

# 1.2 Why Network Automation

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# Why Network Automation

- ▶ Make changes faster with reliable outcome.
- ▶ More Scalable
- ▶ Network and Business Agility with less vendor lock-in
- ▶ Deliver business results



# Next: Why Ansible?



# Course Objectives

Introduce Ansible from Beginning  
“Up and Running” with Network Devices  
Save Time + Be More Productive




# Why Ansible?


Ansible has thousands of users, hundreds of customers and over 2,400 community contributors

600+	29,000+	230+
ANSIBLE MODULES	GITHUB STARS	MEETUPS WORLDWIDE

[JOIN OUR COMMUNITY](#)




*“ The work the Ansible team is doing... is something the entire industry should be paying attention to.*




Lew Tucker  
VP & CTO, Cloud Computing  
**Cisco**

[OpenStack Integration](#)



*“ Red Hat Ansible Tower allows us to easily streamline the delivery of applications and services to both OpenStack & Amazon Clouds in a cost effective, simple, & secure manner.*



Jeremy Pruitt  
Cloud & Automation  
**Juniper**

[IT Automation with Ansible Tower](#)

Credit: <https://www.ansible.com/>

# Course Overview

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- ▶ Hands-On, Lab-Based
- ▶ Installation to Up and Running
- ▶ Variables, Inventory, Playbooks, etc.
- ▶ Demonstration with Cisco, Arista, Juniper devices
- ▶ Write your own Module

Come Join me to save time and be more  
productive as Network Engineers!

# OSPF Configuration Workflow

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- ▶ Configure Basic OSPF
- ▶ Verifying OSPF Adjacencies
- ▶ Verifying the OSPF Database



# Tracking Topology Changes

▶ When a new LSA is received it is checked against the database for changes such as...

- Sequence number is used to:
  - track new vs old LSAs
- Age is used to:
  - Keep information new
  - Withdraw old information
    - Periodic flooding occurs after 30 minutes
      - “paranoid” update
  - LSAs that reach MaxAge (60 minutes) are withdrawn
- Checksum
  - Used to avoid transmission & memory corruption

# Tracking Topology Changes

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  - Sequence number
  - Age
    - Used to keep information new
    - Withdraw old information
      - Periodic flooding occurs after 30 minutes
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# Tracking Topology Changes

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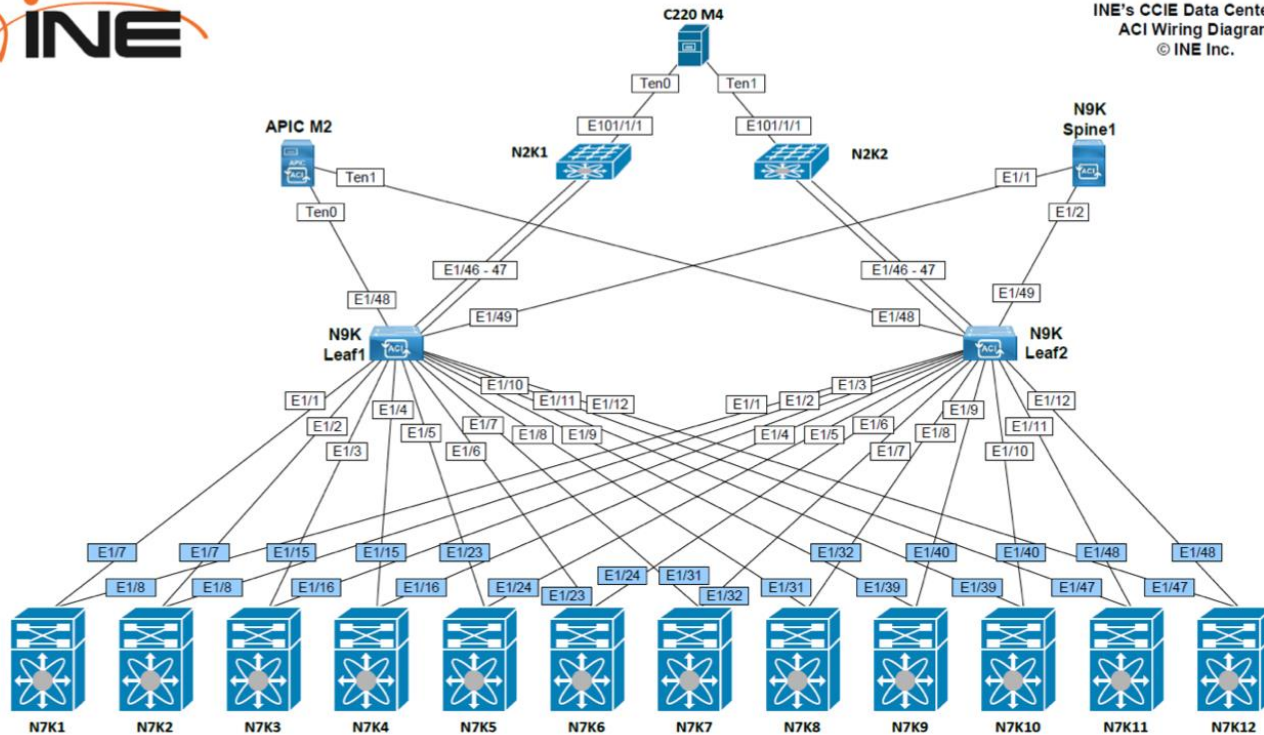
- ▶ When a new LSA is received it is checked against the database for changes such as...
  - Sequence number
  - Age
    - Used to keep information new and withdraw old information
    - Periodic flooding occurs after 30 minutes
    - LSAs that reach MaxAge (60 minutes) are withdrawn
  - Checksum
    - Used to avoid transmission & memory corruption

# Tracking Topology Changes

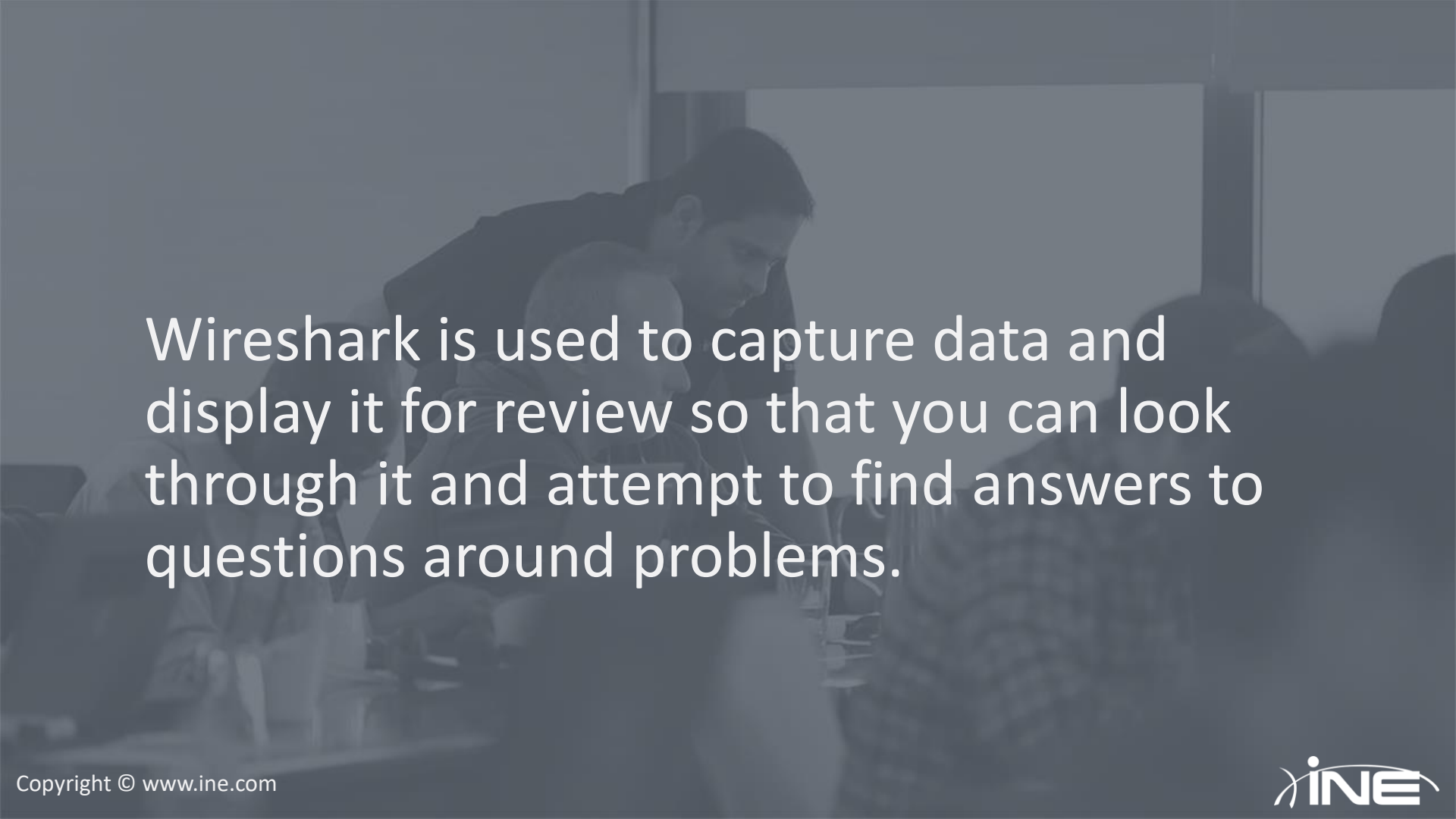
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- Sequence number
- Age
- Checksum



# Product/Topology Diagram



Wireshark is used to capture data and display it for review so that you can look through it and attempt to find answers to questions around problems.