Layer 2
   - Layer 1

   **Out Layers**
   - Layer 7
   - Layer 6
   - Layer 5
   - Layer 4
   - Layer 3
   - Layer 2
   - Layer 1

   Layer 3: IP Header
   Source IP: 192.168.1.2
   Dest IP: 192.168.3.2
   ICMP Message Type: 8

   Layer 2: Ethernet II Header
   0005.5E66.883C >>
   0090.2164.D155

   Layer 1: Port(s): FastEthernet

   **Challenge Me**
   << Previous Layer  Next Layer >>
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Viewing PDUs
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Viewing PDUs

- This information was obtained from viewing just one PDU as it interacted with one device.
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Viewing PDUs

- Besides providing a wealth of information, viewing the PDUs is also helpful in troubleshooting
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Using Wireless Devices
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Using Wireless Devices

- Packet Tracer has two wireless devices that may be added to networking scenarios

Access Points

Access Point-PT
Access Point0

Linksys-WRT300N

Linksys-WRT300N
Wireless Router0
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Using Wireless Devices

- The access points have configuration settings
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**Using Wireless Devices**

- The Linksys WRT300N has three view modes:
  - Physical
  - Config
  - GUI
- Note the physical mode (shown in this graphic) does not have any items that can be changed.
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Using Wireless Devices

- The Config tab offers two general levels of configuration: Global and Interface

- The Global Settings only allow the user to change the display name of the device
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Using Wireless Devices

- The Interface level allows the user to configure the available interfaces
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Using Wireless Devices

- The **GUI** tab offers the same configurations and settings as the **Config** tab with some additional features for port forwarding, management, and router and network status.

- Make sure you click on the **Save Settings** button at the bottom to apply the new settings to the Linksys WRT300N.
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Using Wireless Devices

- When using a wireless device, the client PC must have a wireless module installed in order to connect.
- If security is set on either device, the settings must match.
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Creating Custom Devices
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Creating Custom Devices

- Users can create custom devices with different module configurations pre-installed
- Steps to build a custom device:
  - Build the device with all the modules you need installed
  - Click Custom Device Dialog in the tool bar
  - Click Select
  - Click on the device you built and wish to use as a template
  - Enter the device name and description in the Device Template manager window
  - Click add when finished
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Creating Custom Devices

- Once a custom device has been created, it will be available for future use
- To access the new device, click on the Custom Device icon in the **Device-Type Selection Box** (1)
- Then click on the desired device (2)
- The custom device name will appear in the **Device-Specific Selection** (3)
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Creating Custom Devices

- You can create a custom device out of any of the available devices
- Using custom devices can save time in building activities
- You might think about creating a custom device for the type of router you use the most, wireless PCs, or WAN emulation clouds
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Using the Wizard to Build Activities
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Using the Wizard to Build Activities

- The Activity Wizard in Packet Tracer allows the user to create activities that are complete with instructions, a criteria for determining completeness of the activity, and provide feedback to the activity user.

- This is a great tool for giving users additional practice on configuring devices and troubleshooting the network design.

- It is also an excellent tool for assessing the user’s skills.
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Using the Wizard to Build Activities

- The Activity Wizard may be accessed by clicking on the file menu and then selecting Activity Wizard
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Using the Wizard to Build Activities

- Information about using the Activity Wizard and other Packet Tracer features may be obtained by clicking on the Help menu and selecting contents.
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Packet Tracer 5.0 Overview
Ten PT 5.0 Talking Points

- PT 5.0 is **FREE** for all Academy students and instructors
- PT 5.0 is a powerful tool for network **MODEL** building
- PT 5.0 is not a replacement for **REAL** equipment and Wireshark
- PT 5.0 **SIMULATION** mode offers powerful visualizations
- PT 5.0 **PHYSICAL** mode offers context
- PT 5.0 has most of the important CCNA-level **PROTOCOLS**
- PT 5.0 runs on more **PLATFORMS** like Vista and Linux
- PT 5.0 has a **MULTI-USER** feature; it is a network application
- PT 5.0 has an improved **ACTIVITY WIZARD** – please try it!
- Please **SHARE** your insights, activities, tutorials, and feedback
- **BONUS**: API, External Applications, Portal in near future
The Evolution of PT5.0 – What’s New

- **Expanded platform support**
  
  Now runs on Windows (WinXP, Win2k), Vista (Vista Basic, Vista Premium), and
  
  Linux (Ubuntu, Fedora)

- **Enhanced protocol support**
  
  Expanded list of protocols to reflect current networking trends and practices in industry and government
  
  More support for teaching CCNA-level commands
  
  Deeper modeling for existing protocols

- **Multiuser functionality**
  
  From individual to social learning
  
  PT 5.0 is now a network-capable (peer to peer) application

  Instead of students working alone, PT 5.0 supports collaboration, competition, remote instructor-student interaction, social networking, gaming
Protocols Modeled:

Protocols are a good way to describe a simulator’s power

- HTTP, TFTP, Telnet, SSH, DNS, DHCP
- TCP and UDP
- IPv4, ICMP, ARP, IPv6, ICMPv6
- RIPv1/v2/ng, Multi-Area OSPF, EIGRP, Static Routing, Route Redistribution, Multilayer switching
- Ethernet (802.3), HDLC, Frame Relay, PPP
- STP, RSTP, VTP, DTP, CDP, 802.1q, PAgP
- 802.11
Multi-user Collaboration and Competition

3 different classes

3 students from home
## Activity Results

Congratulations Guest! You completed the activity.

<table>
<thead>
<tr>
<th>Assessment Items</th>
<th>Status</th>
<th>Points</th>
<th>Component(s)</th>
<th>Feedback</th>
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</thead>
<tbody>
<tr>
<td>Network</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PC0</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Default Gateway</td>
<td></td>
<td></td>
<td>Gateway Config, Network Config</td>
<td></td>
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<tr>
<td>FastEthernet</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IP Address</td>
<td></td>
<td></td>
<td>Network Config</td>
<td></td>
</tr>
<tr>
<td>Link to Switch0</td>
<td></td>
<td></td>
<td>Topology Creation</td>
<td></td>
</tr>
<tr>
<td>Connects to FastEthernet0/1</td>
<td></td>
<td></td>
<td>Topology Creation</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>Correct</td>
<td>2</td>
<td>Topology Creation</td>
<td></td>
</tr>
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<td>Subnet Mask</td>
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<td></td>
<td>Network Config</td>
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<td></td>
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<tr>
<td>FastEthernet0/0</td>
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<td></td>
<td>Topology Creation</td>
<td></td>
</tr>
<tr>
<td>Link to Switch0</td>
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<td>Topology Creation</td>
<td></td>
</tr>
<tr>
<td>Connects to FastEthernet0/2</td>
<td></td>
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<td>Topology Creation</td>
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<tr>
<td>Type</td>
<td>Correct</td>
<td>2</td>
<td>Topology Creation</td>
<td></td>
</tr>
</tbody>
</table>

### Observable Meta-Data

(ontology)

### Binary Weights

Evidence Weights

Paths

### Observable level Diagnostic Feedback

Possible

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**Total Points**: 19

**Completed Items**: 7

**Required Items**: 7

- Topology: Completed: 4/4, Points: 6
- Network: Completed: 3/3, Points: 3
- Config: Completed: 1/1, Points: 10
## Impact Summary of New PT 5.0 Features

<table>
<thead>
<tr>
<th>Additional Platforms</th>
<th>On Students</th>
<th>On Instructors</th>
<th>On Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to run PT on more operating systems, supports more out of classroom environments</td>
<td>Ability to run PT on more operating systems both in and out of classroom</td>
<td>Improved support for authoring on more operating systems</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>More Protocols</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Free practice and visualization environment for crucial networking technologies</td>
<td>Ability to use PT to teach more topics (like IPv6)</td>
<td>Improved support for creating CCNA-level curriculum and assessments</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>New Multiuser Feature</th>
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</thead>
<tbody>
<tr>
<td>More collaboration, competition, and fun</td>
<td>More support for social learning processes</td>
<td>More instructional design possibilities</td>
</tr>
</tbody>
</table>
Q and A

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Hands-on Activities