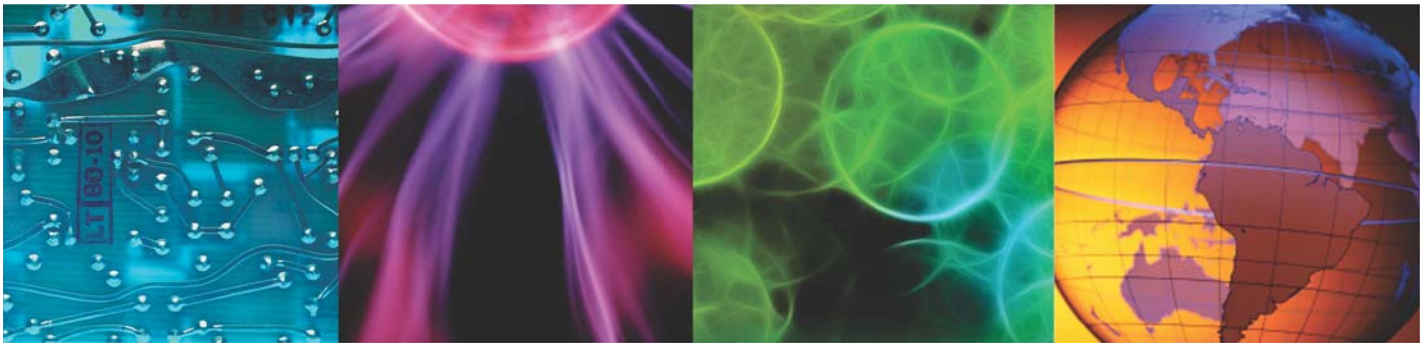
IBM Training

# IBM Security QRadar SIEM Foundations

**Student Notebook**

Course code BQ102 ERC 1.0

January 2015



**IBM Security Systems**

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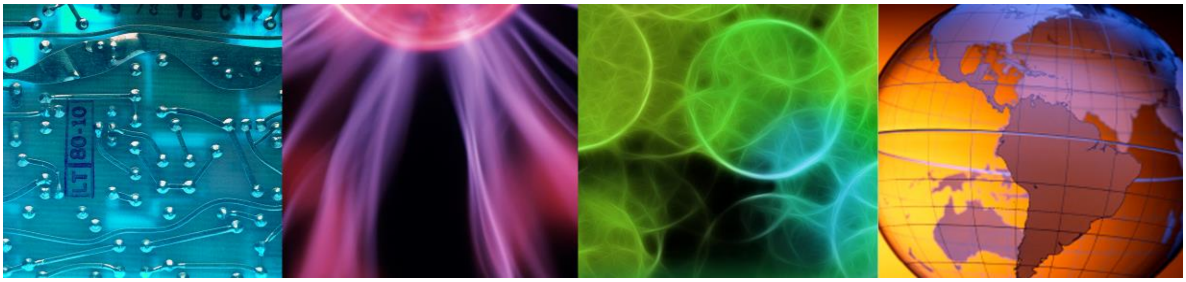
# Contents

# About this course

## IBM Security QRadar SIEM Foundations



IBM Security QRadar SIEM provides deep visibility into network, user, and application activity. It provides collection, normalization, correlation, and secure storage of events, flows, assets, and vulnerabilities. QRadar SIEM classifies suspected attacks and policy breaches as offenses.

In this two-day course, you learn how to perform the following tasks:

- Describe how QRadar SIEM collects data to detect suspicious activities
- Navigate and customize the QRadar SIEM dashboard
- Investigate suspected attacks and policy breaches
- Search, filter, group, and analyze security data
- Investigate the vulnerabilities and services of assets
- Locate custom rules and inspect actions and responses of rules
- Use QRadar SIEM to create customized reports
- Use charts and apply advanced filters to examine specific activities in your environment

Using the skills taught in this instructor-led classroom course, you will be able to use QRadar SIEM to investigate threats and attacks, and configure the appropriate responses for your organization.

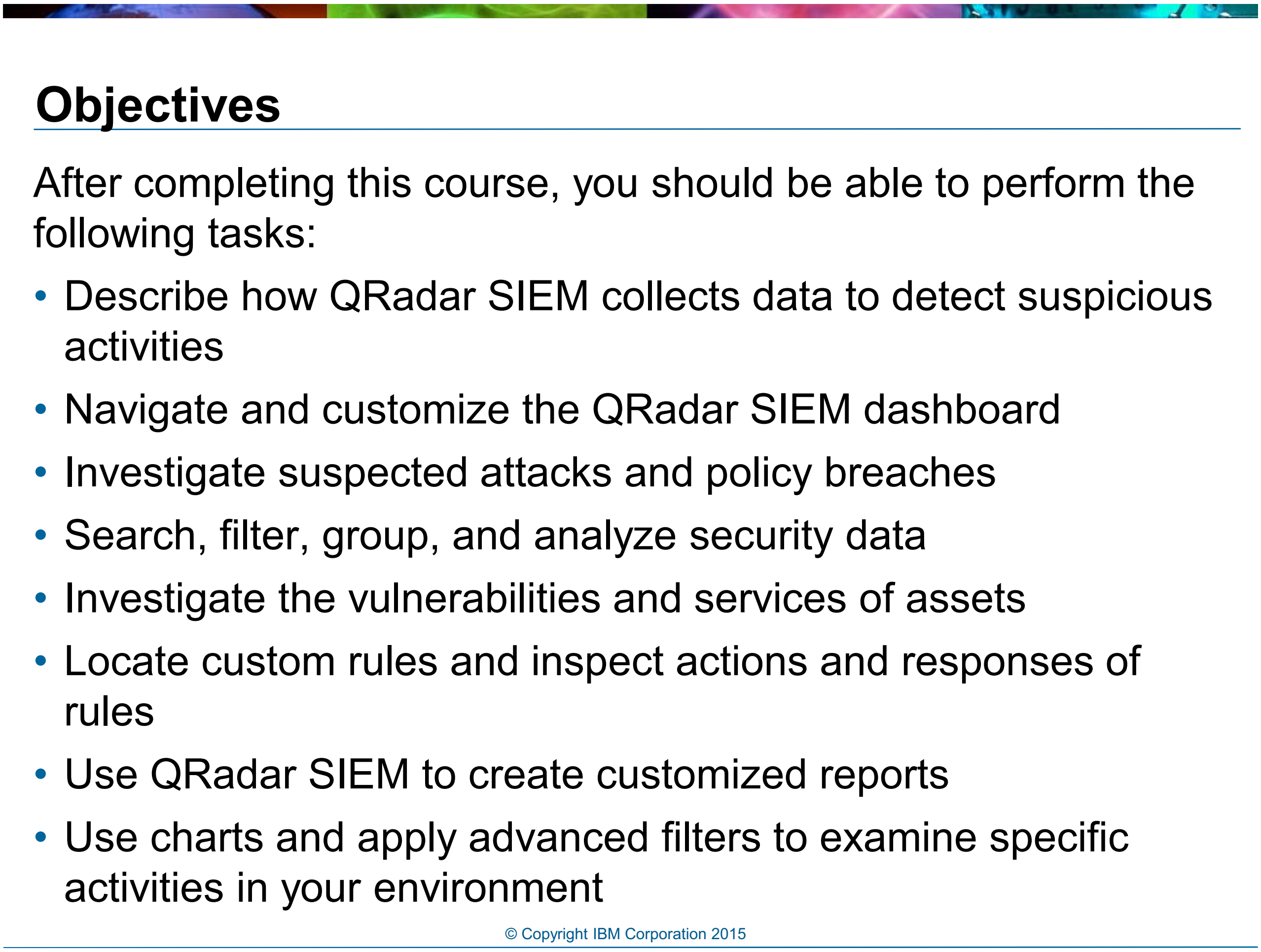
| Course properties | Details |
|---|---|
| **Delivery method** | Classroom or instructor-led online (ILO) |
| **Course level** | ERC 1.0 |
| | This course is an update of the following previous course:<br>• BQ101: IBM Security QRadar SIEM 7.2 Foundations ERC1.0 |
| **Product and version** | IBM Security QRadar SIEM 7.2.3 |
| **Duration** | Two days |
| **Skill level** | Basic |

# About the student

This course is designed for security analysts, security technical architects, offense managers, network administrators, and system administrators using QRadar SIEM. Before taking this course, make sure that you have the following skills:

- IT infrastructure
- IT security fundamentals
- Linux
- Windows
- TCP/IP networking
- Syslog

# Learning objectives



## Objectives

After completing this course, you should be able to perform the following tasks:

- Describe how QRadar SIEM collects data to detect suspicious activities
- Navigate and customize the QRadar SIEM dashboard
- Investigate suspected attacks and policy breaches
- Search, filter, group, and analyze security data
- Investigate the vulnerabilities and services of assets
- Locate custom rules and inspect actions and responses of rules
- Use QRadar SIEM to create customized reports
- Use charts and apply advanced filters to examine specific activities in your environment

# Course agenda

The course contains the following units:

1. Introduction to IBM Security QRadar SIEM

   This unit provides a high-level description of the purpose and capabilities of the QRadar SIEM licensed program.

2. How QRadar SIEM collects security data

   QRadar SIEM collects and processes the event data and vulnerability assessment data that is gathered by the systems in your network. This unit provides a high-level description of how QRadar SIEM collects data and performs vulnerability assessment.

3. Using the QRadar SIEM dashboard

   QRadar SIEM displays the Dashboard tab when you sign in. Multiple items on a dashboard display information about activities of systems in your network. The items enable you to focus on specific areas of interest such as security or network operations. You can customize each dashboard to meet the needs and responsibilities of the analyst. This unit teaches you how to navigate and customize the dashboard tab.

4. Investigating an offense that is triggered by events

   QRadar SIEM correlates events and flows into an offense if it assumes suspicious activity. This unit teaches you how to investigate the information that is contained in an offense and respond to an offense.

5. Investigating the events of an offense

   The investigation of an offense usually leads to the investigation of the events that contributed to the offense. This unit teaches you how to find, filter, and group events in order to gain critical insights about the offense. You also learn how to create and edit a search that monitors the events of suspicious hosts.

6. Using asset profiles to investigate offenses

   QRadar SIEM stores security-relevant information about systems in your network in asset profiles. This unit teaches you how asset profiles are created and updated, and how to use them as part of an offense investigation.

7. Investigating an offense that is triggered by flows

   QRadar SIEM correlates flows into an offense if it determines suspicious activities in network communications. This unit teaches you how to investigate the flows that contribute to an offense. You also learn how to create and tune false positives and investigate superflows.

8. Using rules and building blocks

   Rules perform tests on the events, flows, and offenses in QRadar SIEM and respond if the test criteria is met. A building block is a rule without a response that is used as a common variable in multiple rules or to build complex rules. This unit teaches you how to find custom rules in the QRadar SIEM console and how to assign actions and responses to the rule. You also learn how to configure rules.

9. Creating QRadar SIEM reports

   Reports allow you to examine trends and statistical views on your network for various purposes, in particular to meet compliance requirements. This unit teaches you how to generate a report using a predefined template and create a report template.

10. Performing advanced filtering

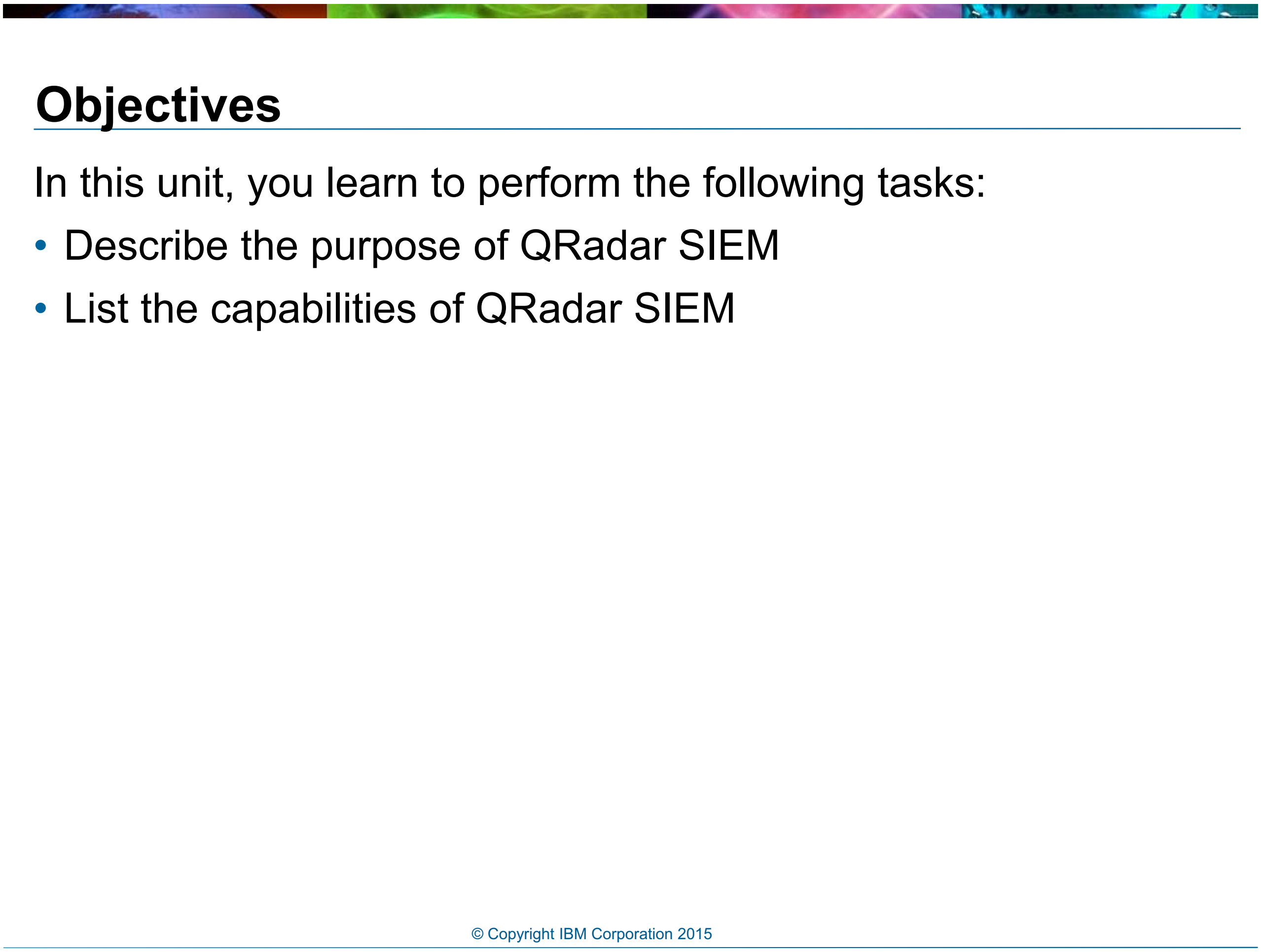
    QRadar SIEM provides several filters that you can apply to identify suspicious or non-standard behavior. Bar, pie, table, and time-series charts visualize security data. This unit teaches you how to use charts and apply advanced filters to examine specific activities in your environment.

# 1 Introduction to IBM Security QRadar SIEM

## Introduction to IBM Security QRadar SIEM

This unit provides a high-level description of the purpose and capabilities of the QRadar SIEM licensed program.

This unit has no student exercises.



## Objectives

In this unit, you learn to perform the following tasks:

- Describe the purpose of QRadar SIEM
- List the capabilities of QRadar SIEM

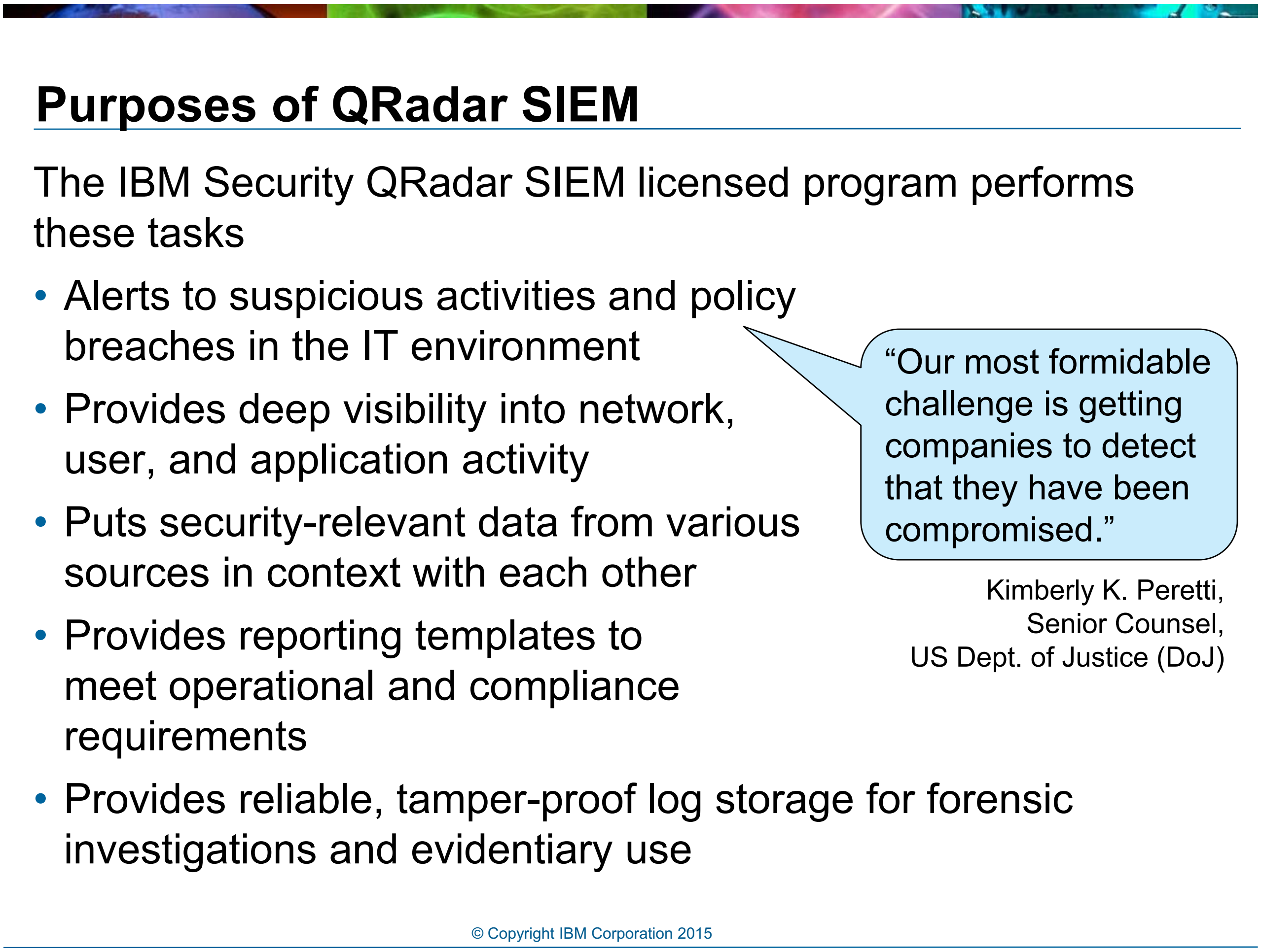
*Objectives*

# Lesson 1 QRadar SIEM purpose

## Lesson: QRadar SIEM purpose

QRadar SIEM alerts to suspicious activities and enables security analysts to investigate them. In this lesson, you are introduced to the purpose of the QRadar SIEM software application, including the following aspects of the application:

- The challenges QRadar SIEM addresses
- Where QRadar SIEM fits into the IBM Security Framework
- How QRadar SIEM helps to identify attacks and provides context to investigate them



## Purposes of QRadar SIEM

The IBM Security QRadar SIEM licensed program performs these tasks

- Alerts to suspicious activities and policy breaches in the IT environment
- Provides deep visibility into network, user, and application activity
- Puts security-relevant data from various sources in context with each other
- Provides reporting templates to meet operational and compliance requirements
- Provides reliable, tamper-proof log storage for forensic investigations and evidentiary use

“Our most formidable challenge is getting companies to detect that they have been compromised.”

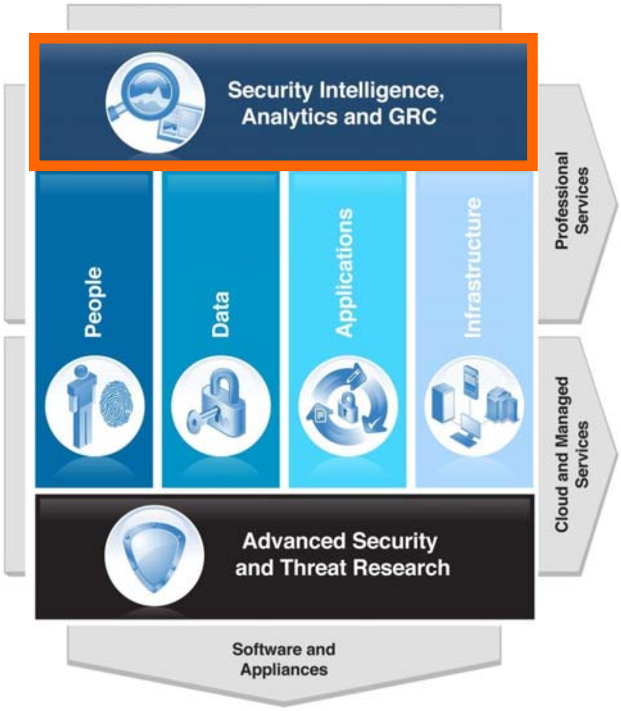
Kimberly K. Peretti,
Senior Counsel,
US Dept. of Justice (DoJ)

*Purposes of QRadar SIEM*

QRadar SIEM enables you to minimize the time gap between when a security incident occurs and when it is detected.

**Note:** SIEM = Security Information and Event Management

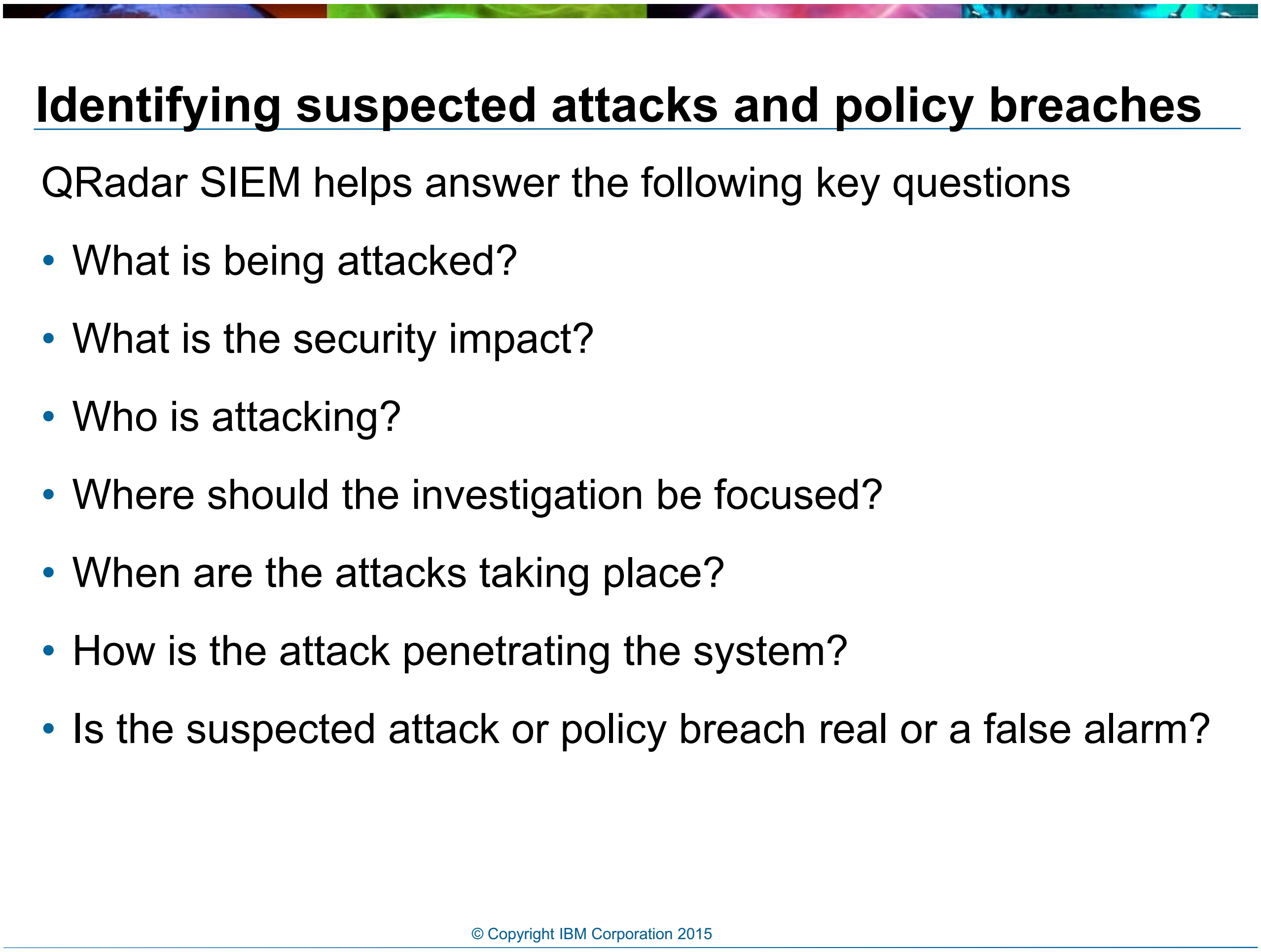
## QRadar SIEM and the IBM Security Framework


Security Intelligence, Analytics and GRC
People
Data
Applications
Infrastructure
Advanced Security and Threat Research
Software and Appliances
Professional Services
Cloud and Managed Services

In the IBM Security Framework, QRadar SIEM offers these capabilities

- Security Intelligence, Analytics and Governance, Risk Management, and Compliance (GRC)
- Insight into all domains of the IBM Security Framework

*QRadar SIEM and the IBM Security Framework*



## Identifying suspected attacks and policy breaches

QRadar SIEM helps answer the following key questions

- What is being attacked?
- What is the security impact?
- Who is attacking?
- Where should the investigation be focused?
- When are the attacks taking place?
- How is the attack penetrating the system?
- Is the suspected attack or policy breach real or a false alarm?

*Identifying suspected attacks and policy breaches*

# Providing context

To enable security analysts to perform investigations, QRadar SIEM correlates information such as these examples

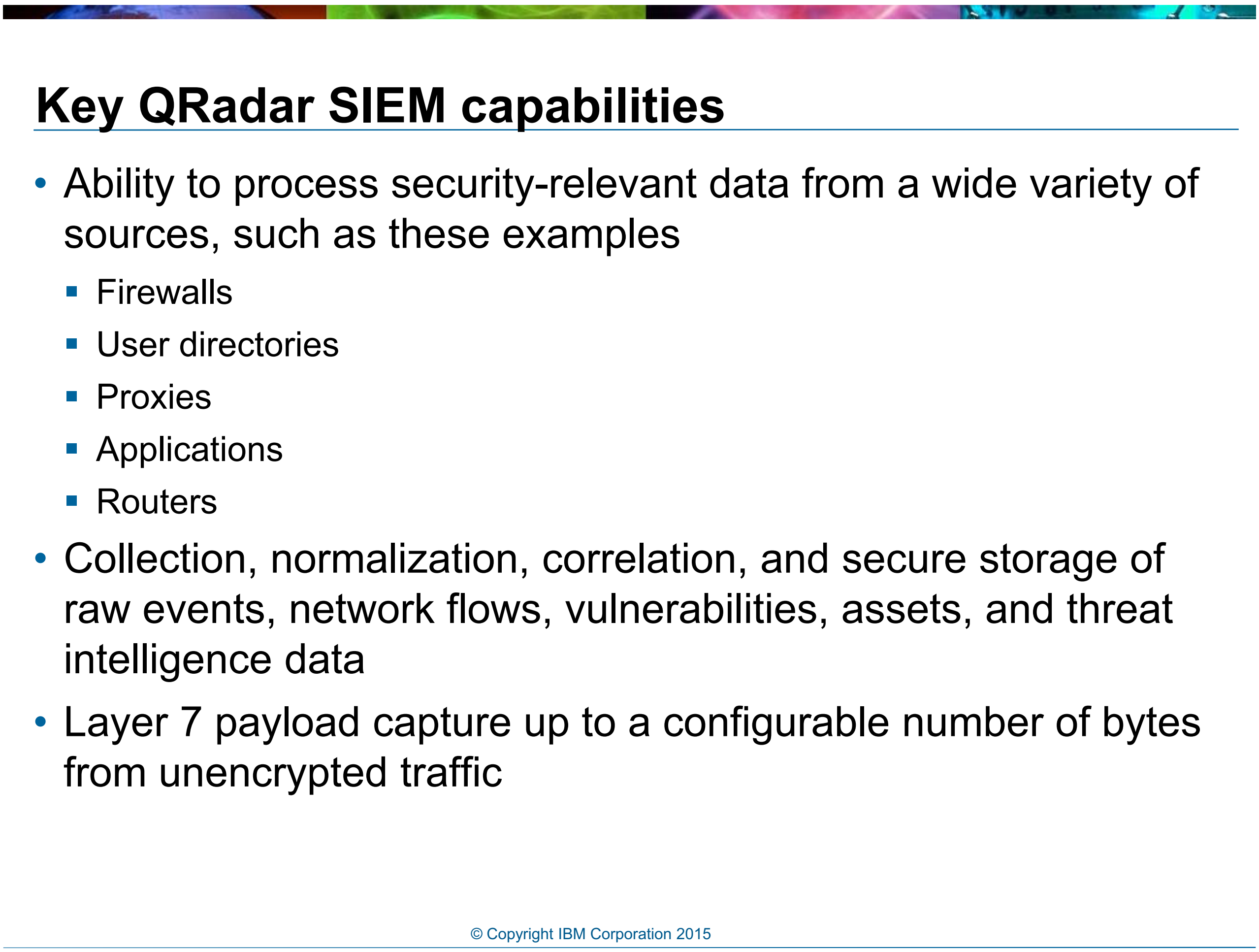
- Point in time
- Offending users
- Origins
- Targets
- Vulnerabilities
- Asset information
- Known threats

*Providing context*

# Lesson 2  QRadar SIEM capabilities

## Lesson: QRadar SIEM capabilities

QRadar SIEM helps your organization to identify attacks and policy breaches. This lesson provides a high-level description of the features of QRadar SIEM.

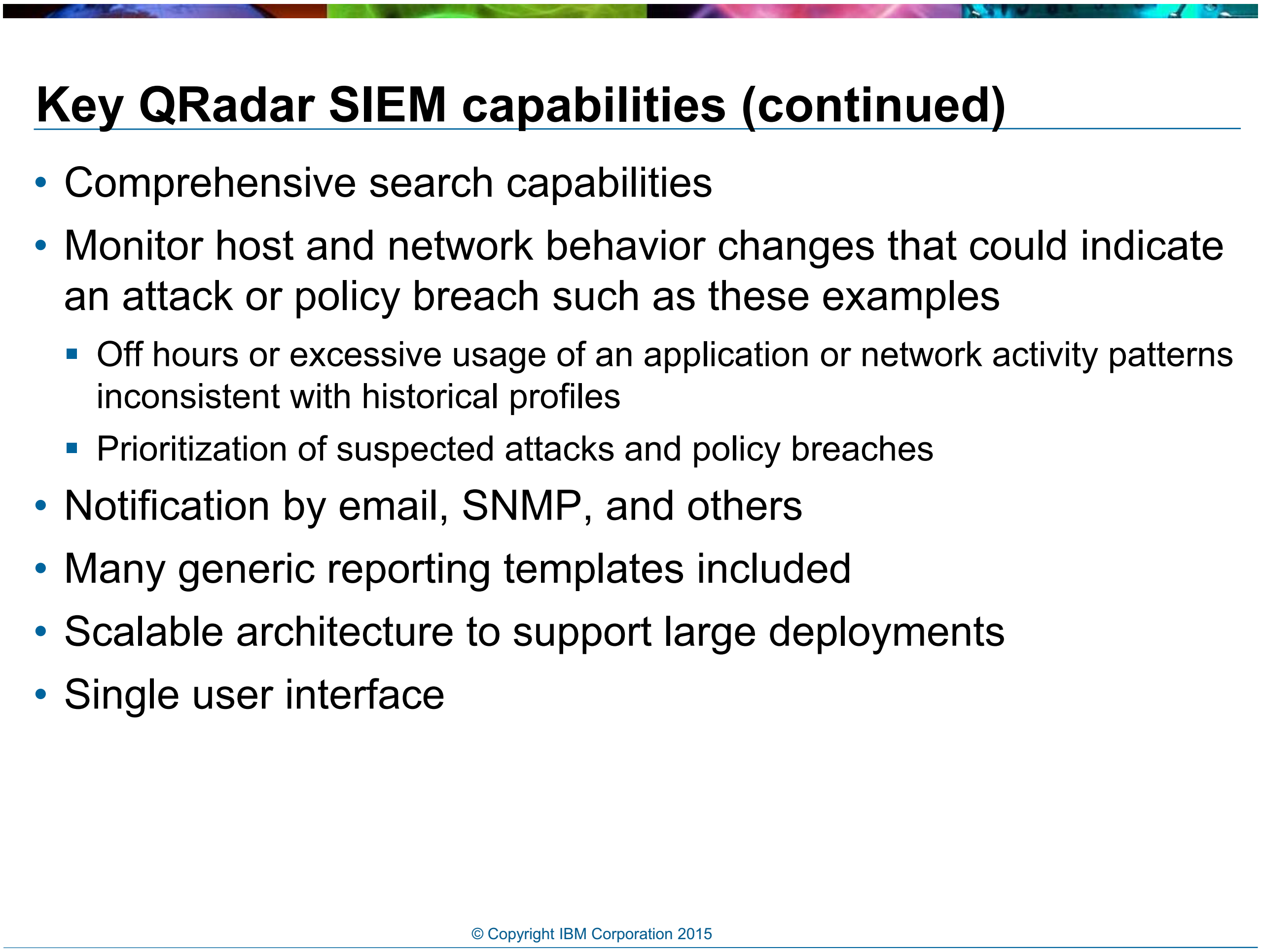


## Key QRadar SIEM capabilities

- Ability to process security-relevant data from a wide variety of sources, such as these examples
  - Firewalls
  - User directories
  - Proxies
  - Applications
  - Routers
- Collection, normalization, correlation, and secure storage of raw events, network flows, vulnerabilities, assets, and threat intelligence data
- Layer 7 payload capture up to a configurable number of bytes from unencrypted traffic

*Key QRadar SIEM capabilities*

By default, QFlow captures the first 64 bytes of unencrypted layer 7 payloads. The user interface displays these bytes without further decoding. Payloads from encrypted traffic are not captured.



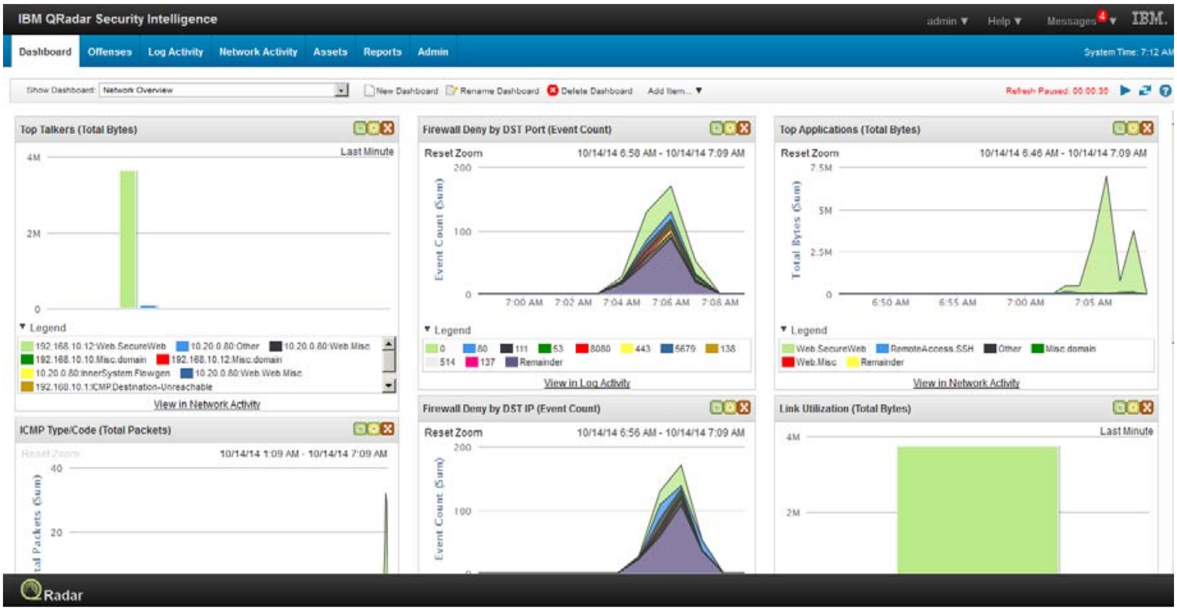
## Key QRadar SIEM capabilities (continued)

- Comprehensive search capabilities
- Monitor host and network behavior changes that could indicate an attack or policy breach such as these examples
  - Off hours or excessive usage of an application or network activity patterns inconsistent with historical profiles
  - Prioritization of suspected attacks and policy breaches
- Notification by email, SNMP, and others
- Many generic reporting templates included
- Scalable architecture to support large deployments
- Single user interface

*Key QRadar SIEM capabilities (continued)*

While QRadar SIEM alerts you to suspicious activities and facilitates their investigation, it does not respond automatically. For example, QRadar SIEM can detect services it suspects are targeted by an attack, but it does not change configurations or shut down such services. Such automatic changes can cause unwanted system outages.

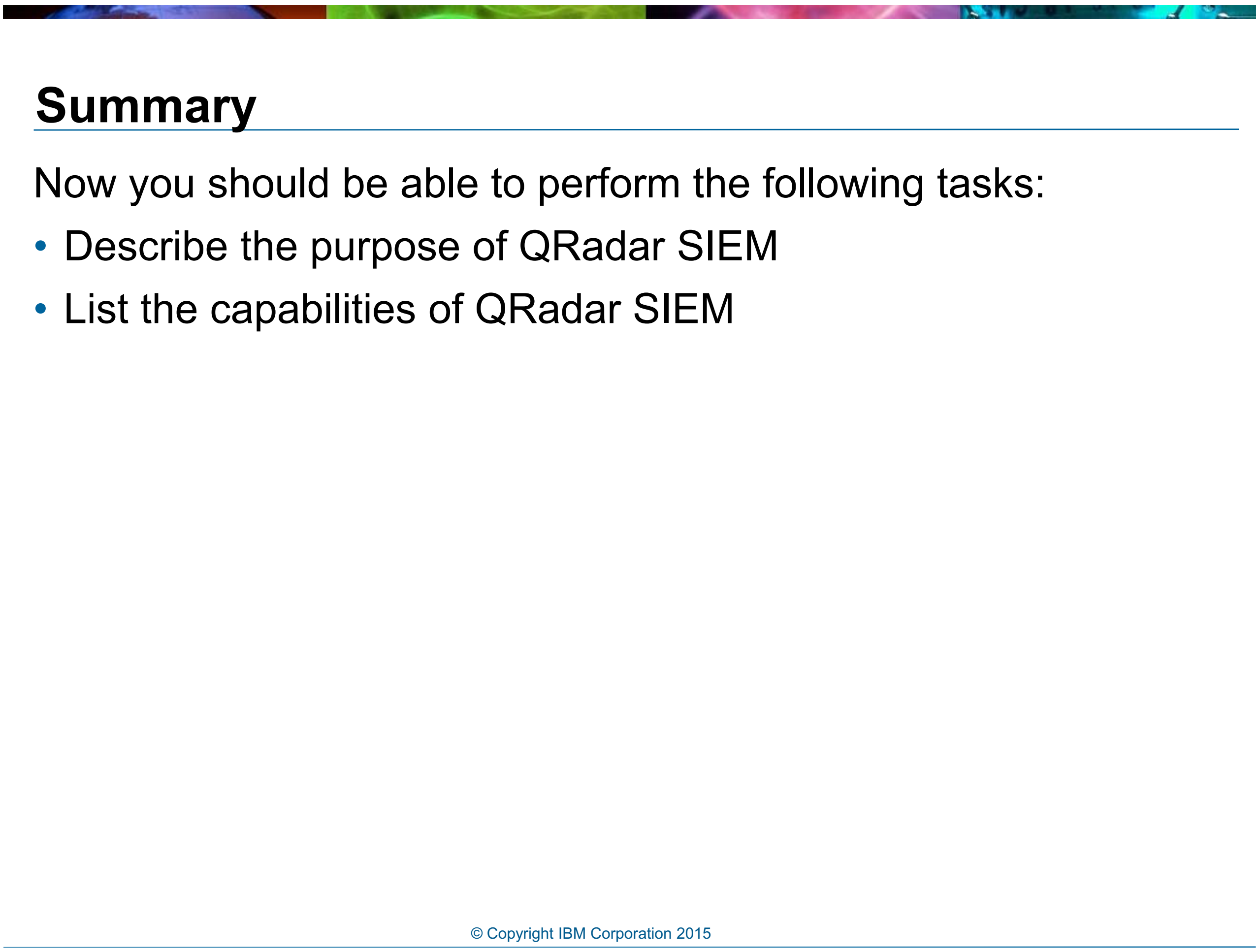
# QRadar SIEM Console



Show Dashboard: Network Overview

The console provides one integrated user interface for all tasks

*QRadar SIEM Console*



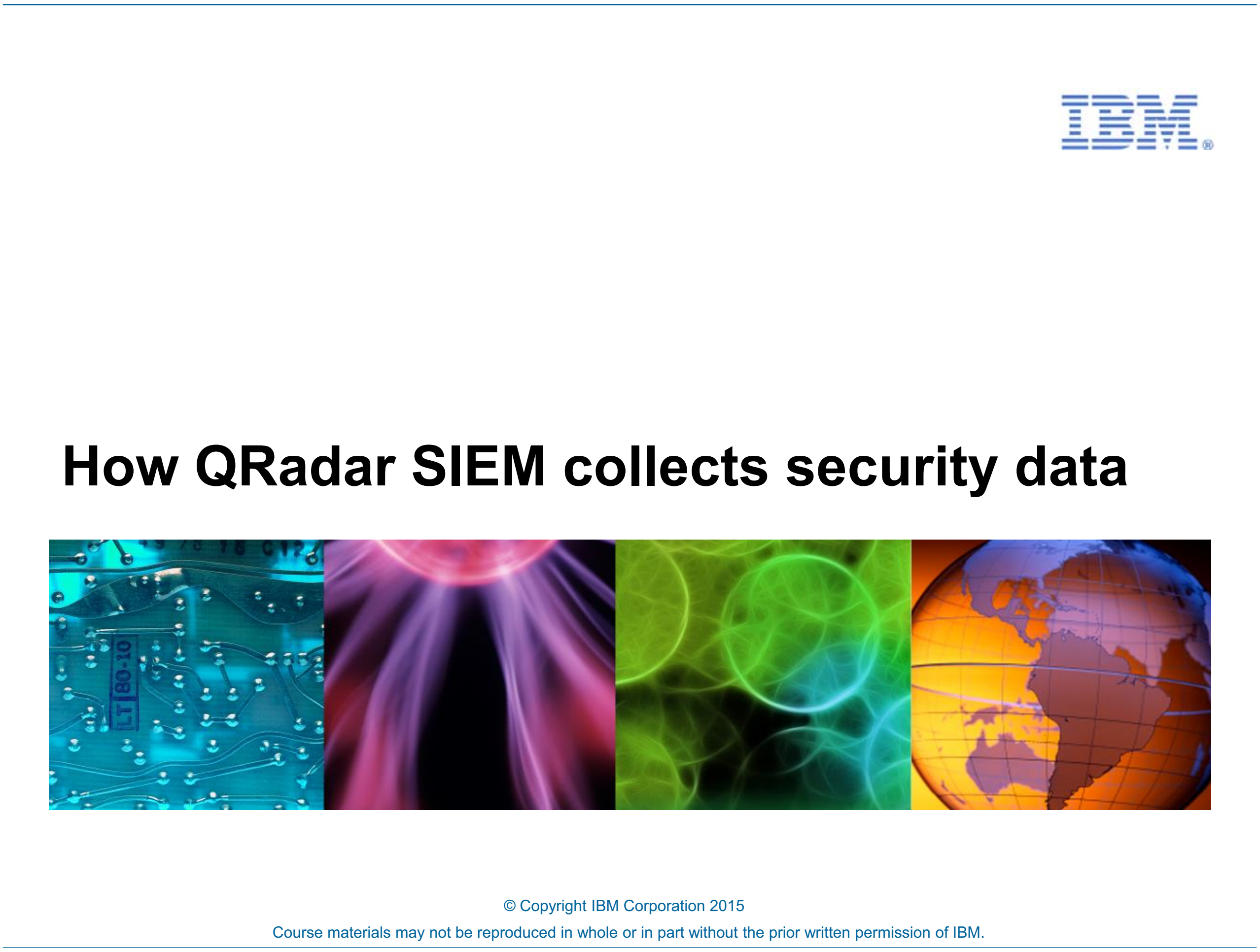
## Summary

Now you should be able to perform the following tasks:

- Describe the purpose of QRadar SIEM
- List the capabilities of QRadar SIEM

*Summary*

# 2 How QRadar SIEM collects security data



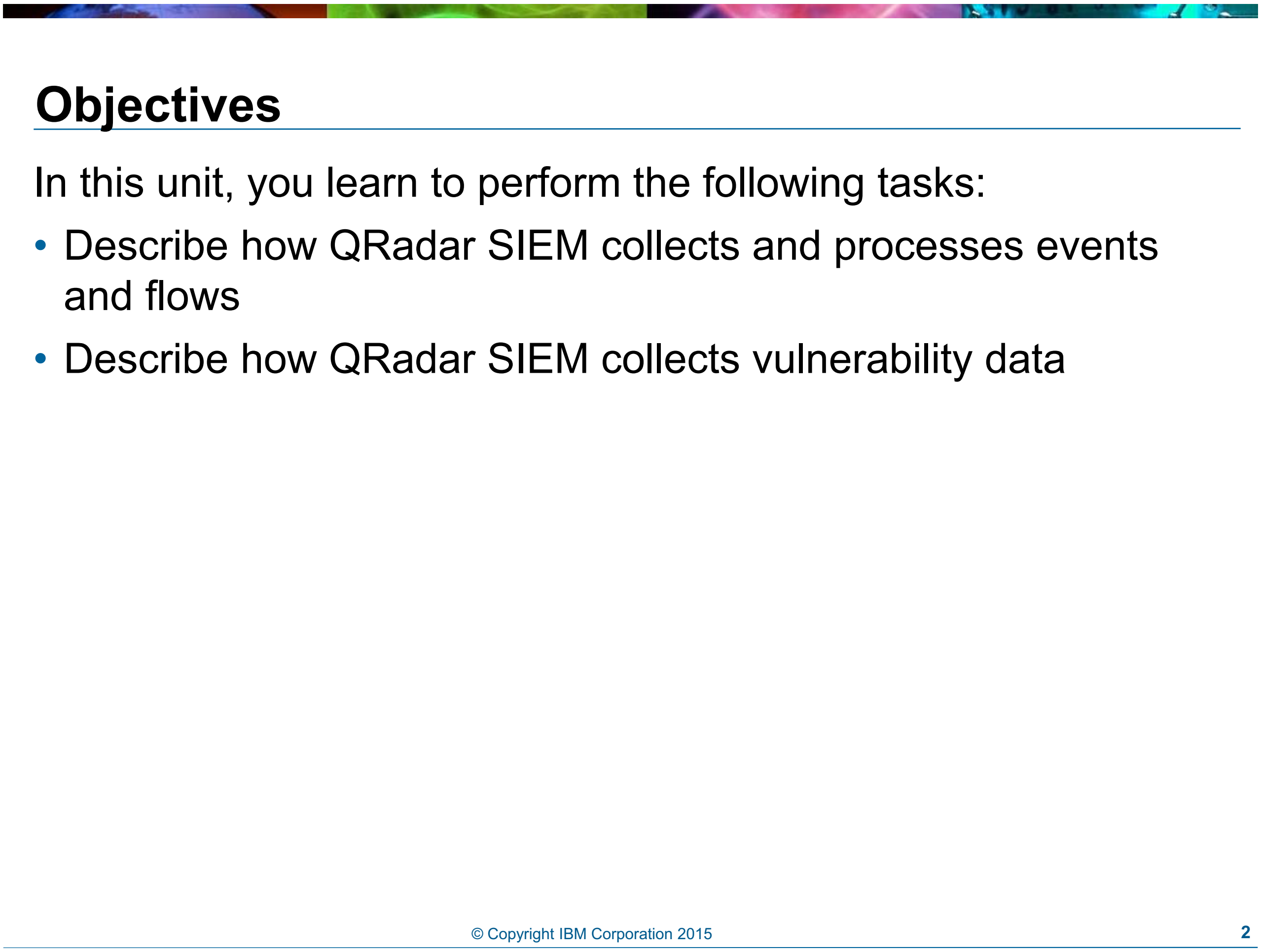
## How QRadar SIEM collects security data

QRadar SIEM collects and processes the event data and vulnerability assessment data that is gathered by the systems in your network. This unit provides a high-level description of how QRadar SIEM collects data and performs vulnerability assessment.

References:

- *IBM Security QRadar SIEM Users Guide* http://ibm.co/1wvpSEE
- *IBM Security QRadar SIEM Administration Guide* http://ibm.co/1wvpSEE
- *IBM Security QRadar Log Sources User Guide* http://ibm.co/1wvpSEE
- *IBM Security QRadar WinCollect User Guide* http://ibm.co/1wvpSEE
- *IBM Security QRadar Adaptive Log Exporter Users Guide* http://ibm.co/1wvpSEE
- Microsoft Windows Management Instrumentation http://technet.microsoft.com/en-us/library/ee692942.aspx
- *IBM Security QRadar Vulnerability Assessment Configuration Guide* http://ibm.co/1wvpSEE

This unit has no student exercises.



## Objectives

In this unit, you learn to perform the following tasks:

- Describe how QRadar SIEM collects and processes events and flows
- Describe how QRadar SIEM collects vulnerability data

*Objectives*

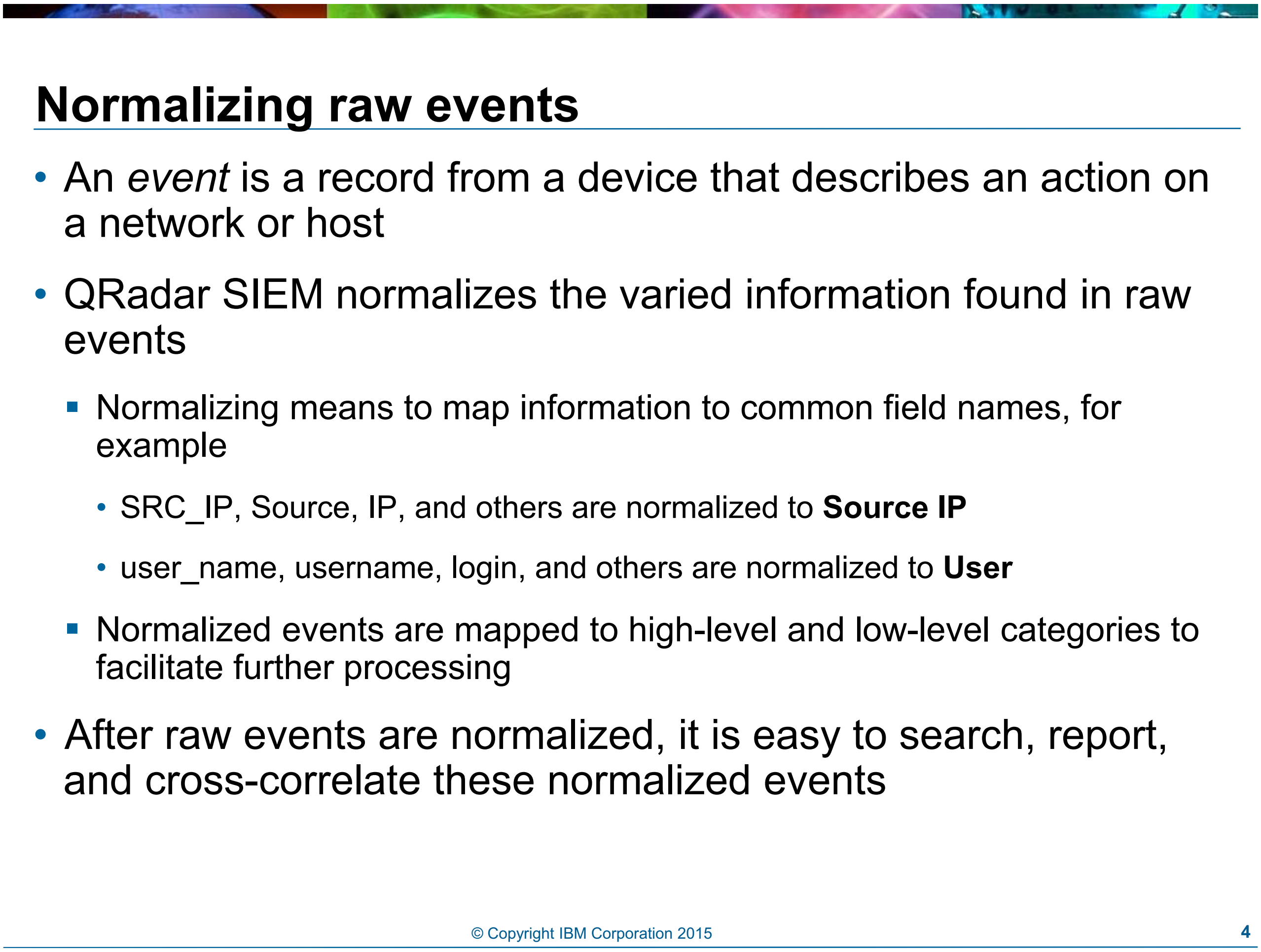
# Lesson 1  Collecting and processing events and flows

## Lesson: Collecting and processing events and flows

In this lesson, you learn how QRadar SIEM collects and processes both events and flows.

References:

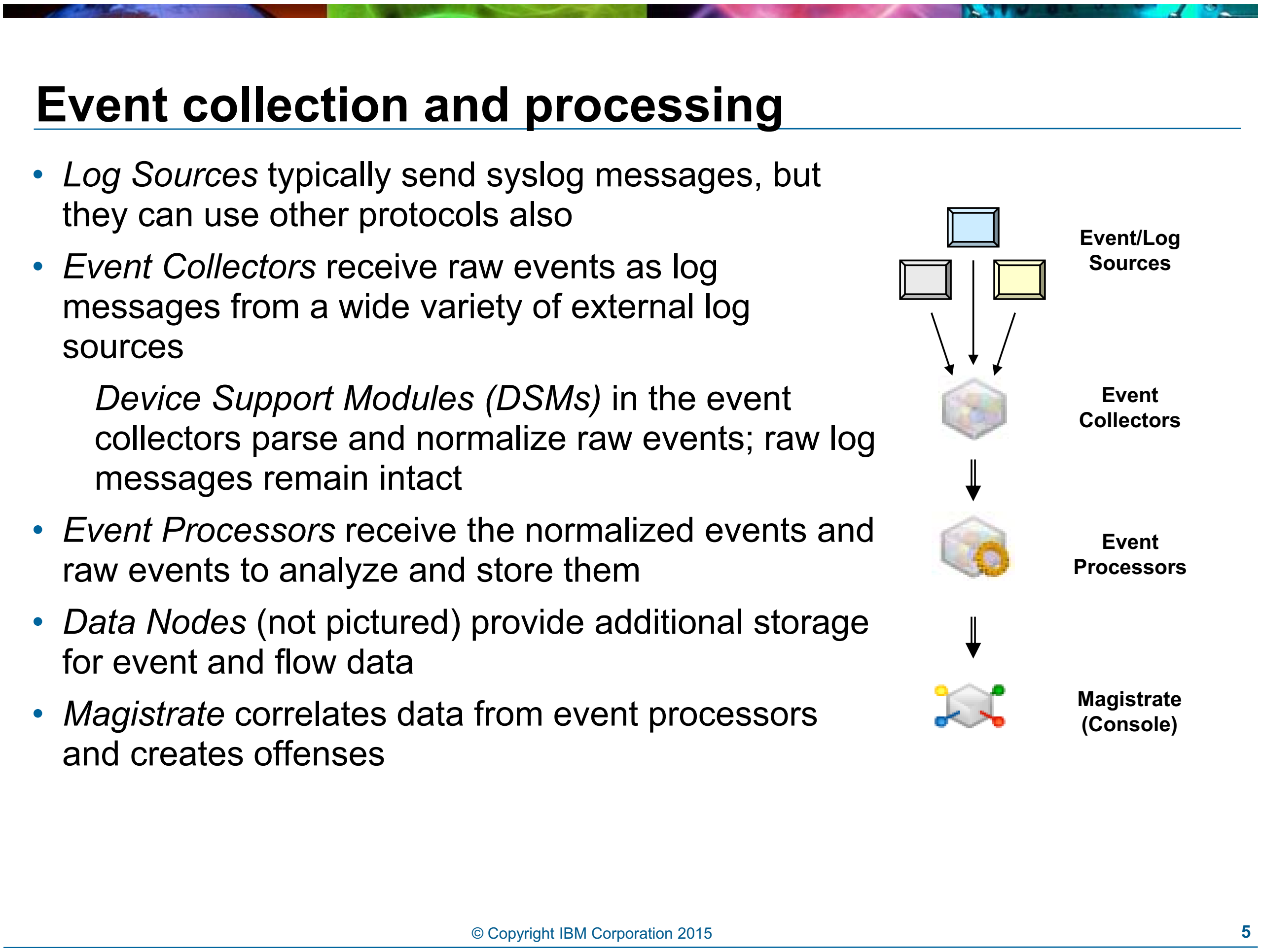
- *IBM Security QRadar SIEM Users Guide* http://ibm.co/1wvpSEE
- *IBM Security QRadar SIEM Administration Guide* http://ibm.co/1wvpSEE
- *IBM Security QRadar Log Sources User Guide* http://ibm.co/1wvpSEE
- *IBM Security QRadar WinCollect User Guide* http://ibm.co/1wvpSEE
- *IBM Security QRadar Adaptive Log Exporter Users Guide* http://ibm.co/1wvpSEE
- Microsoft Windows Management Instrumentation http://technet.microsoft.com/en-us/library/ee692942.aspx
- *IBM Security QRadar Vulnerability Assessment Configuration Guide* http://ibm.co/1wvpSEE



## Normalizing raw events

- An *event* is a record from a device that describes an action on a network or host
- QRadar SIEM normalizes the varied information found in raw events
  - Normalizing means to map information to common field names, for example
    - SRC_IP, Source, IP, and others are normalized to **Source IP**
    - user_name, username, login, and others are normalized to **User**
  - Normalized events are mapped to high-level and low-level categories to facilitate further processing
- After raw events are normalized, it is easy to search, report, and cross-correlate these normalized events

*Normalizing log messages to events*



## Event collection and processing

- *Log Sources* typically send syslog messages, but they can use other protocols also
- *Event Collectors* receive raw events as log messages from a wide variety of external log sources

  *Device Support Modules (DSMs)* in the event collectors parse and normalize raw events; raw log messages remain intact
- *Event Processors* receive the normalized events and raw events to analyze and store them
- *Data Nodes* (not pictured) provide additional storage for event and flow data
- *Magistrate* correlates data from event processors and creates offenses

Event/Log Sources

Event Collectors

Event Processors

Magistrate (Console)

*Event collection and processing*

To receive raw events from log sources, QRadar SIEM supports many protocols, such as those detailed in the following list:

- Syslog from operating systems, applications, firewalls, IPS/IDS, router, switches
- Other standard protocols, such as SNMP and SOAP
- Data from a database table or view, such as JDBC
- Proprietary vendor-specific messaging protocols, such as OPSEC/LEA from Checkpoint

Refer to the *IBM Security QRadar Log Sources User Guide* at http://ibm.co/1wvpSEE.

### Collection methods

QRadar SIEM uses the following collection methods on variants of UNIX and Linux operating systems (licensed programs):

- Output from the operating system's **syslog** licensed program is the most common method.
- **Transfer of syslog files** to QRadar SIEM allows more secure communication.
- Third-party agents such as the **syslog-ng**, **Snare**, and **Splunk Universal Forwarder** licensed programs are also available.

QRadar SIEM uses the following collection methods on variants of Microsoft Windows operating systems (licensed programs):

- The **IBM Security QRadar WinCollect** licensed program collects events by running as a service on a Windows system. That agent can also collect events from other Windows servers where the agent is not installed. WinCollect is centrally managed from the QRadar SIEM user interface. Refer to the *IBM Security QRadar WinCollect User Guide* at http://ibm.co/1wvpSEE.
- The **Microsoft Windows Management Instrumentation (WMI)** licensed program can be used and administered through the QRadar SIEM user interface to collect events without an agent. However, WMI puts a major load on network and Windows servers. Domain controllers usually slow down when WMI is configured. For more information, refer to http://technet.microsoft.com/en-us/library/ee692942.aspx.
- Third-party agents such as the **syslog-ng**, **Snare**, **Splunk Universal Forwarder**, and **Adiscon EventReporter** licensed programs are also available.

### About Event Collectors

Each Event Collector gathers events from local and remote sources.The Event Collector normalizes events and classifies them into low- and high-level categories. The Event Collector also bundles identical events to conserve system usage through a process that is known as *coalescing*.

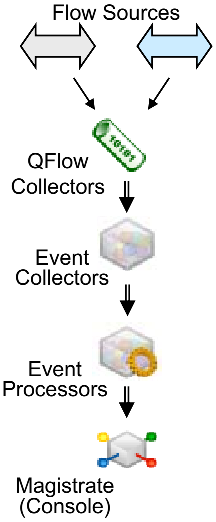
Event collectors use traffic analysis to discover which kind of device a log source is if a Device Support Module (DSM) for that kind of device is installed. In addition, the DSM for a device specifies how to map and normalize the device's raw events.

### About Event Processors

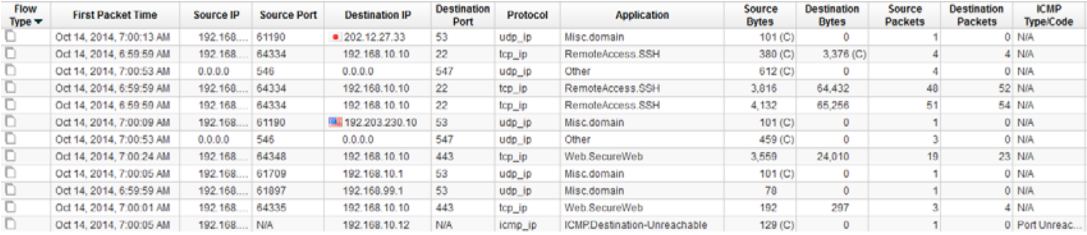
Each Event Processor processes events from the Event Collectors and flow data. Event processors correlate the information. The Event Processor examines information gathered by QRadar SIEM to indicate behavioral changes or policy violations. Rules are applied to the events to search for anomalies.

# Flow collection and processing

- A *flow* is a communication session between two hosts
- QFlow Collectors read packets from the wire or receive flows from other devices



- QFlow Collectors convert all gathered network data to flow records similar normalized events; they include such details as when, who, how much, protocols, and options.



| Flow Type | First Packet Time | Source IP | Source Port | Destination IP | Destination Port | Protocol | Application | Source Bytes | Destination Bytes | Source Packets | Destination Packets | ICMP Type/Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| □ | Oct 14, 2014, 7:00:13 AM | 192.168.... | 61190 | 202.12.27.33 | 53 | udp_ip | Misc.domain | 101 (C) | 0 | 1 | 0 | N/A |
| □ | Oct 14, 2014, 6:59:59 AM | 192.168.... | 64334 | 192.168.10.10 | 22 | tcp_ip | RemoteAccess.SSH | 380 (C) | 3,376 (C) | 4 | 4 | N/A |
| □ | Oct 14, 2014, 7:00:53 AM | 0.0.0.0 | 546 | 0.0.0.0 | 547 | udp_ip | Other | 612 (C) | 0 | 4 | 0 | N/A |
| □ | Oct 14, 2014, 6:59:59 AM | 192.168.... | 64334 | 192.168.10.10 | 22 | tcp_ip | RemoteAccess.SSH | 3,816 | 64,432 | 48 | 52 | N/A |
| □ | Oct 14, 2014, 6:59:59 AM | 192.168.... | 64334 | 192.168.10.10 | 22 | tcp_ip | RemoteAccess.SSH | 4,132 | 65,256 | 51 | 54 | N/A |
| □ | Oct 14, 2014, 7:00:09 AM | 192.168.... | 61190 | 192.203.230.10 | 53 | udp_ip | Misc.domain | 101 (C) | 0 | 1 | 0 | N/A |
| □ | Oct 14, 2014, 7:00:53 AM | 0.0.0.0 | 546 | 0.0.0.0 | 547 | udp_ip | Other | 459 (C) | 0 | 3 | 0 | N/A |
| □ | Oct 14, 2014, 7:00:24 AM | 192.168.... | 64348 | 192.168.10.10 | 443 | tcp_ip | Web.SecureWeb | 3,559 | 24,010 | 19 | 23 | N/A |
| □ | Oct 14, 2014, 7:00:05 AM | 192.168.... | 61709 | 192.168.10.1 | 53 | udp_ip | Misc.domain | 101 (C) | 0 | 1 | 0 | N/A |
| □ | Oct 14, 2014, 6:59:59 AM | 192.168.... | 61897 | 192.168.99.1 | 53 | udp_ip | Misc.domain | 78 | 0 | 1 | 0 | N/A |
| □ | Oct 14, 2014, 7:00:01 AM | 192.168.... | 64335 | 192.168.10.10 | 443 | tcp_ip | Web.SecureWeb | 192 | 297 | 3 | 4 | N/A |
| □ | Oct 14, 2014, 7:00:05 AM | 192.168.... | N/A | 192.168.10.12 | N/A | icmp_ip | ICMP.Destination-Unreachable | 129 (C) | 0 | 1 | 0 | Port Unreac... |

*Flow collection and processing*

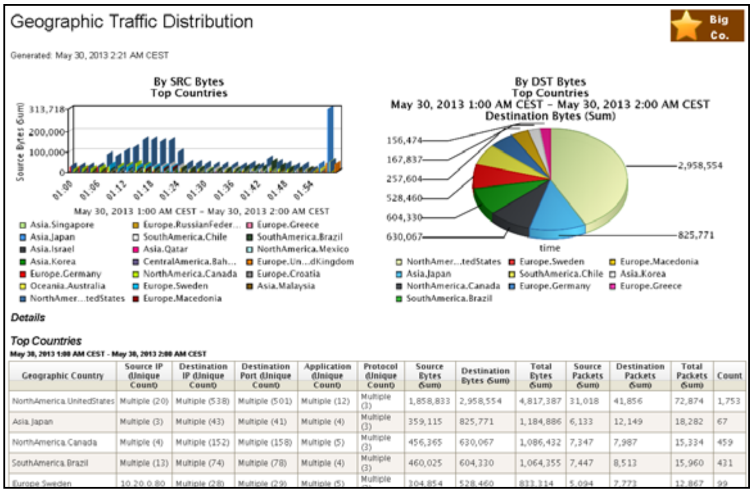
A *flow* is a record of a conversation between two devices on a network.

A network *flow record* provides information about a conversation between two devices using a specific protocol and can include many fields that describe the conversation. Examples include the source IP, the destination IP, the port, and other fields.

Up to a configurable number of bytes, QFlow provides layer 7 insights into the payload if it is unencrypted. Using a tap or span port, QFlow collects raw packets and places them into 60-second chunks. QFlow can also receive layer 4 flows from other network devices in IPFIX/NetFlow, sFlow, J-Flow, Packeteer, and Flowlog file accounting technologies.

Flows update asset profiles with the ports and services that are running on each host.

# Reporting



Geographic Traffic Distribution

Generated: May 30, 2013 2:21 AM CEST

*Details*

*Top Countries*

**May 30, 2013 1:00 AM CEST - May 30, 2013 2:00 AM CEST**

| Geographic Country | Source IP (Unique Count) | Destination IP (Unique Count) | Destination Port (Unique Count) | Application (Unique Count) | Protocol (Unique Count) | Source Bytes (Sum) | Destination Bytes (Sum) | Total Bytes (Sum) | Source Packets (Sum) | Destination Packets (Sum) | Total Packets (Sum) | Count |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NorthAmerica.UnitedStates | Multiple (20) | Multiple (538) | Multiple (501) | Multiple (12) | Multiple (3) | 1,858,833 | 2,958,554 | 4,817,387 | 31,018 | 41,856 | 72,874 | 1,753 |
| Asia.Japan | Multiple (3) | Multiple (43) | Multiple (41) | Multiple (4) | Multiple (3) | 359,115 | 825,771 | 1,184,886 | 6,133 | 12,149 | 18,282 | 67 |
| NorthAmerica.Canada | Multiple (4) | Multiple (152) | Multiple (158) | Multiple (5) | Multiple (3) | 456,365 | 630,067 | 1,086,432 | 7,347 | 7,987 | 15,334 | 459 |
| SouthAmerica.Brazil | Multiple (13) | Multiple (74) | Multiple (78) | Multiple (4) | Multiple (3) | 460,025 | 604,330 | 1,064,355 | 7,447 | 8,513 | 15,960 | 431 |
| Europe.Sweden | 10.20.0.80 | Multiple (28) | Multiple (29) | Multiple (5) | Multiple | 304,854 | 528,460 | 833,314 | 5,094 | 7,773 | 12,867 | 99 |

- All collected information is available for reports
- Thousands of report templates are available
- With the report wizard, you can create new templates and change existing templates

*Reporting*

Compliance reporting packages are available for PCI, SOX, FISMA, GLBA, and HIPAA, with reports based on control frameworks such as NIST, ISO, and CoBIT.

# Lesson 2  Collecting and processing vulnerability data

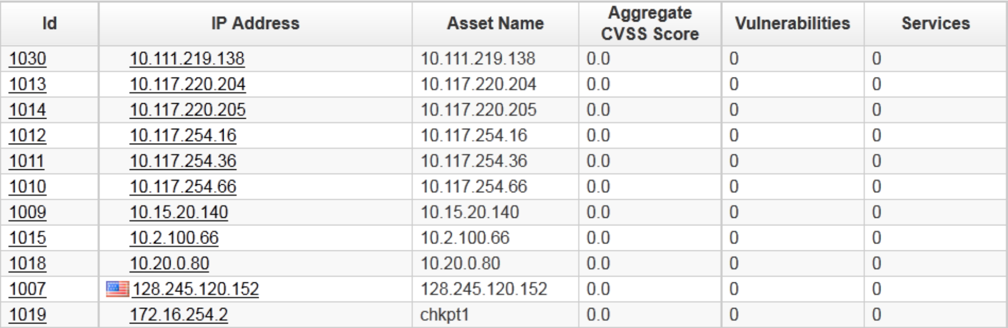
Lesson: Collecting and processing vulnerability data

The more QRadar SIEM knows about vulnerabilities of hosts, the better it can detect and prioritize suspicious activities. This lesson introduces you to vulnerability scanning and detection, as well as tracking the found vulnerabilities in asset profiles.

# Asset profiles

QRadar SIEM maintains asset profiles for systems in the network; the profiles track host details, such as these examples

- IP addresses
- Services listening on open ports
- Vulnerabilities



| Id | IP Address | Asset Name | Aggregate CVSS Score | Vulnerabilities | Services |
|---|---|---|---|---|---|
| 1030 | 10.111.219.138 | 10.111.219.138 | 0.0 | 0 | 0 |
| 1013 | 10.117.220.204 | 10.117.220.204 | 0.0 | 0 | 0 |
| 1014 | 10.117.220.205 | 10.117.220.205 | 0.0 | 0 | 0 |
| 1012 | 10.117.254.16 | 10.117.254.16 | 0.0 | 0 | 0 |
| 1011 | 10.117.254.36 | 10.117.254.36 | 0.0 | 0 | 0 |
| 1010 | 10.117.254.66 | 10.117.254.66 | 0.0 | 0 | 0 |
| 1009 | 10.15.20.140 | 10.15.20.140 | 0.0 | 0 | 0 |
| 1015 | 10.2.100.66 | 10.2.100.66 | 0.0 | 0 | 0 |
| 1018 | 10.20.0.80 | 10.20.0.80 | 0.0 | 0 | 0 |
| 1007 | 128.245.120.152 | 128.245.120.152 | 0.0 | 0 | 0 |
| 1019 | 172.16.254.2 | chkpt1 | 0.0 | 0 | 0 |

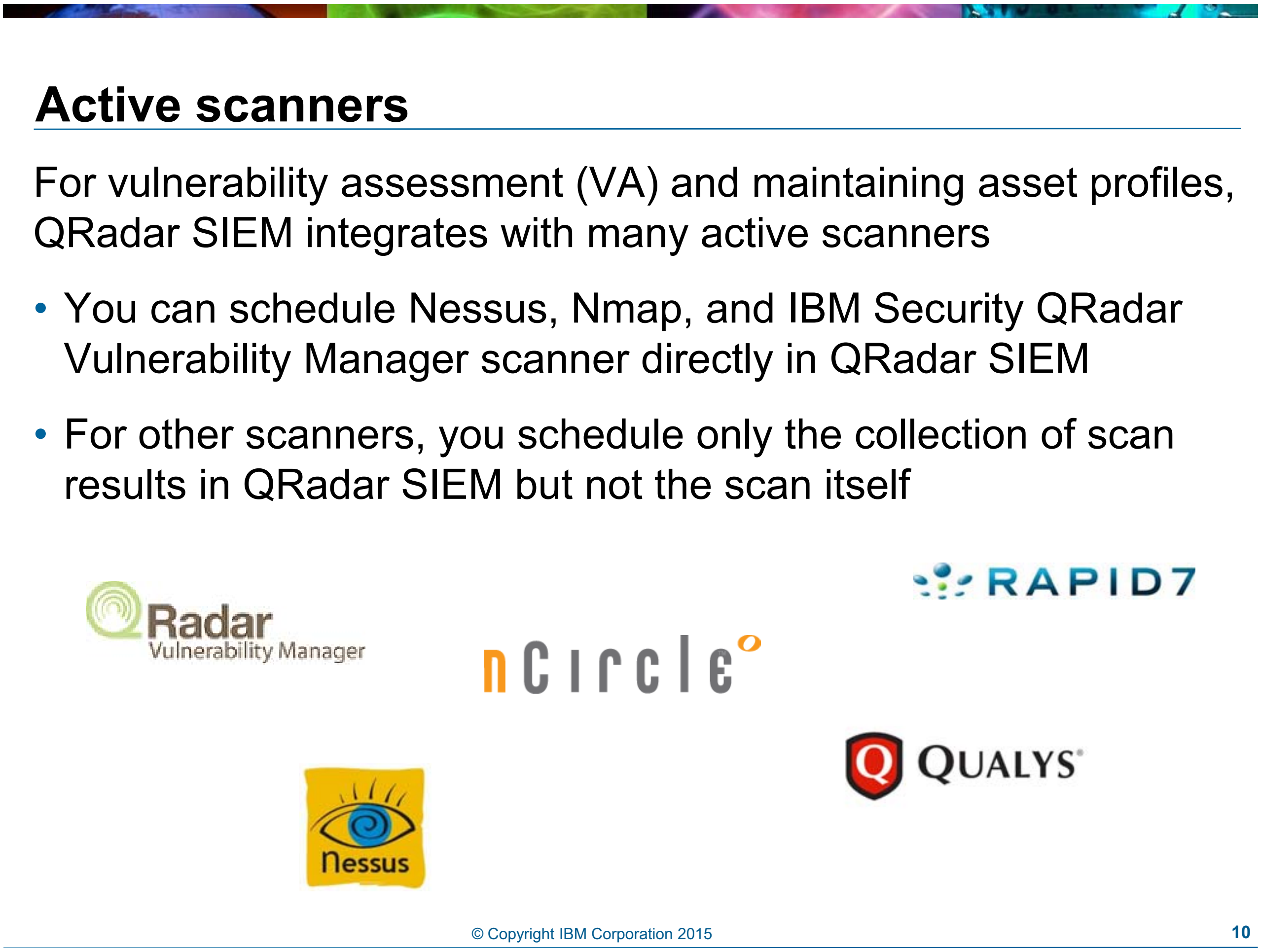
*Asset profiles*

In addition to technical asset information, asset profiles track user logins to the asset if this information is provided to QRadar SIEM. QRadar SIEM automatically creates and updates asset profiles for systems that are found in the following areas:

- DHCP, DNS, VPN, proxy, firewall NAT, and wireless AP logs
- Passively gathered bidirectional flow
- Vulnerability data provided by active scanners

If this information is unavailable, QRadar SIEM does not create asset profiles automatically. You can still create asset profiles manually in the user interface or by import. Only flows and vulnerability data add and update information about ports and services to asset profiles.

Asset profile information is used for correlation purposes. For example, if an attacker attempts to compromise a certain service that is running on a specific asset, QRadar SIEM can determine whether the asset is vulnerable to this attack by correlating the attack to the asset profile.



## Active scanners

For vulnerability assessment (VA) and maintaining asset profiles, QRadar SIEM integrates with many active scanners

- You can schedule Nessus, Nmap, and IBM Security QRadar Vulnerability Manager scanner directly in QRadar SIEM
- For other scanners, you schedule only the collection of scan results in QRadar SIEM but not the scan itself

Radar
Vulnerability Manager
nCircle
RAPID7
QUALYS
Nessus

10

*Active scanners*

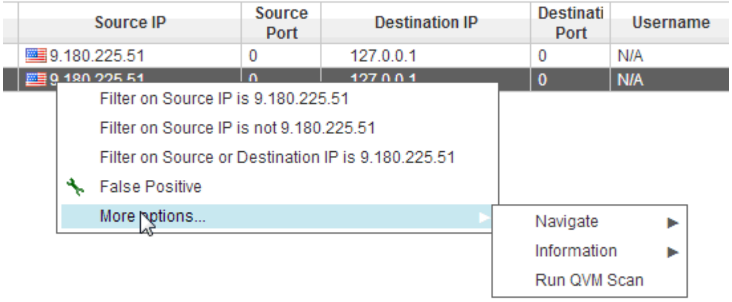
Third-party scanners, such as Nessus and nCircle IP360, report vulnerabilities to QRadar SIEM using external references from the Open Source Vulnerability Database (OSVDB) and National Vulnerability Database (NVDB) to identify found vulnerabilities. Each vulnerability is assigned a unique reference identifier, an OSVDB ID. In addition, each vulnerability can be identified by external data references, such as a Common Vulnerability and Exposures (CVE) ID or Bugtraq ID.

# QRadar Vulnerability Manager scanner

You can add the separate product IBM Security QRadar Vulnerability Manager licensed program with QRadar SIEM

It provides these benefits

- Active scanner present on all QRadar event and flow collectors and processors
- Detects 70,000+ vulnerabilities



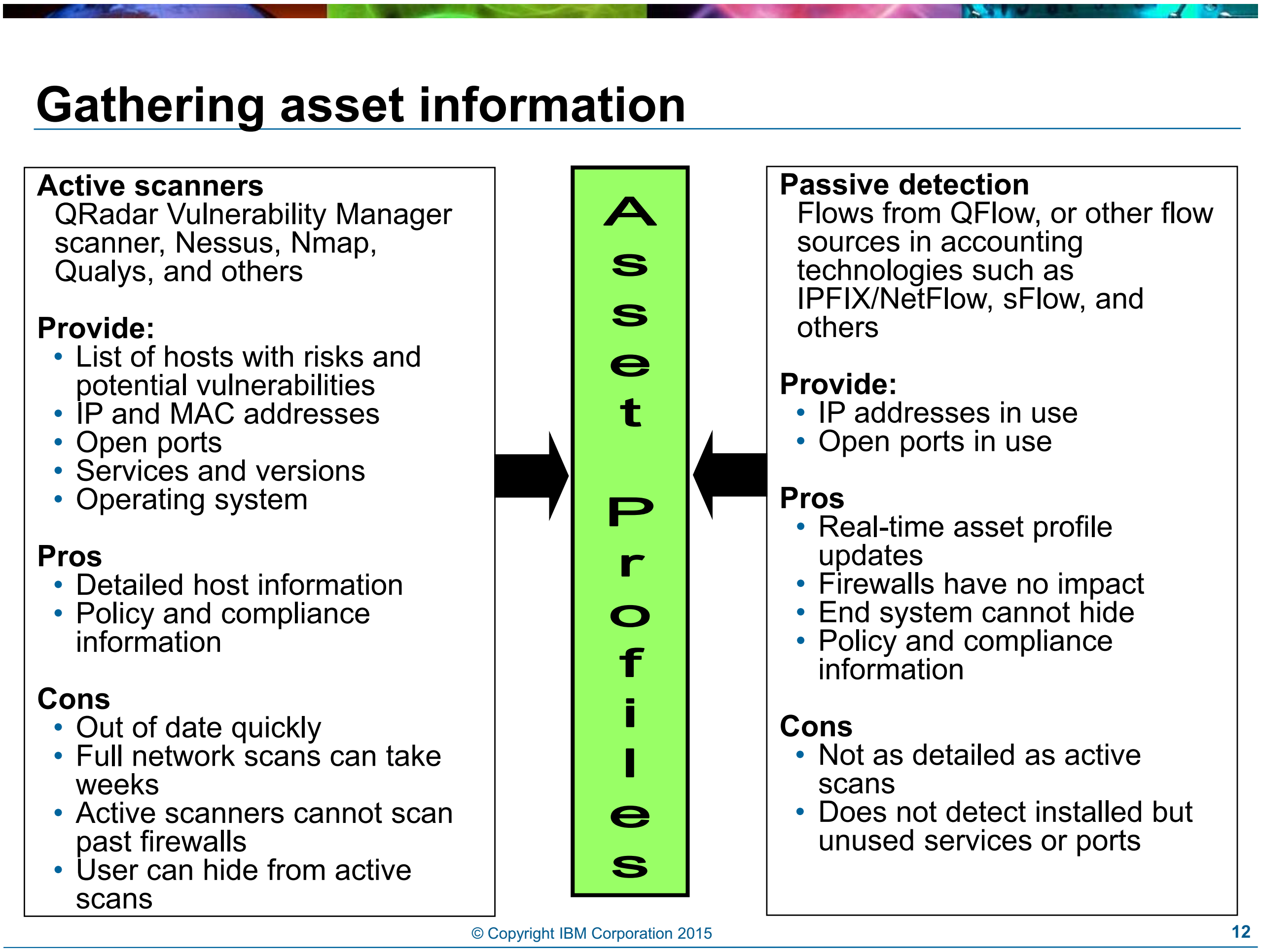
| Source IP | Source Port | Destination IP | Destinati Port | Username |
|---|---|---|---|---|
| 9.180.225.51 | 0 | 127.0.0.1 | 0 | N/A |
| 9.180.225.51 | 0 | 127.0.0.1 | 0 | N/A |

Filter on Source IP is 9.180.225.51
Filter on Source IP is not 9.180.225.51
Filter on Source or Destination IP is 9.180.225.51
False Positive
More options...
Navigate ▶
Information ▶
Run QVM Scan

- Processes results from IBM-hosted scanner to see a view from outside your firewall
- Tracks *Common Vulnerabilities and Exposures* (CVE)
- Third-party vulnerability data feeds

*QRadar Vulnerability Manager scanner*

The user interface shows the **Vulnerabilities** tab if your organization deployed a license for QRadar Vulnerability Manager.



## Gathering asset information

**Active scanners**
QRadar Vulnerability Manager scanner, Nessus, Nmap, Qualys, and others

**Provide:**
- List of hosts with risks and potential vulnerabilities
- IP and MAC addresses
- Open ports
- Services and versions
- Operating system

**Pros**
- Detailed host information
- Policy and compliance information

**Cons**
- Out of date quickly
- Full network scans can take weeks
- Active scanners cannot scan past firewalls
- User can hide from active scans

**Asset Profiles**

**Passive detection**
Flows from QFlow, or other flow sources in accounting technologies such as IPFIX/NetFlow, sFlow, and others

**Provide:**
- IP addresses in use
- Open ports in use

**Pros**
- Real-time asset profile updates
- Firewalls have no impact
- End system cannot hide
- Policy and compliance information

**Cons**
- Not as detailed as active scans
- Does not detect installed but unused services or ports

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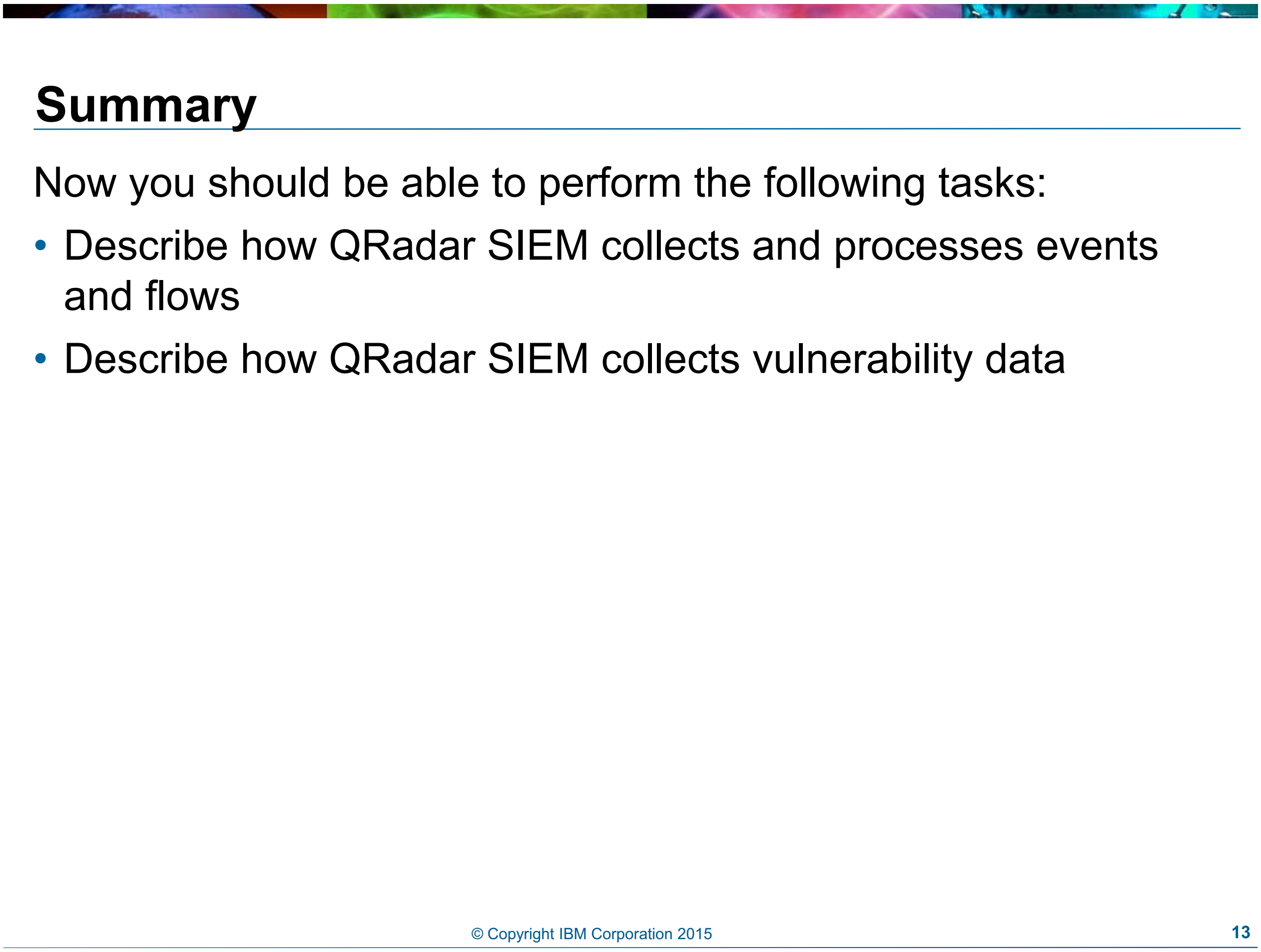
*Gathering asset information*

A user can hide a system from active scans by connecting it to the network only for short periods for time.



## Summary

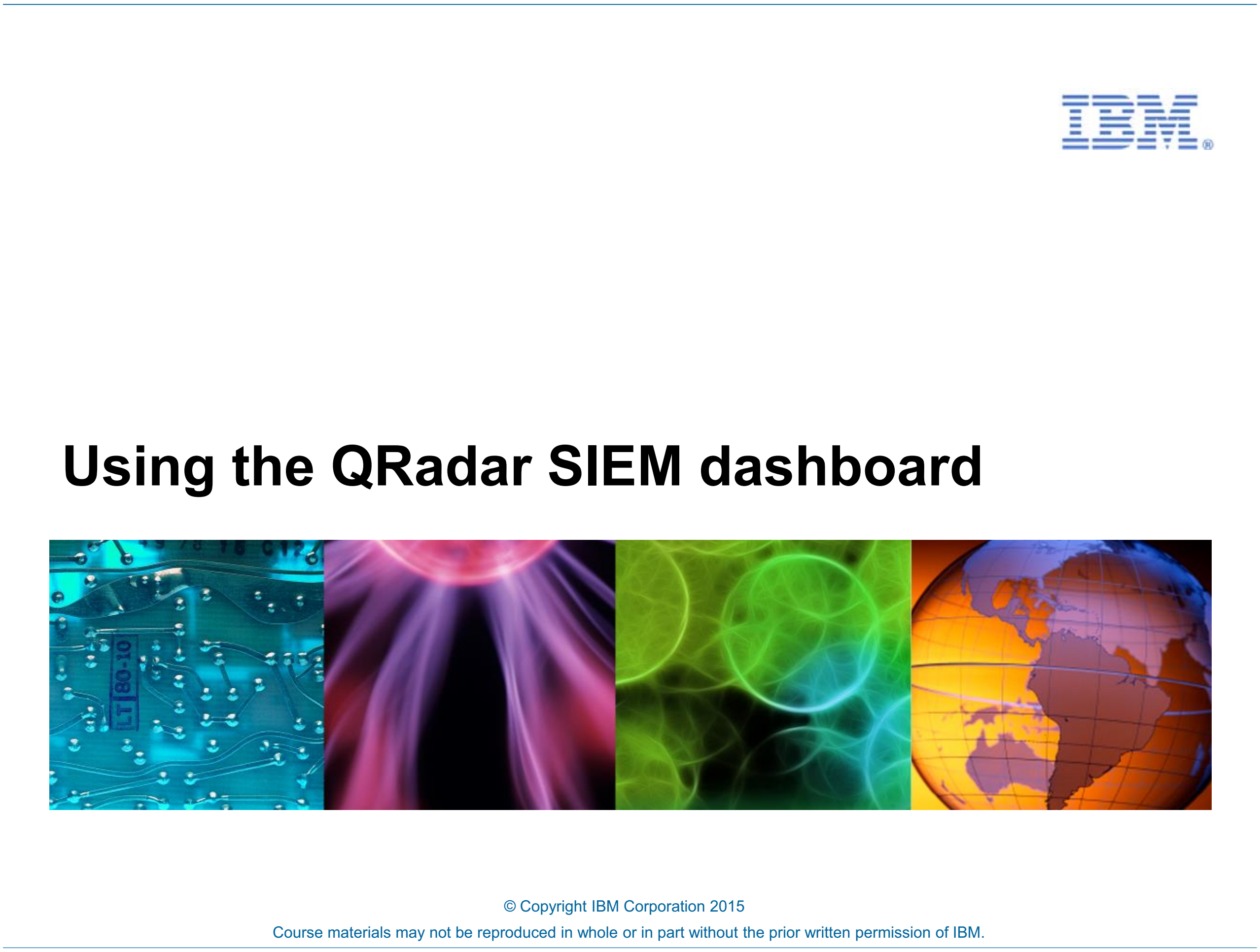
Now you should be able to perform the following tasks:

- Describe how QRadar SIEM collects and processes events and flows
- Describe how QRadar SIEM collects vulnerability data

13

*Summary*

# 3 Using the QRadar SIEM dashboard

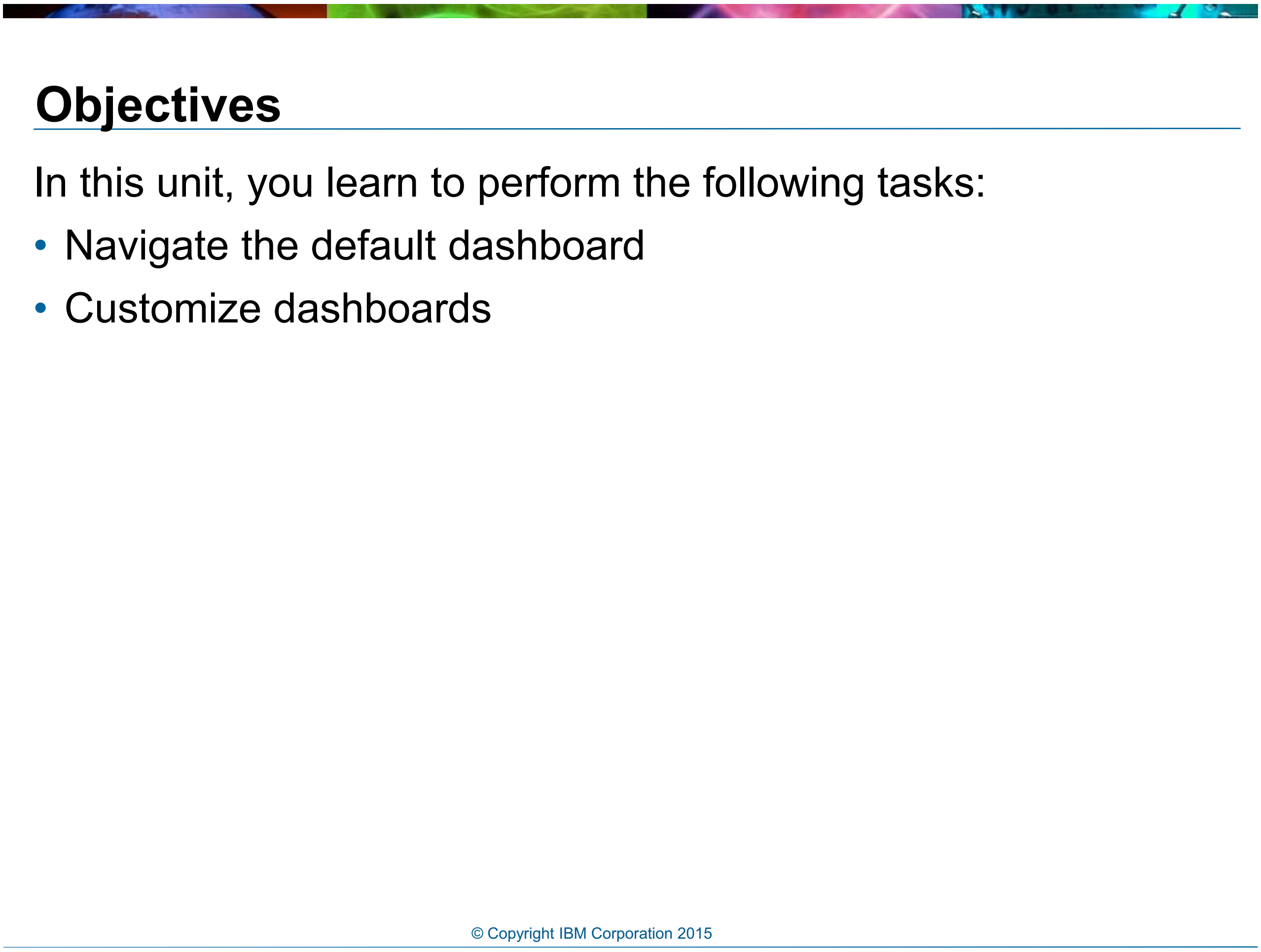


## Using the QRadar SIEM dashboard

QRadar SIEM displays the **Dashboard** tab when you sign in. Multiple items on a dashboard display information about activities of systems in your network. The items enable you to focus on specific areas of interest such as security or network operations. You can customize each dashboard to meet the needs and responsibilities of the analyst. This unit teaches you how to navigate and customize the dashboard tab.

References:

- *IBM Security QRadar SIEM Users Guide* http://ibm.co/1wvpSEE
- *IBM Security QRadar SIEM Administration Guide* http://ibm.co/1wvpSEE



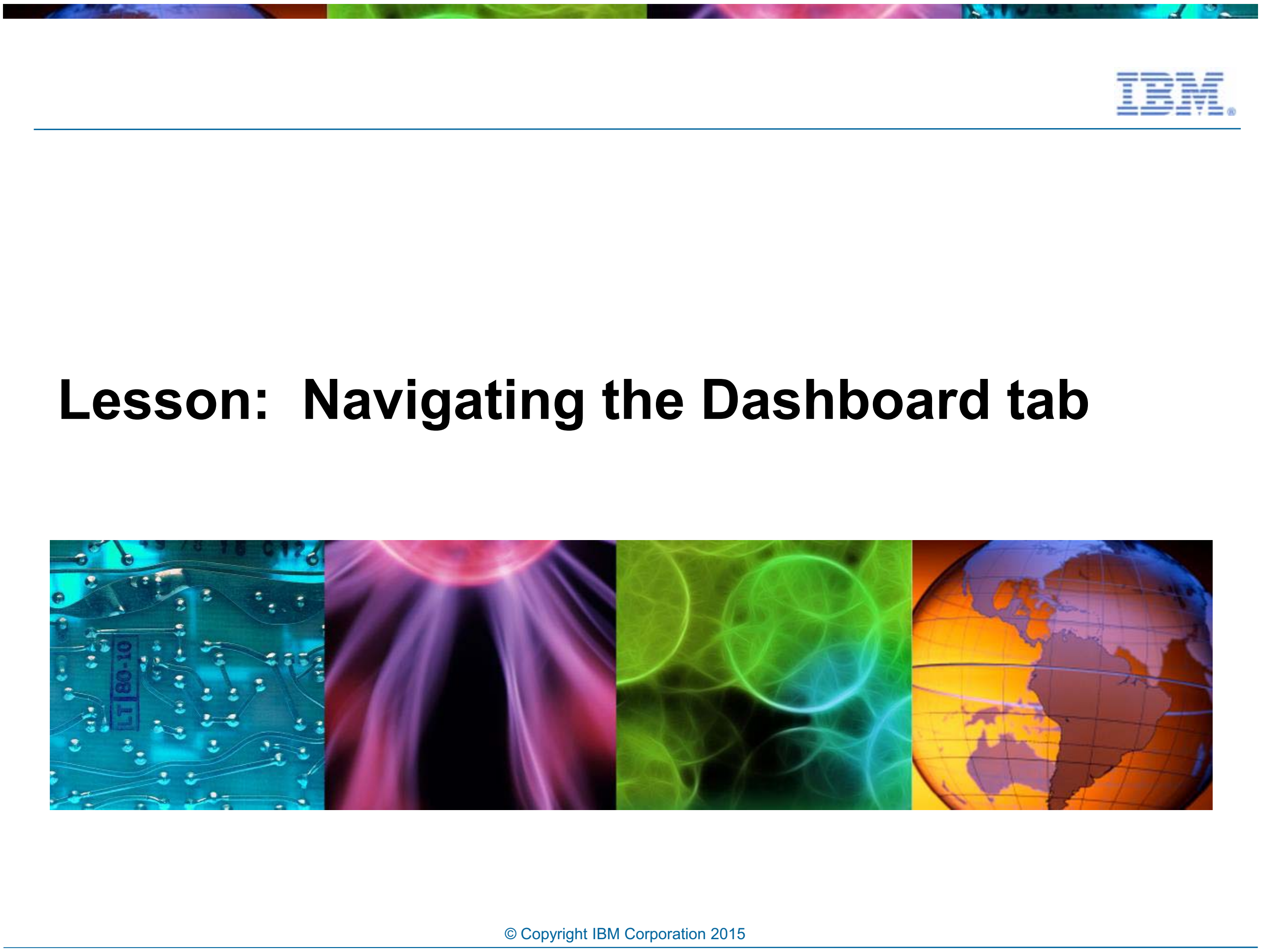
## Objectives

In this unit, you learn to perform the following tasks:

- Navigate the default dashboard
- Customize dashboards

*Objectives*

# Lesson 1  Navigating the Dashboard tab



Lesson:  Navigating the Dashboard tab

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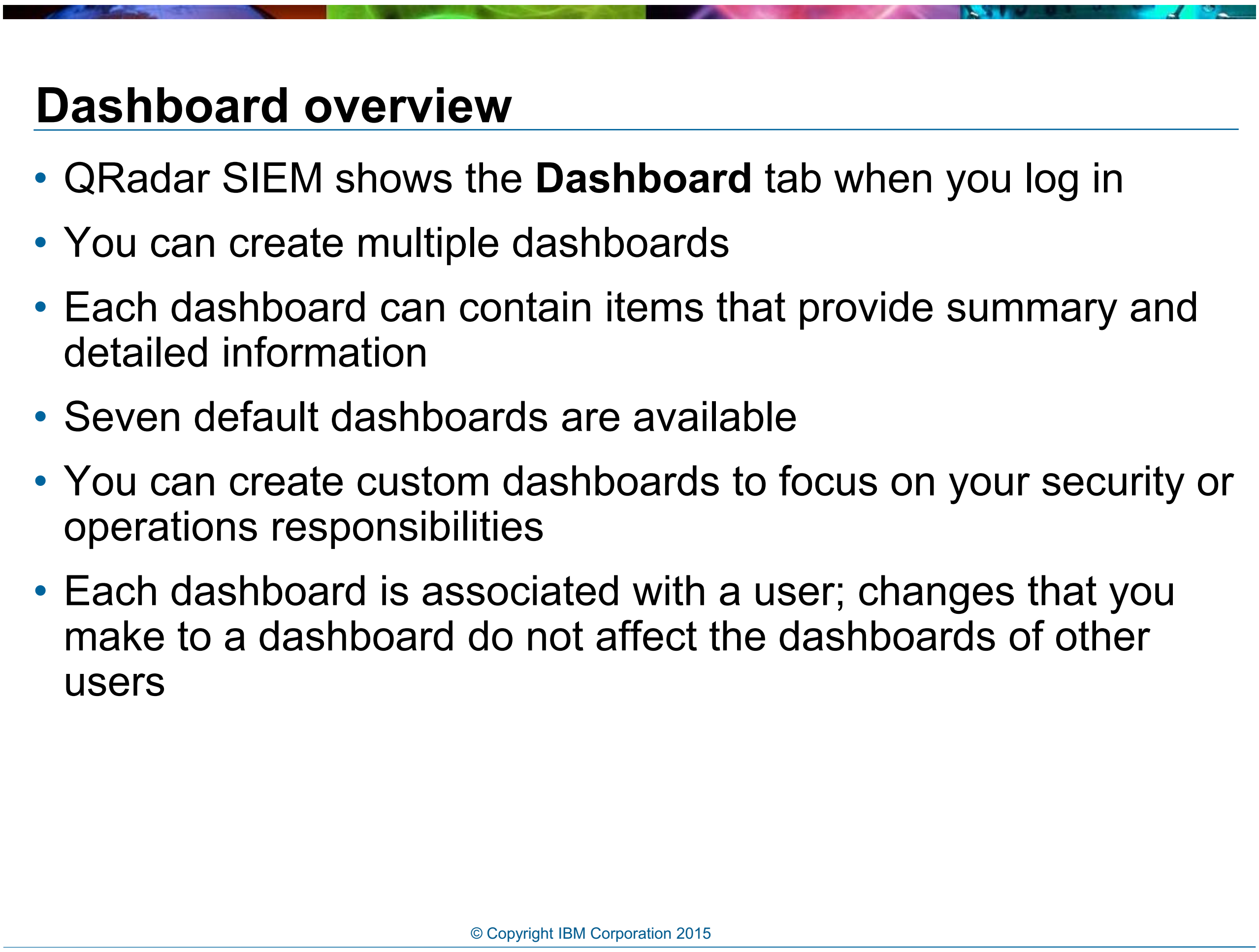
The **Dashboard** tab is the default view when you sign in to QRadar SIEM. In this lesson, you learn how to navigate the QRadar SIEM user interface and **Dashboard** tab by performing the following tasks:

- Locate the tabs in QRadar SIEM
- Use QRadar SIEM menu options
- Access context-sensitive help
- Refresh the dashboard

References:

- *IBM Security QRadar SIEM Users Guide* http://ibm.co/1wvpSEE
- *IBM Security QRadar SIEM Administration Guide* http://ibm.co/1wvpSEE



## Dashboard overview

- QRadar SIEM shows the **Dashboard** tab when you log in
- You can create multiple dashboards
- Each dashboard can contain items that provide summary and detailed information
- Seven default dashboards are available
- You can create custom dashboards to focus on your security or operations responsibilities
- Each dashboard is associated with a user; changes that you make to a dashboard do not affect the dashboards of other users

*Dashboard overview*

# Instructor demonstration of the dashboard

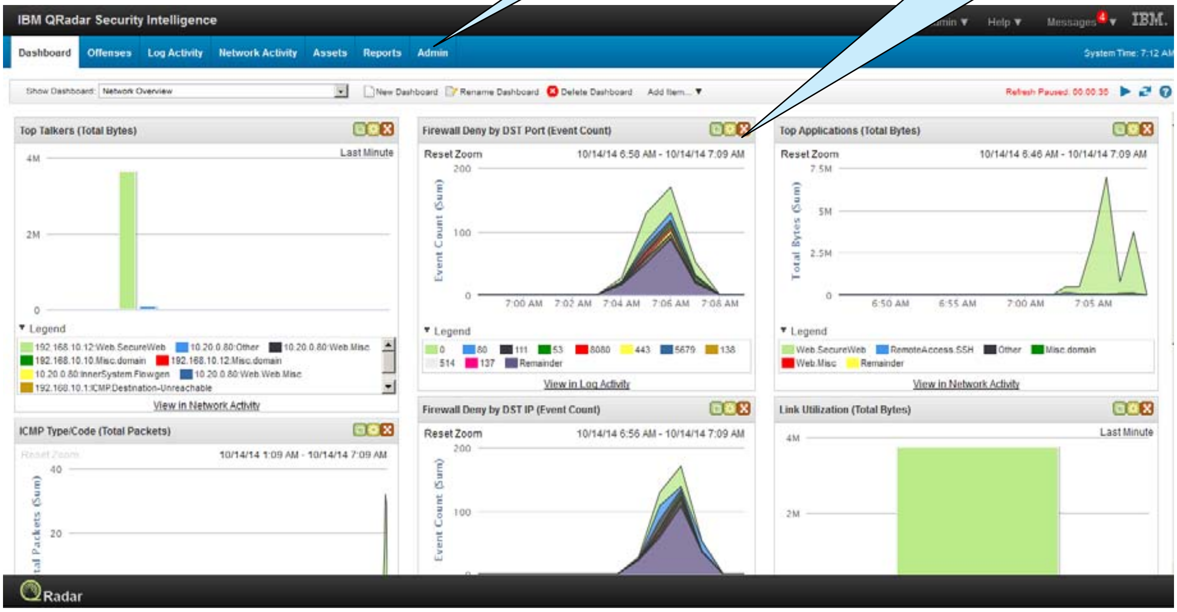
*Instructor demonstration of the dashboard*

# Default dashboard

Click a tab to load it

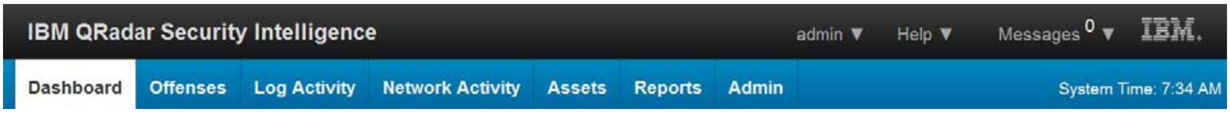
Tabs

Tables and charts



*Default dashboard*

# QRadar SIEM tabs



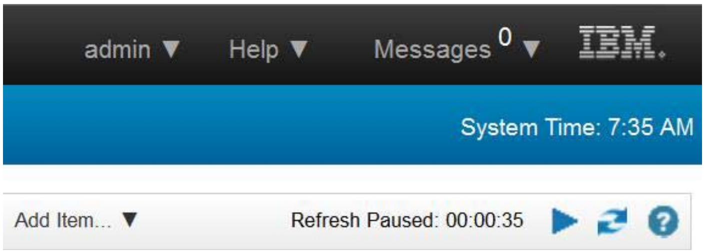
Use tabs to navigate the primary QRadar SIEM functions

- **Dashboard**: The initial summary view
- **Offenses**: Displays offenses; list of prioritized incidents
- **Log Activity**: Query and display events
- **Network Activity**: Query and display flows
- **Assets**: Query and display information about systems in your network
- **Reports**: Create templates and generate reports
- **Admin**: Administrative system management

*QRadar SIEM tabs*

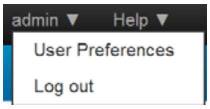
The user interface (UI) in QRadar SIEM includes a series of tabs that you use to navigate and focus on specific slices of the collected, analyzed, and displayed data.

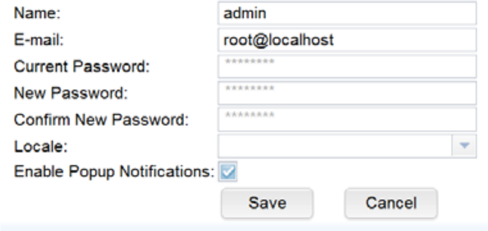
# Other menu options



The dashboard has the following additional menu options

- **User Preferences**
- **Help**
- **Log out**





Name: admin
E-mail: root@localhost
Current Password: ********
New Password: ********
Confirm New Password: ********
Locale:
Enable Popup Notifications: ☑

*Other menu options*

You can see these additional menu options:

- **User Preferences**: Users can change their password here if they authenticate with the local system authentication of QRadar SIEM. Users cannot change the password here if QRadar SIEM uses RADIUS, TACACS, Active Directory, or LDAP for their authentication.

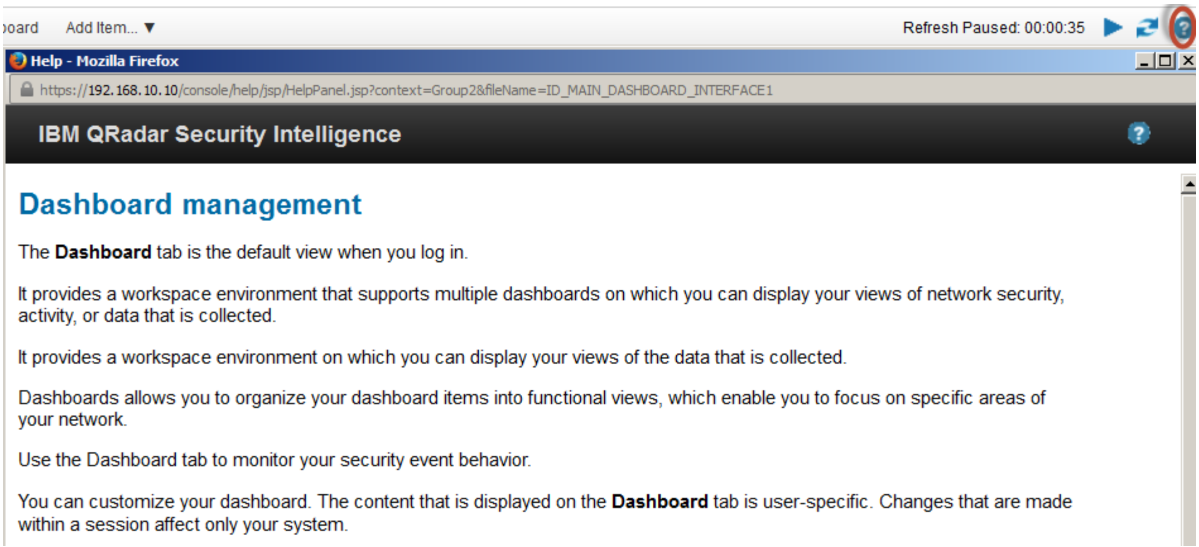
  In most deployments, the user *admin* authenticates with the local system authentication of QRadar SIEM even if other users use external authentication. Therefore, user *admin* usually can change his or her password in the User Preferences of QRadar SIEM.

**Note:** Refer to the *IBM Security QRadar SIEM Administration Guide* (http://ibm.co/1wvpSEE) for further details.

- **Help**: Opens the page-level help documentation.
- **Log out**: Closes the web session and logs out the user.
- **Messages:** Opens the system notification center.

# Context-sensitive help

Click the question mark in any window to access help for the current page



https://192.168.10.10/console/help/jsp/HelpPanel.jsp?context=Group2&fileName=ID_MAIN_DASHBOARD_INTERFACE1

## Dashboard management

The **Dashboard** tab is the default view when you log in.

It provides a workspace environment that supports multiple dashboards on which you can display your views of network security, activity, or data that is collected.

It provides a workspace environment on which you can display your views of the data that is collected.

Dashboards allows you to organize your dashboard items into functional views, which enable you to focus on specific areas of your network.

Use the Dashboard tab to monitor your security event behavior.

You can customize your dashboard. The content that is displayed on the **Dashboard** tab is user-specific. Changes that are made within a session affect only your system.

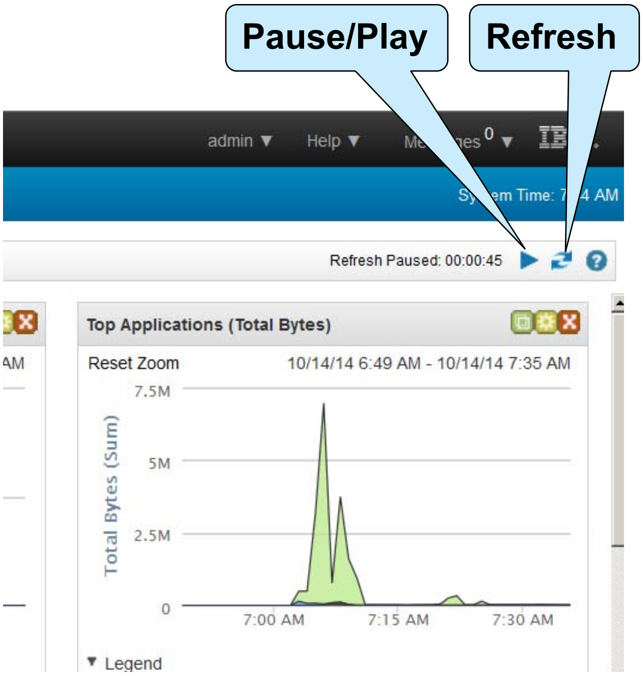
*Context-sensitive help*

You can access page-level help in the following ways:

- View the help text in the banner for an index of all help.
- Right-click the question mark icon (?) for context-sensitive help.

# Dashboard refresh

- In the displayed dashboard, events and flows refresh every minute unless you click **Pause**
- Use the **Refresh** button to manually refresh the displayed data

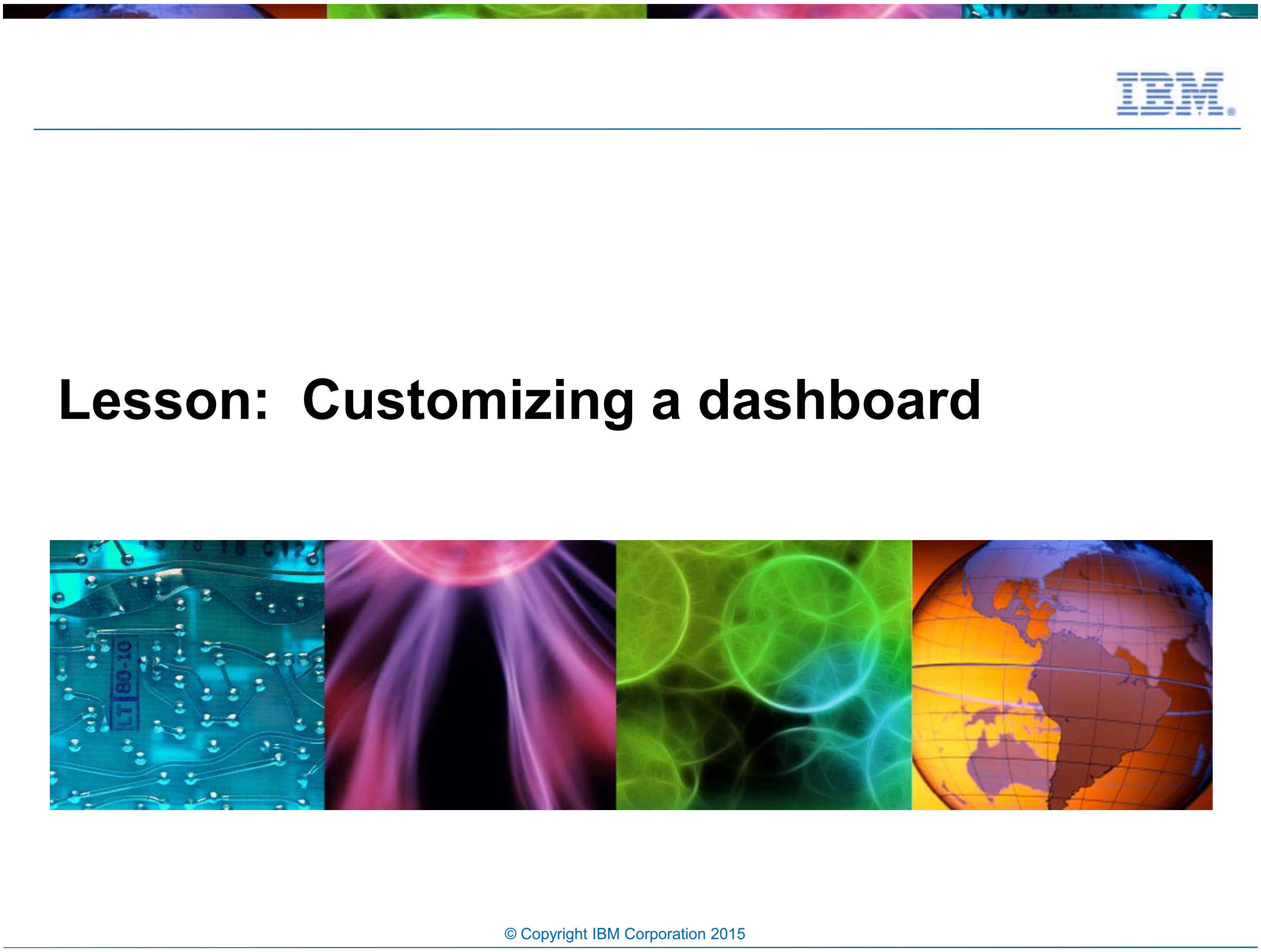


*Dashboard refresh*

The dashboard can display table, bar, pie, and time-series charts. By default, QRadar SIEM refreshes data from the event and flow processors every minute. The user can manually refresh at any time, resetting the displayed countdown to 60 seconds, but data results returned are from the prior minute to match the system refresh cycle for the event and flow processors. If the refresh clock is, for example, at 55 seconds and the user manually refreshes, the data displayed still originates from the earlier cycle. QRadar SIEM always refreshes automatically at the 1-minute mark.

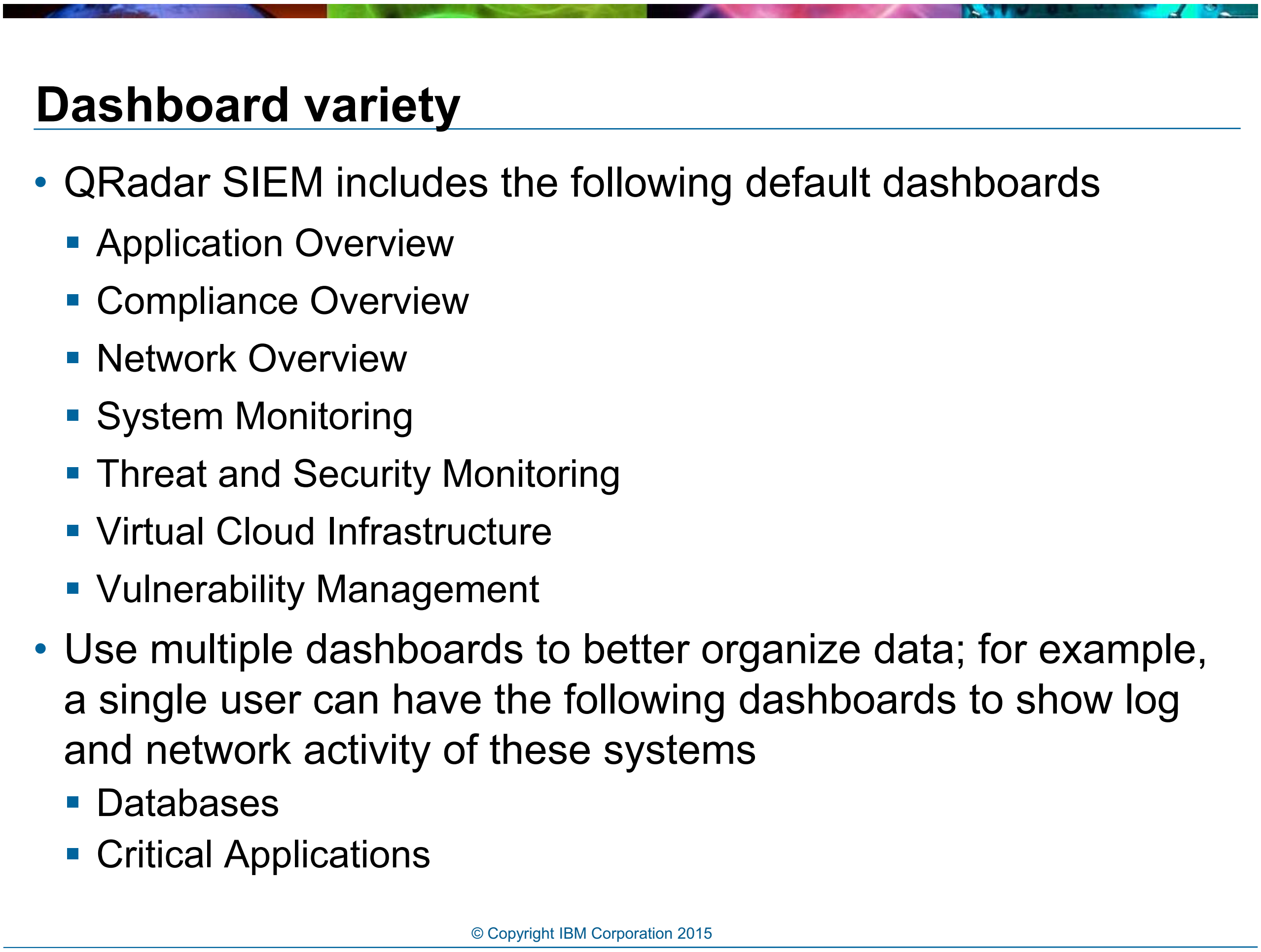
The **Pause** button stops only the display refresh. QRadar SIEM continues to update and process in the background.

# Lesson 2  Customizing a dashboard



## Lesson:  Customizing a dashboard

You can customize dashboards to display user-specific information. In this lesson, you learn how to create a customized dashboard and manage dashboard items.



## Dashboard variety

- QRadar SIEM includes the following default dashboards
  - Application Overview
  - Compliance Overview
  - Network Overview
  - System Monitoring
  - Threat and Security Monitoring
  - Virtual Cloud Infrastructure
  - Vulnerability Management
- Use multiple dashboards to better organize data; for example, a single user can have the following dashboards to show log and network activity of these systems
  - Databases
  - Critical Applications

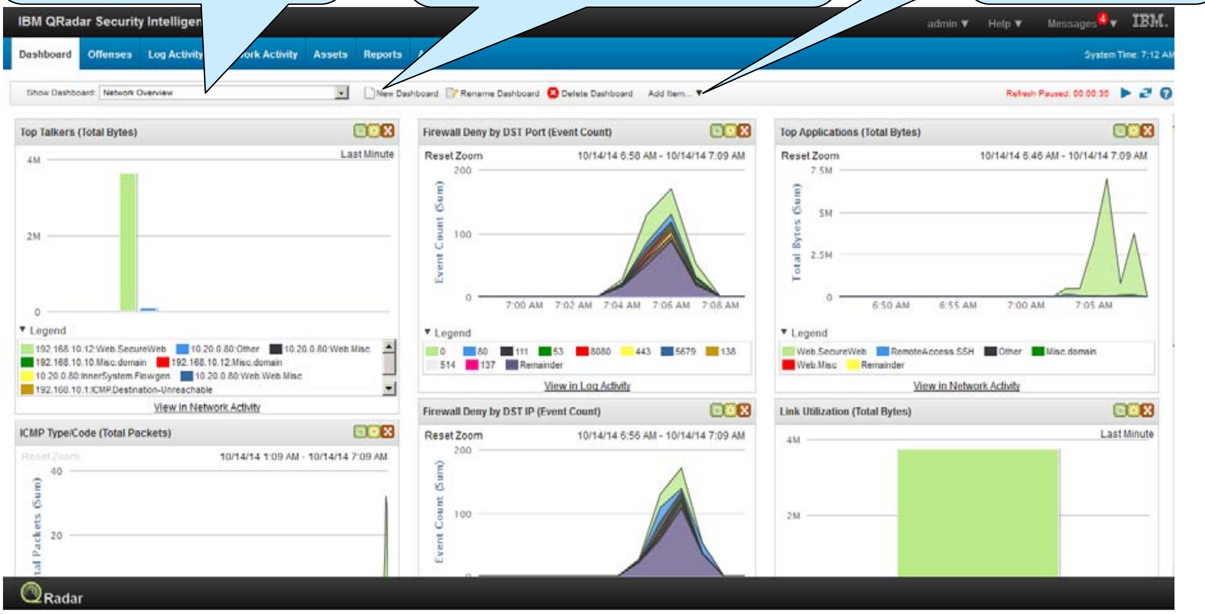
*Dashboard variety*

# Creating a custom dashboard

**Show Dashboard:** Select a dashboard to view

**New Dashboard:** Create a new dashboard empty of items

**Add item:** Add an item to dashboard


IBM QRadar Security Intelligen
admin ▾
Help ▾
Messages ▾
IBM.
Dashboard
Offenses
Log Activity
ork Activity
Assets
Reports
System Time: 7:12 AM
Show Dashboard: Network Overview
New Dashboard
Rename Dashboard
Delete Dashboard
Add Item... ▾
Refresh Paused: 00:00:35
Top Talkers (Total Bytes)
Last Minute
View in Network Activity
Firewall Deny by DST Port (Event Count)
Reset Zoom
10/14/14 6:58 AM - 10/14/14 7:09 AM
Event Count (Sum)
View in Log Activity
Top Applications (Total Bytes)
Reset Zoom
10/14/14 6:46 AM - 10/14/14 7:09 AM
Total Bytes (Sum)
View in Network Activity
ICMP Type/Code (Total Packets)
10/14/14 1:09 AM - 10/14/14 7:09 AM
Firewall Deny by DST IP (Event Count)
Reset Zoom
10/14/14 6:56 AM - 10/14/14 7:09 AM
Link Utilization (Total Bytes)
Last Minute
Legend
QRadar

*Creating a custom dashboard*

To create a custom dashboard, perform the following steps:

1. Click the **New Dashboard** icon.

   A new Dashboard window opens.

2. In the **Name** field, enter a name. You can enter up to 65 characters.

3. In the **Description** field, enter a description. You can enter up to 255 characters.

4. Click **OK**.

   The new dashboard opens on the **Dashboard** tab and is listed in the **Show Dashboard** list. The new dashboard is empty.

To add items to the new dashboard, perform the following steps:

1. From the **Show Dashboard** list, select the dashboard where you want the item added.

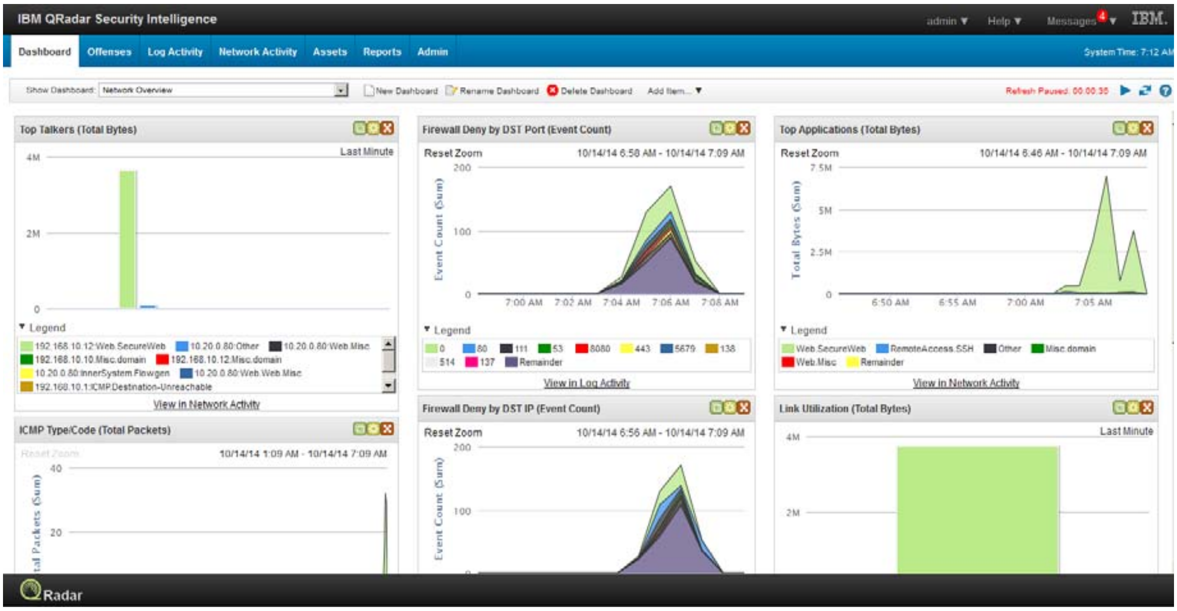
2. From the **Add Item** list, select an item.

   The item displays on the dashboard.

3. Repeat until you have added all the items you want to the dashboard.

# Items

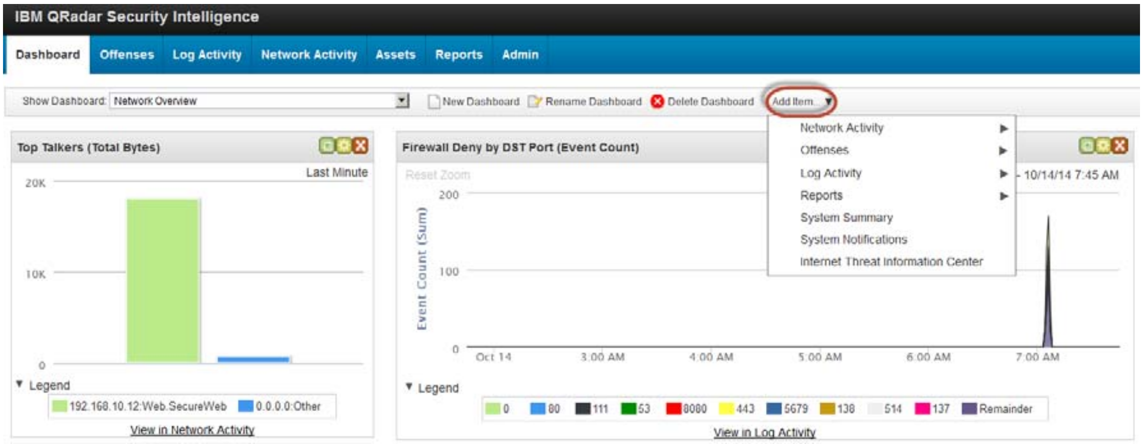
## Include no more than 15 items on each dashboard


IBM QRadar Security Intelligence
admin ▼ Help ▼ Messages 4 ▼ IBM.
Dashboard Offenses Log Activity Network Activity Assets Reports Admin
System Time: 7:12 AM
Show Dashboard: Network Overview
New Dashboard Rename Dashboard Delete Dashboard Add Item... ▼
Refresh Paused: 00:00:35
Top Talkers (Total Bytes)
Last Minute
4M
2M
0
Legend
192.168.10.12:Web.SecureWeb
10.20.0.80:Other
10.20.0.80:Web.Misc
192.168.10.10:Misc.domain
192.168.10.12:Misc.domain
10.20.0.80:InnerSystem.Flowgen
10.20.0.80:Web.Web.Misc
192.168.10.1:ICMP.Destination-Unreachable
View in Network Activity
Firewall Deny by DST Port (Event Count)
Reset Zoom
10/14/14 6:58 AM - 10/14/14 7:09 AM
200
100
0
Event Count (Sum)
7:00 AM
7:02 AM
7:04 AM
7:06 AM
7:08 AM
Legend
0
80
111
53
8080
443
5679
138
514
137
Remainder
View in Log Activity
Top Applications (Total Bytes)
Reset Zoom
10/14/14 6:46 AM - 10/14/14 7:09 AM
7.5M
5M
2.5M
0
Total Bytes (Sum)
6:50 AM
6:55 AM
7:00 AM
7:05 AM
Legend
Web.SecureWeb
RemoteAccess.SSH
Other
Misc.domain
Web.Misc
Remainder
View in Network Activity
ICMP Type/Code (Total Packets)
Reset Zoom
10/14/14 1:09 AM - 10/14/14 7:09 AM
40
20
tal Packets (Sum)
Firewall Deny by DST IP (Event Count)
Reset Zoom
10/14/14 6:56 AM - 10/14/14 7:09 AM
200
100
Event Count (Sum)
Link Utilization (Total Bytes)
Last Minute
4M
2M
QRadar

*Items*

# Managing dashboard items

Click **Add Item** to place additional objects on the dashboard
Click the green icon to detach the object from the interface to the desktop
Click the yellow icon to modify the settings of an object
Click the red icon to delete an object from the dashboard



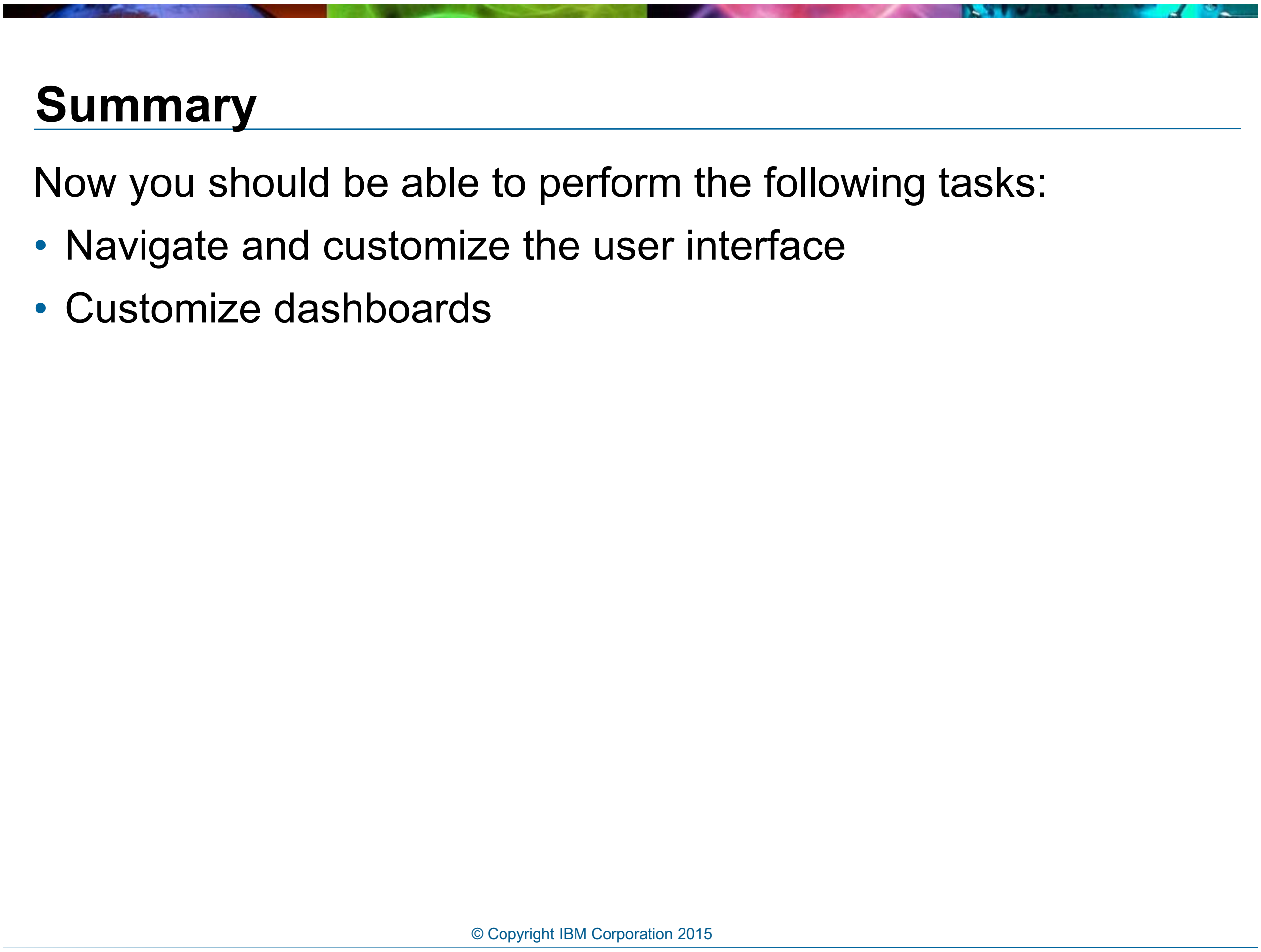
*Managing dashboard items*

# Student exercise

Use the procedures in the *Student Exercises Guide* to create a new dashboard

*Student exercises*

Perform the exercises for this unit.



## Summary

Now you should be able to perform the following tasks:

- Navigate and customize the user interface
- Customize dashboards

*Summary*

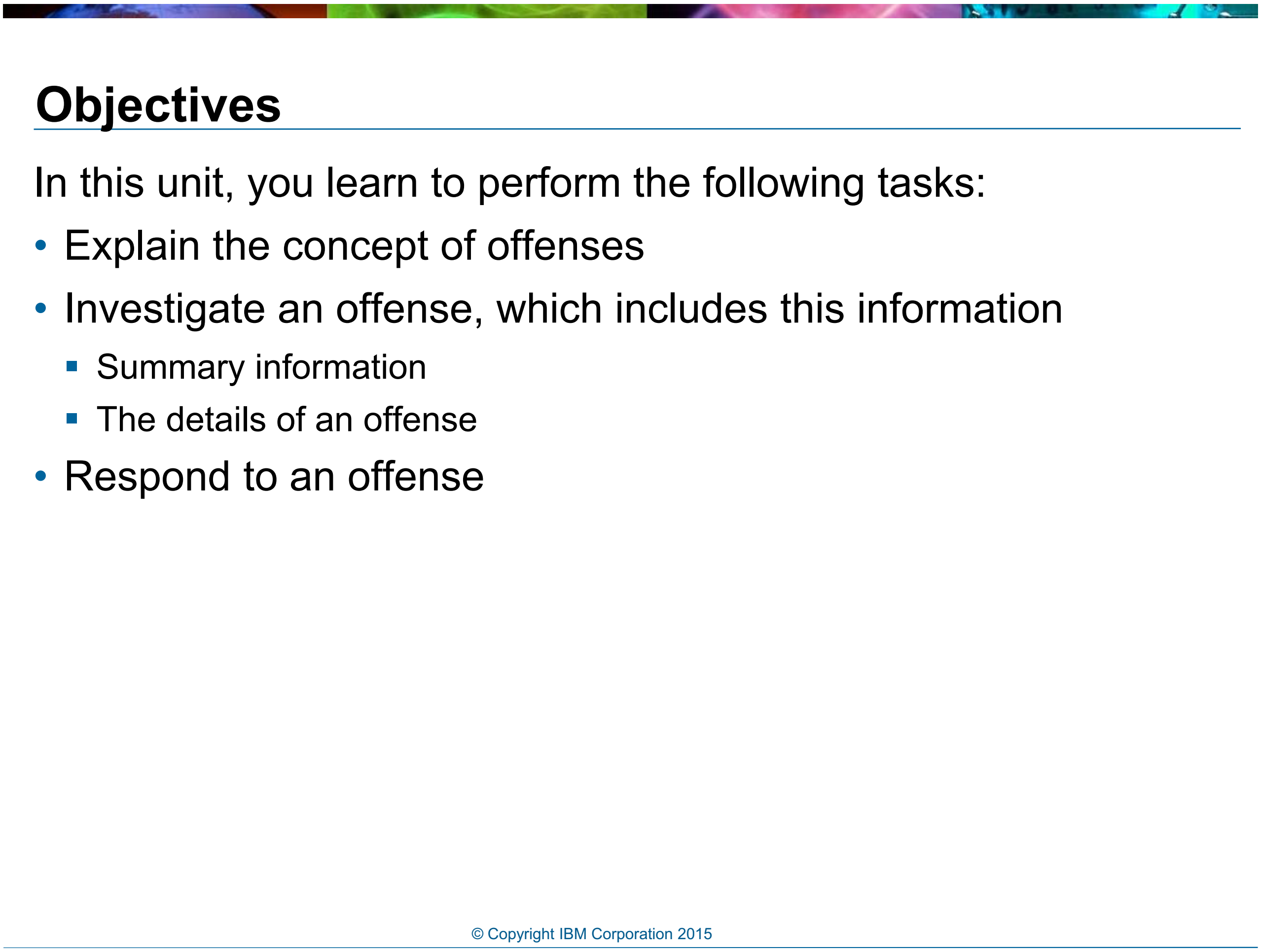
# 4 Investigating an offense that is triggered by events

Investigating an offense that is triggered by events

QRadar SIEM correlates events and flows into an offense if it assumes suspicious activity. This unit teaches you how to investigate the information that is contained in an offense and respond to an offense.

References:

- *QRadar SIEM Users Guide* http://ibm.co/1wvpSEE
- *QRadar SIEM Administration Guide* http://ibm.co/1wvpSEE



## Objectives

In this unit, you learn to perform the following tasks:

- Explain the concept of offenses
- Investigate an offense, which includes this information
  - Summary information
  - The details of an offense
- Respond to an offense

*Objectives*

# Lesson 1  Offenses overview

Lesson:  Offenses overview

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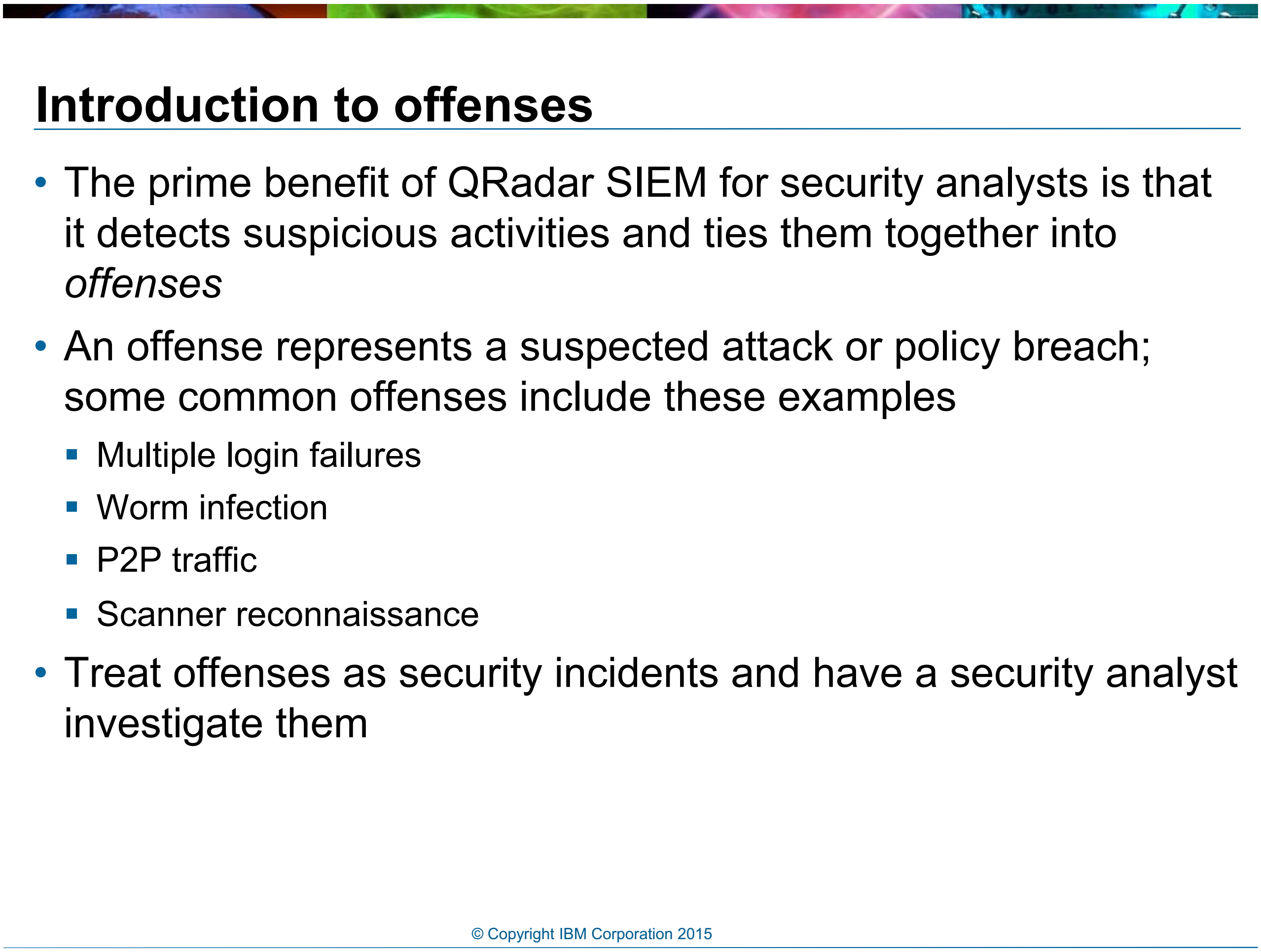
By creating an offense, QRadar SIEM alerts to suspicious activities. In this lesson, you learn the significance of offenses and what offenses represent, including common offenses and their priority rating.



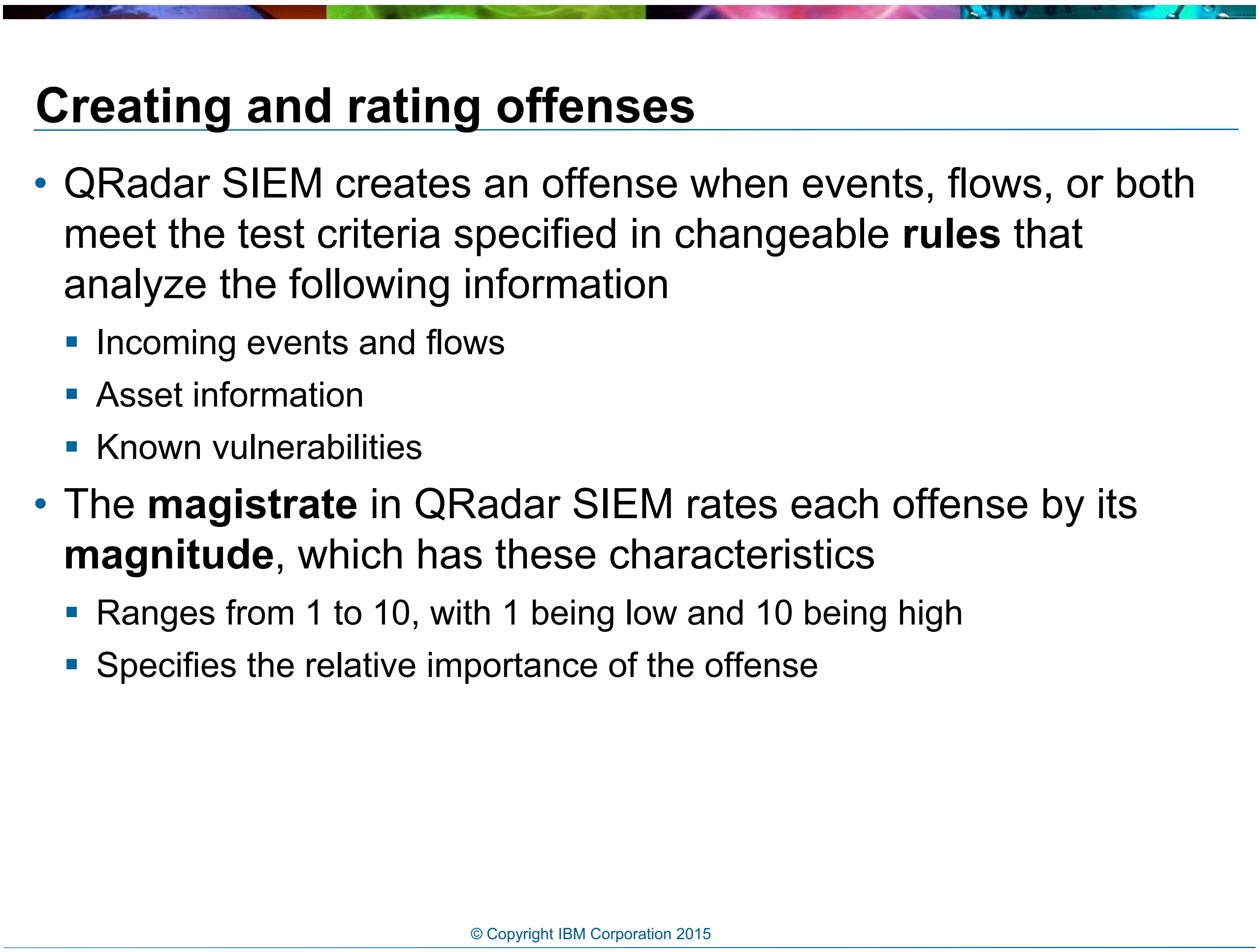
## Introduction to offenses

- The prime benefit of QRadar SIEM for security analysts is that it detects suspicious activities and ties them together into *offenses*
- An offense represents a suspected attack or policy breach; some common offenses include these examples
  - Multiple login failures
  - Worm infection
  - P2P traffic
  - Scanner reconnaissance
- Treat offenses as security incidents and have a security analyst investigate them

*Introduction to offenses*

The following list includes some of the most common offenses that a typical security analyst investigates:

- Clear Text Application Usage
- Remote Desktop Access from the Internet
- Connection to a remote proxy or anonymization service
- SSH or Telnet detected on Non-Standard Port
- Large Outbound Transfer
- Communication to a known Bot Command and Control
- Local IRC Server detected



## Creating and rating offenses

- QRadar SIEM creates an offense when events, flows, or both meet the test criteria specified in changeable **rules** that analyze the following information
  - Incoming events and flows
  - Asset information
  - Known vulnerabilities
- The **magistrate** in QRadar SIEM rates each offense by its **magnitude**, which has these characteristics
  - Ranges from 1 to 10, with 1 being low and 10 being high
  - Specifies the relative importance of the offense

*Creating and rating offenses*

The magistrate reevaluates the offense magnitude at scheduled intervals and also when events are added to the offense.

# Lesson 2  Using summary information to investigate an offense

## Lesson:  Using summary information to investigate an offense

An offense bundles a wealth of information about a suspicious activity. In this lesson, you learn how to use offense summary information to begin investigating an offense.

References:

- *QRadar SIEM Users Guide* http://ibm.co/1wvpSEE
- *QRadar SIEM Administration Guide* http://ibm.co/1wvpSEE

# Instructor demonstration of offense parameters

This demonstration uses an offense that alerts to a suspected ICMP scanner as an example

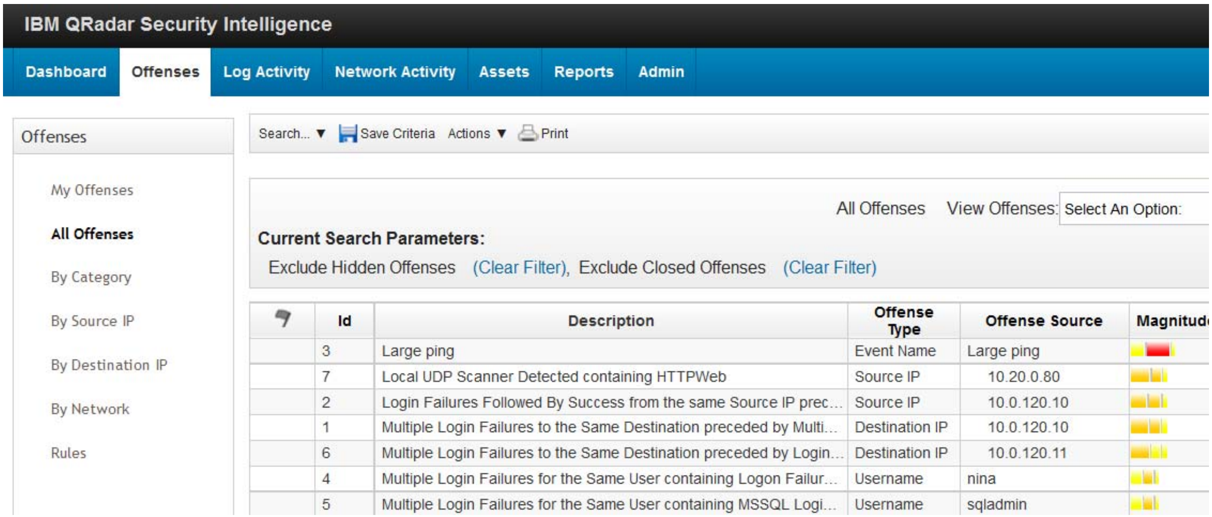
Investigating this kind of offense is a typical part of a security analyst's job

*Instructor demonstration of offense parameters*

# Selecting an offense to investigate

Offenses are listed in these locations

- In Dashboard items
- In the Offense Manager on the **Offenses** tab



**Current Search Parameters:**
Exclude Hidden Offenses (Clear Filter), Exclude Closed Offenses (Clear Filter)

| | Id | Description | Offense Type | Offense Source | Magnitud |
|---|---|---|---|---|---|
| | 3 | Large ping | Event Name | Large ping | |
| | 7 | Local UDP Scanner Detected containing HTTPWeb | Source IP | 10.20.0.80 | |
| | 2 | Login Failures Followed By Success from the same Source IP prec... | Source IP | 10.0.120.10 | |
| | 1 | Multiple Login Failures to the Same Destination preceded by Multi... | Destination IP | 10.0.120.10 | |
| | 6 | Multiple Login Failures to the Same Destination preceded by Login... | Destination IP | 10.0.120.11 | |
| | 4 | Multiple Login Failures for the Same User containing Logon Failur... | Username | nina | |
| | 5 | Multiple Login Failures for the Same User containing MSSQL Logi... | Username | sqladmin | |

*Selecting an offense to investigate*

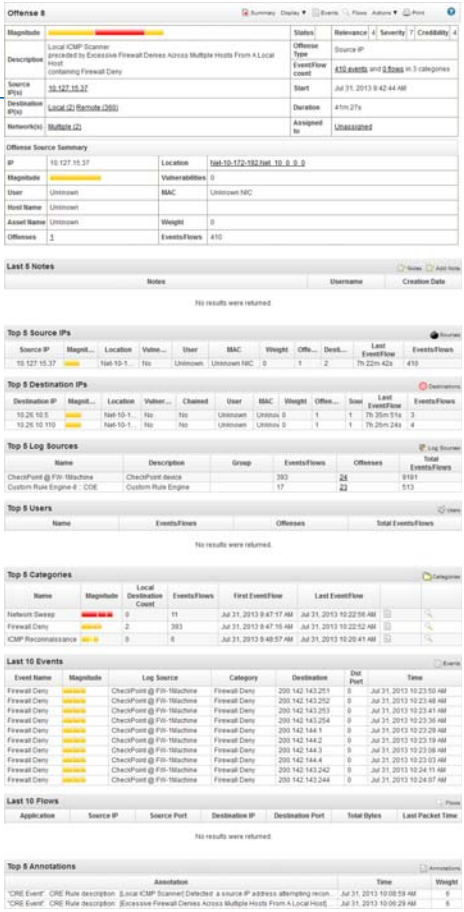
This slide presents the **Offenses** tab:

- The default view of the **Offenses** tab is called **Offense Manager**.
- Double-click an offense to view the detailed **Offense Summary** of that offense.
- Use the left navigation to view the offenses from different perspectives. For example, select **Offenses by Source IP** or **Offenses by Destination IP** to view this information:
  - Repeat offenders
  - IP addresses that generate a multitude of events
  - Systems that are continually under attack
- Use the **Search** menu to find offenses according to search criteria.

## Offense Summary window

The offense summary displays information about the ICMP scanning offense

The remainder of the unit examines the window sections in the same way as the security analyst does to investigate an offense.



Offense 8

| | | | | |
|---|---|---|---|---|
| Magnitude | | Status | | Relevance 4 Severity 7 Credibility 4 |
| Description | Local ICMP Scanner<br>preceded by Excessive Firewall Denies Across Multiple Hosts From A Local Host<br>containing Firewall Deny | Offense Type | | Source IP |
| | | Event/Flow count | | 410 events and 0 flows in 3 categories |
| Source IP(s) | 10.127.15.37 | Start | | Jul 31, 2013 9:42:44 AM |
| Destination IP(s) | Local (2) Remote (360) | Duration | | 41m 27s |
| Network(s) | Multiple (2) | Assigned to | | Unassigned |

Offense Source Summary

| | | | |
|---|---|---|---|
| IP | 10.127.15.37 | Location | Net-10-172-192.Net_10_0_0_0 |
| Magnitude | | Vulnerabilities | 0 |
| User | Unknown | MAC | Unknown NIC |
| Host Name | Unknown | | |
| Asset Name | Unknown | Weight | 0 |
| Offenses | 1 | Events/Flows | 410 |

Last 5 Notes

| Notes | Username | Creation Date |
|---|---|---|

No results were returned.

Top 5 Source IPs

| Source IP | Magnit... | Location | Vulne... | User | MAC | Weight | Offe... | Desti... | Last Event/Flow | Events/Flows |
|---|---|---|---|---|---|---|---|---|---|---|
| 10.127.15.37 | | Net-10-1... | No | Unknown | Unknown NIC | 0 | 1 | 2 | 7h 22m 42s | 410 |

Top 5 Destination IPs

| Destination IP | Magnit... | Location | Vulner... | Chained | User | MAC | Weight | Offen... | Sour | Last Event/Flow | Events/Flows |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.26.10.5 | | Net-10-1... | No | No | Unknown | Unknov | 0 | 1 | 1 | 7h 35m 51s | 3 |
| 10.26.10.110 | | Net-10-1... | No | No | Unknown | Unknov | 0 | 1 | 1 | 7h 26m 24s | 4 |

Top 5 Log Sources

| Name | Description | Group | Events/Flows | Offenses | Total Events/Flows |
|---|---|---|---|---|---|
| CheckPoint @ FW-1Machine | CheckPoint device | | 393 | 24 | 9181 |
| Custom Rule Engine-8 :: COE | Custom Rule Engine | | 17 | 23 | 513 |

Top 5 Users

| Name | Events/Flows | Offenses | Total Events/Flows |
|---|---|---|---|

No results were returned.

Top 5 Categories

| Name | Magnitude | Local Destination Count | Events/Flows | First Event/Flow | Last Event/Flow | | |
|---|---|---|---|---|---|---|---|
| Network Sweep | | 0 | 11 | Jul 31, 2013 9:47:17 AM | Jul 31, 2013 10:22:56 AM | | |
| Firewall Deny | | 2 | 393 | Jul 31, 2013 9:47:16 AM | Jul 31, 2013 10:22:52 AM | | |
| ICMP Reconnaissance | | 0 | 6 | Jul 31, 2013 9:48:57 AM | Jul 31, 2013 10:20:41 AM | | |

Last 10 Events

| Event Name | Magnitude | Log Source | Category | Destination | Dst Port | Time |
|---|---|---|---|---|---|---|
| Firewall Deny | | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.143.251 | 0 | Jul 31, 2013 10:23:50 AM |
| Firewall Deny | | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.143.252 | 0 | Jul 31, 2013 10:23:48 AM |
| Firewall Deny | | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.143.253 | 0 | Jul 31, 2013 10:23:41 AM |
| Firewall Deny | | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.143.254 | 0 | Jul 31, 2013 10:23:36 AM |
| Firewall Deny | | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.144.1 | 0 | Jul 31, 2013 10:23:29 AM |
| Firewall Deny | | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.144.2 | 0 | Jul 31, 2013 10:23:19 AM |
| Firewall Deny | | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.144.3 | 0 | Jul 31, 2013 10:23:08 AM |
| Firewall Deny | | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.144.4 | 0 | Jul 31, 2013 10:23:03 AM |
| Firewall Deny | | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.143.242 | 0 | Jul 31, 2013 10:24:11 AM |
| Firewall Deny | | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.143.244 | 0 | Jul 31, 2013 10:24:07 AM |

Last 10 Flows

| Application | Source IP | Source Port | Destination IP | Destination Port | Total Bytes | Last Packet Time |
|---|---|---|---|---|---|---|

No results were returned.

Top 5 Annotations

| Annotation | Time | Weight |
|---|---|---|
| "CRE Event": CRE Rule description: [Local ICMP Scanner] Detected: a source IP address attempting recon... | Jul 31, 2013 10:08:59 AM | 6 |
| "CRE Event": CRE Rule description: [Excessive Firewall Denies Across Multiple Hosts From A Local Host] ... | Jul 31, 2013 10:06:29 AM | 6 |

*Offense Summary window*

TheOffense Summary window includes these sections:

- Offense Parameters
- Offense Source Summary
- Last 5 Notes
- Top 5 Source IPs
- Top 5 Destination IPs
- Top 5 Log Sources
- Top 5 Users
- Top 5 Categories
- Top 10 Events
- Top 10 Flows
- Top 5 Annotations

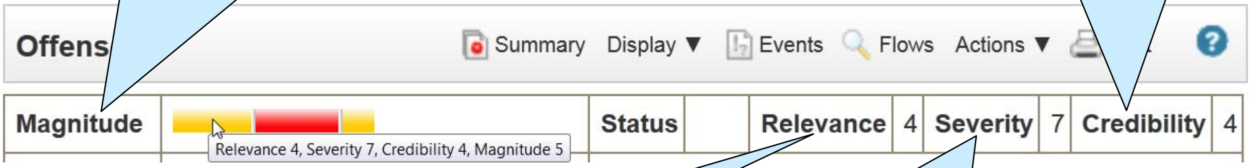
We review these sections in the remainder of the unit.

## Offense parameters (1 of 4)

Investigating an offense begins with the parameters at the top of the offense summary window

**Magnitude:**
Relative importance of the offense, as calculated from relevance, severity, and credibility

**Credibility:**
How valid is information from that source?
20% of magnitude



Magnitude | Relevance 4, Severity 7, Credibility 4, Magnitude 5 | Status | Relevance 4 | Severity 7 | Credibility 4

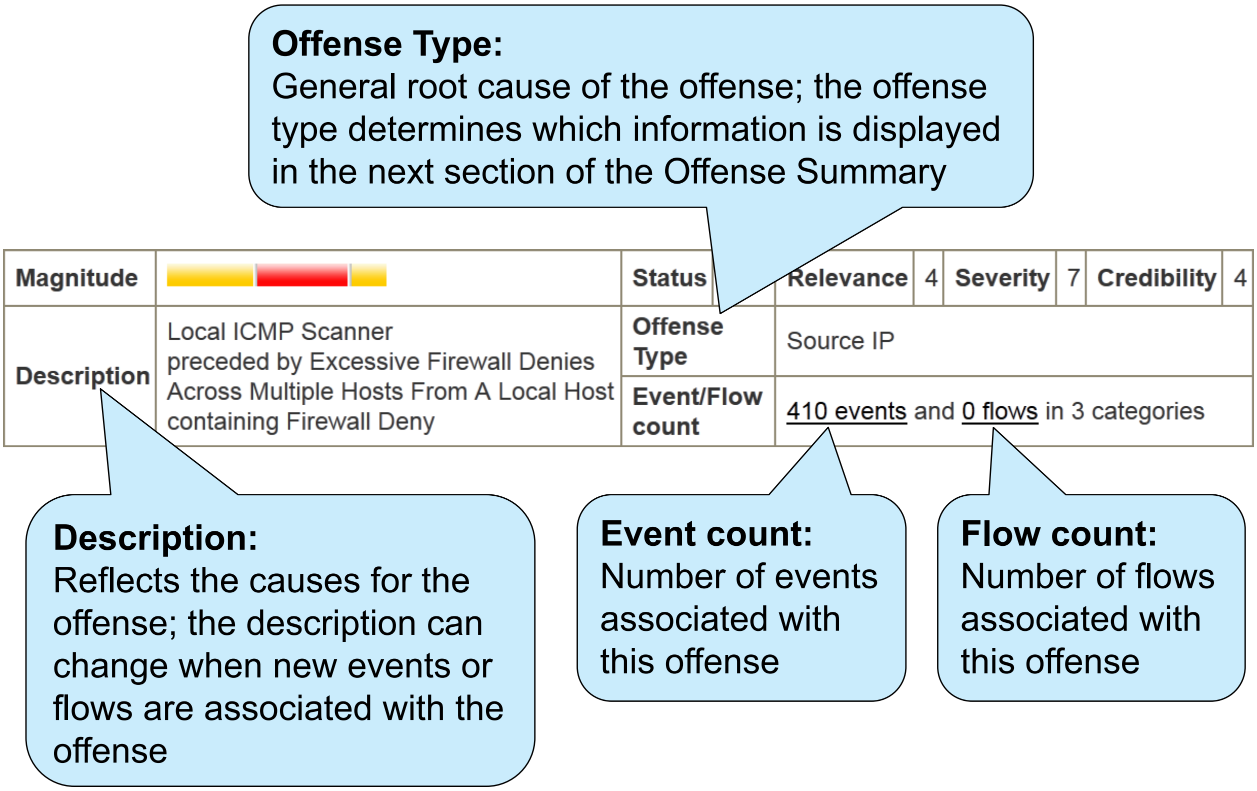
**Relevance:**
How important is the destination?
50% of magnitude

**Severity:**
How high is the potential damage to the destination?
30% of magnitude

*Offense parameters*

- **Magnitude**: Prioritizes offenses by importance. Security analysts cannot ignore less important offenses because they could indicate a real attack or policy breach.
- **Status**: The offense on the slide is in status *active*. QRadar SIEM does not display a status icon for the *active* status. Other statuses are indicated with an icon in the **Status** field.
- **Relevance**: Indicates the importance of the destination. Less important areas of the network have a lower relevance. QRadar SIEM determines the relevance by the weight of networks and assets. QRadar SIEM administrators configure the weight in the network hierarchy, remote networks, remote services, and asset profiles.
- **Severity**: Indicates the amount of threat an attack poses in relation to the vulnerability of the destination.
- **Credibility**: Indicates the reliability of the witness. Credibility increases if multiple sources report the same attack. QRadar SIEM administrators configure the credibility rating of log sources.

# Offense parameters (2 of 4)



| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Magnitude** | 🟨🟥🟨 | **Status** | | **Relevance** | 4 | **Severity** | 7 | **Credibility** | 4 |
| **Description** | Local ICMP Scanner<br>preceded by Excessive Firewall Denies Across Multiple Hosts From A Local Host containing Firewall Deny | **Offense Type** | Source IP | | | | | | |
| | | **Event/Flow count** | 410 events and 0 flows in 3 categories | | | | | | |

**Offense Type:**
General root cause of the offense; the offense type determines which information is displayed in the next section of the Offense Summary

**Description:**
Reflects the causes for the offense; the description can change when new events or flows are associated with the offense

**Event count:**
Number of events associated with this offense

**Flow count:**
Number of flows associated with this offense

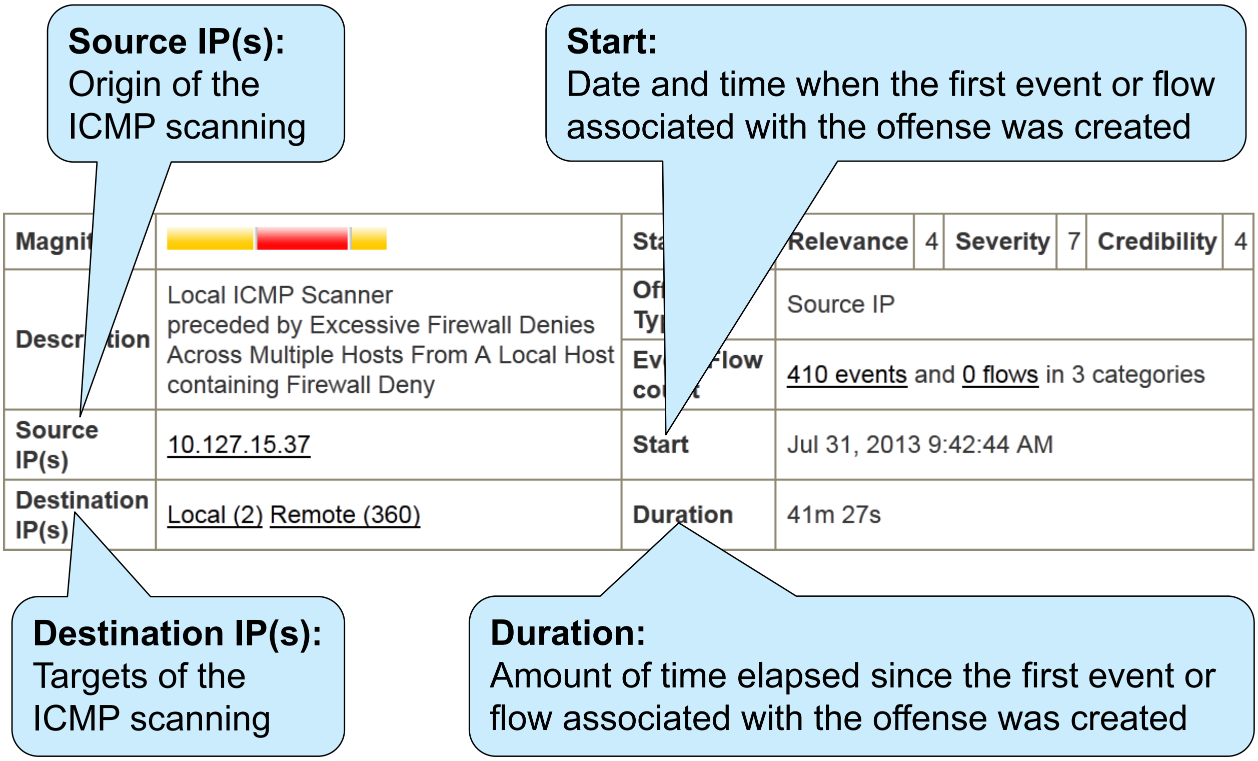
*Offense parameters (2 of 4)*

**Offense Type**: The rule that created the offense determines the one of the following Offense Types:

- Event Name
- Destination MAC Address
- Source Port
- Destination IPv6
- Rule
- Source IP Identity
- Source IP
- Username
- Log Source
- Destination Port
- Source ASN
- App ID
- Destination IP
- Source MAC Address
- Host Name
- Source IPv6
- Destination ASN

**ASN**: An **Autonomous System Number (ASN)** uniquely identifies one or more IP networks that have a single, clearly defined external routing policy. An ASN is required only if the autonomous system exchanges routing information with other autonomous systems on the Internet.

## Offense parameters (3 of 4)



**Source IP(s):**
Origin of the ICMP scanning

**Start:**
Date and time when the first event or flow associated with the offense was created

| Magni | 🟨🟥🟨 | Sta | Relevance 4 Severity 7 Credibility 4 |
|---|---|---|---|
| Descr tion | Local ICMP Scanner preceded by Excessive Firewall Denies Across Multiple Hosts From A Local Host containing Firewall Deny | Of Ty | Source IP |
| | | Ev Flow co t | 410 events and 0 flows in 3 categories |
| Source IP(s) | 10.127.15.37 | Start | Jul 31, 2013 9:42:44 AM |
| Destination IP(s) | Local (2) Remote (360) | Duration | 41m 27s |

**Destination IP(s):**
Targets of the ICMP scanning

**Duration:**
Amount of time elapsed since the first event or flow associated with the offense was created

*Offense parameters (3 of 4)*

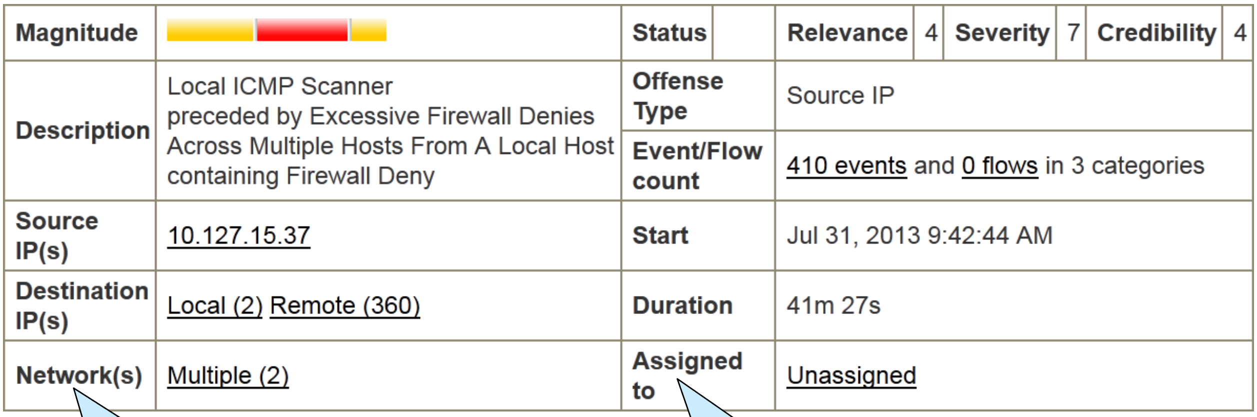
### About Source IPs

- To get more information about the IP address, right-click, left-click, or hold the mouse over the address.
- Offenses of type **Source IP** always originate from only one source IP address. Offenses of other types can have more than one source IP address. In those cases, the **Source IP(s)** field displays **Multiple(n)**, where *n* indicates the number of source IP addresses.
- Left-click **Multiple(n)** to view a list of the source IP addresses.

### About Destinations IPs

- If the offense has only one target, its IP address is displayed. To get more information about the IP address, right-click, left-click, or hold the mouse over it.
- If the offense has multiple targets, the following terms are displayed:
  - **Local (n)**: Local IP addresses that were targeted.
  - **Remote (n)**: Remote IP addresses that were targeted.
- Left-click an option to view a list of the local or remote IP addresses.

# Offense parameters (4 of 4)



| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Magnitude | 🟨🟥🟨 | Status | | Relevance | 4 | Severity | 7 | Credibility | 4 |
| Description | Local ICMP Scanner preceded by Excessive Firewall Denies Across Multiple Hosts From A Local Host containing Firewall Deny | Offense Type | Source IP | | | | | | |
| | | Event/Flow count | 410 events and 0 flows in 3 categories | | | | | | |
| Source IP(s) | 10.127.15.37 | Start | Jul 31, 2013 9:42:44 AM | | | | | | |
| Destination IP(s) | Local (2) Remote (360) | Duration | 41m 27s | | | | | | |
| Network(s) | Multiple (2) | Assigned to | Unassigned | | | | | | |

**Network(s):**
Local networks of the local Destination IPs that have been scanned

**Assigned to:**
QRadar SIEM user assigned to investigate this offense

*Offense parameters (4 of 4)*

## About Networks

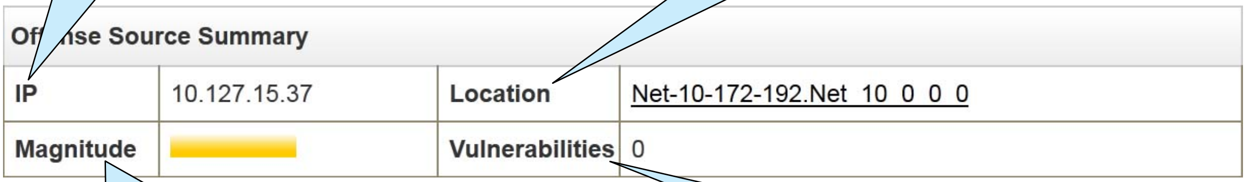
- QRadar SIEM considers all networks that are specified in the network hierarchy on the **Admin** tab as local.
- QRadar SIEM does not associate remote networks to an offense, even if they are specified as a Remote Network or Remote Service on the **Admin** tab.

## Offense Source Summary (1 of 4)

To the security analyst, the **Offense Source Summary** provides information about the origin of the ICMP scanning

**IP:**
Origin of the ICMP scanning

**Location:**
Network of the source IP address if it is local



Offense Source Summary

| | | | |
|---|---|---|---|
| **IP** | 10.127.15.37 | **Location** | Net-10-172-192.Net_10_0_0_0 |
| **Magnitude** | ▬ | **Vulnerabilities** | 0 |

**Magnitude:**
Indication about the level of risk that an IP address poses relative to other IP addresses

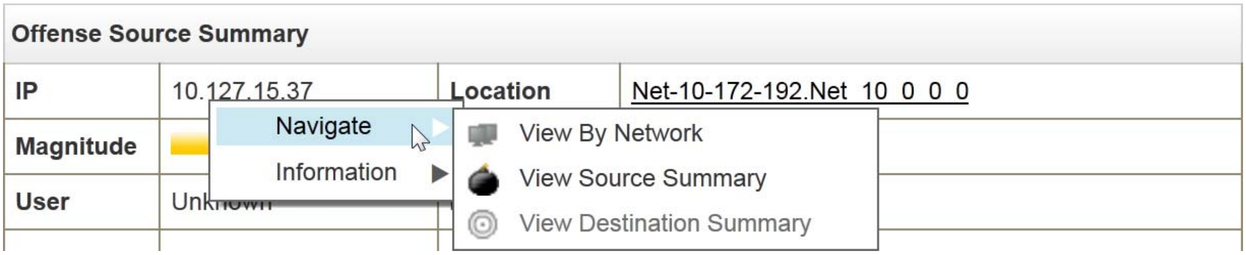
**Vulnerabilities:**
A known vulnerability of a local host can have been exploited and turned into an attacker

*Offense Source Summary*

The example offense on the slide is of the type **Source IP**. For an offense of type **Destination IP**, the fields display information about the destination.

# Offense Source Summary (2 of 4)

When you right-click the IP, you see navigation options for further investigation



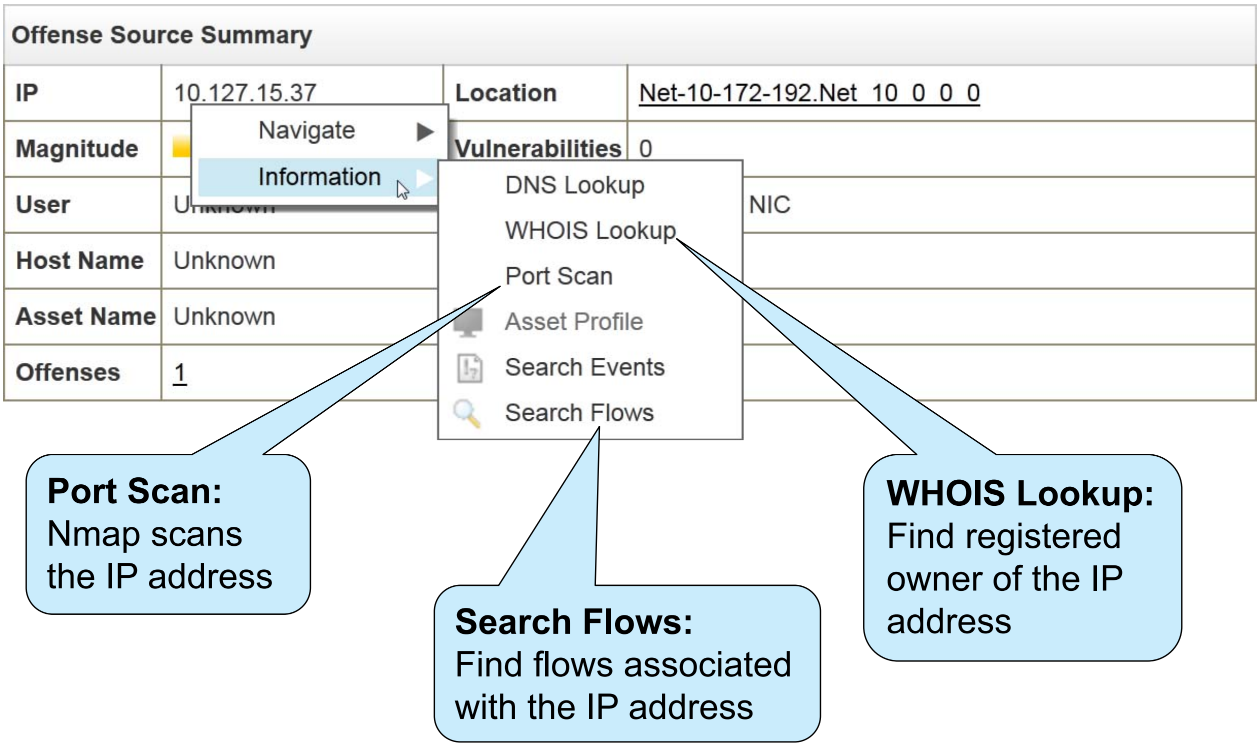
Offense Source Summary

| | | | |
|---|---|---|---|
| IP | 10.127.15.37 | Location | Net-10-172-192.Net_10_0_0_0 |
| Magnitude | | | |
| User | Unknown | | |

*Offense Source Summary (2 of 4)*

If a valid license for IBM Security QRadar Vulnerability Manager is deployed, the right-click menu includes the **Run QVM Scan** menu item.

# Offense Source Summary (3 of 4)



**Offense Source Summary**

| | | | |
|---|---|---|---|
| IP | 10.127.15.37 | Location | Net-10-172-192.Net_10_0_0_0 |
| Magnitude | | Vulnerabilities | 0 |
| User | Unknown | | NIC |
| Host Name | Unknown | | |
| Asset Name | Unknown | | |
| Offenses | 1 | | |

**Port Scan:** Nmap scans the IP address

**Search Flows:** Find flows associated with the IP address

**WHOIS Lookup:** Find registered owner of the IP address

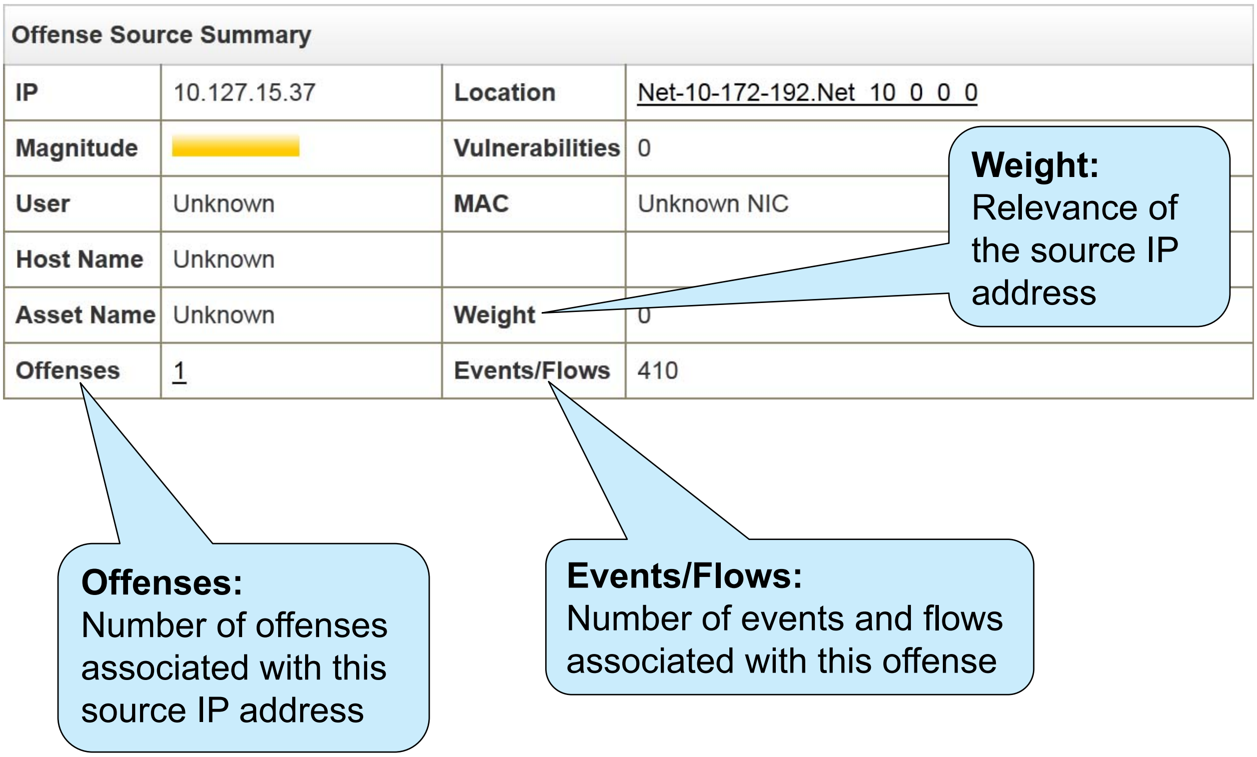
*Offense Source Summary (3 of 4)*

- **WHOIS Lookup**: By default, whois.arin.net is configured as the WHOIS server. It does not have the owners of local IP addresses registered. QRadar SIEM must be able to reach whois.arin.net to look up registered owners of remote IP addresses.
- **Port Scan**:
  - On the Console, QRadar SIEM runs the command `nmap -A` for the IP address. All QRadar SIEM 7.2 installations include Nmap.
  - QRadar SIEM displays the Nmap scan results in a pop-up window. In addition to open ports and services, Nmap detects operating system versions and a few potential vulnerabilities, such as anonymous FTP login. However, Nmap does not check for vulnerabilities that are provided by threat intelligence feeds.
  - The result of the Port Scan does not create or update the asset profile in QRadar SIEM. Even if Nmap is configured as a vulnerability scanner, Port Scan still does not update asset profiles because Port Scan runs `nmap -A` only on the Console. To have Nmap or other scanners create and update asset profiles, a QRadar SIEM administrator must configure and run them as vulnerability assessment (VA) scanners. These VA scanners are not invoked by selecting the **Port Scan** menu.

**Important:** A QRadar SIEM user can run a Port Scan for a remote IP address, but the owner of the remote system could consider this scan an attack. Therefore, do not scan remote IP addresses.

- **Asset Profile**: The menu item is *inactive* on the slide because no asset profile exists for the IP address in QRadar SIEM.
- **Search Events**: Use this menu item to find events that are associated with the IP address.

# Offense Source Summary (4 of 4)



**Offense Source Summary**

| | | | |
|---|---|---|---|
| **IP** | 10.127.15.37 | **Location** | Net-10-172-192.Net_10_0_0_0 |
| **Magnitude** | ▬ | **Vulnerabilities** | 0 |
| **User** | Unknown | **MAC** | Unknown NIC |
| **Host Name** | Unknown | | |
| **Asset Name** | Unknown | **Weight** | 0 |
| **Offenses** | 1 | **Events/Flows** | 410 |

**Weight:** Relevance of the source IP address

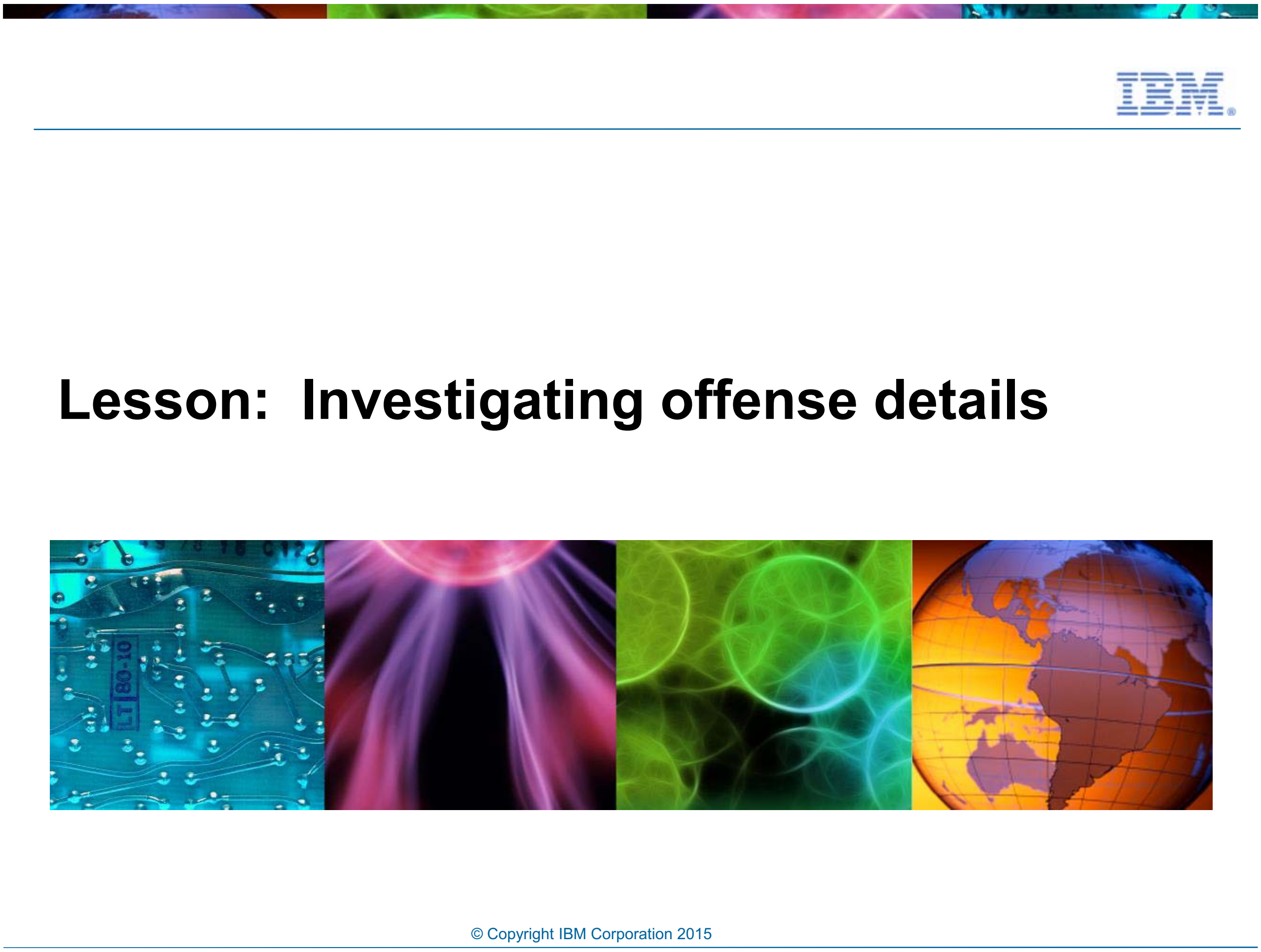
**Offenses:** Number of offenses associated with this source IP address

**Events/Flows:** Number of events and flows associated with this offense

*Offense Source Summary (4 of 4)*

- **User:** User that is associated with this source IP address. If no user is identified, the field shows **Unknown***.*
- **MAC**: MAC address with the source IP address when the offense began. If unknown, the field shows **Unknown NIC***.*
- **Host Name**: Host name that is associated with the source IP address. If unidentified, the field shows **Unknown***.*
- **Asset Name**: Asset name that is associated with the source IP address. If unidentified, the field shows **Unknown***.*
- **Weight:** Relevance of the source IP address, as defined by QRadar SIEM administrators, in the asset profile. If no asset profile exists, the weight of the network hierarchy, remote network, or remote service determines the weight of the source IP address. The field in the user interface shows **0** in that case.

# Lesson 3 Investigating offense details



IBM

## Lesson: Investigating offense details

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Many details help the security analyst to investigate an offense. In this lesson, you learn how to use further details to investigate an offense by performing the following tasks:

- View and add notes to an offense
- Investigate offense details
- View the annotations QRadar SIEM adds to an offense
- Use the Offense Summary toolbar

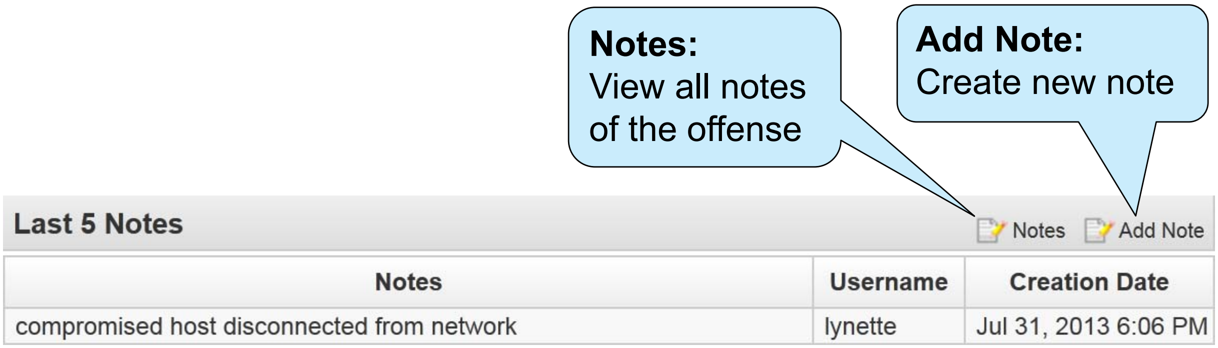
References:

- *QRadar SIEM Users Guide* http://ibm.co/1wvpSEE
- *QRadar SIEM Administration Guide* http://ibm.co/1wvpSEE

# Notes

QRadar SIEM users can add notes to offenses

- You cannot edit or delete notes
- The maximum length is 2000 characters



**Notes:** View all notes of the offense

**Add Note:** Create new note

**Last 5 Notes**

| Notes | Username | Creation Date |
|---|---|---|
| compromised host disconnected from network | lynette | Jul 31, 2013 6:06 PM |

*Notes*

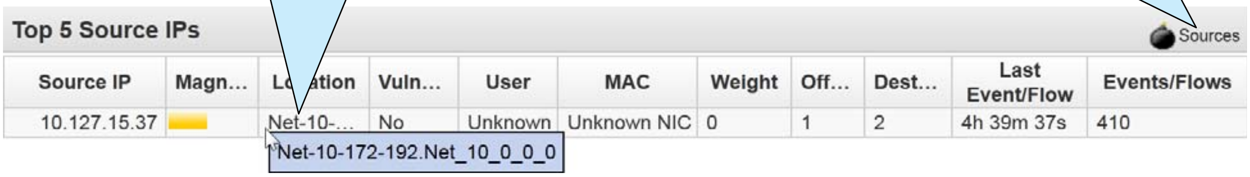
QRadar SIEM displays only the beginning of notes that are too long for one row on the Offense Summary window. Double-click the row to view the whole note.

## Top 5 Source IPs

QRadar SIEM lists the five IP addresses with the highest magnitude, which is where the suspected attack or policy breach originates

**Location:**
Hover the mouse over a shortened field value to display the full value

**Sources:**
View all source IP addresses of the offense



**Top 5 Source IPs**

| Source IP | Magn... | Location | Vuln... | User | MAC | Weight | Off... | Dest... | Last Event/Flow | Events/Flows |
|---|---|---|---|---|---|---|---|---|---|---|
| 10.127.15.37 | ▬ | Net-10-... | No | Unknown | Unknown NIC | 0 | 1 | 2 | 4h 39m 37s | 410 |

Net-10-172-192.Net_10_0_0_0

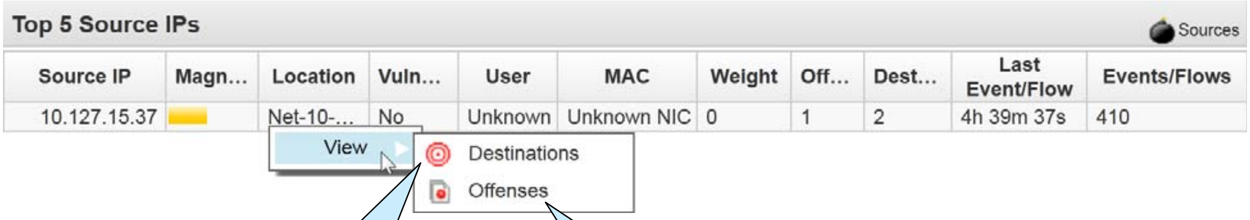
**Note:** The table contains only one row because the example offense has only one source IP address

*Top 5 Source IPs*

The example offense on this slide is of type **Source IP**. Therefore, the Offense Source Summary displays the same information as the columns in the Top 5 Source IPs. Refer to the previous lesson for explanations of the columns.

# Top 5 Source IPs (continued)

Right-click anywhere on the row to view more information about the source IP address



Top 5 Source IPs

| Source IP | Magn... | Location | Vuln... | User | MAC | Weight | Off... | Dest... | Last Event/Flow | Events/Flows |
|---|---|---|---|---|---|---|---|---|---|---|
| 10.127.15.37 |  | Net-10-... | No | Unknown | Unknown NIC | 0 | 1 | 2 | 4h 39m 37s | 410 |

**Destinations:**
List all destination IP addresses targeted by the source IP address

**Offenses:**
List all offenses for which the source IP address is source or destination IP address

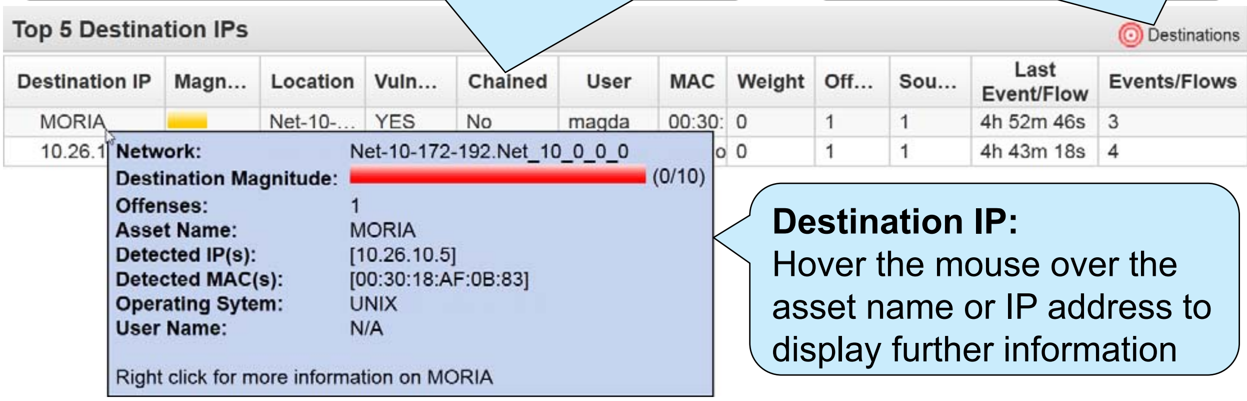
*Top 5 Source IPs (continued)*

## Top 5 Destination IPs

QRadar SIEM lists the five local IP addresses with the highest magnitude, which were targets of the ICMP scan

**Chained:**
Indicates whether the destination IP address is the source IP address in another offense

**Destinations:**
View all destinations IP addresses of the offense



Top 5 Destination IPs

Destinations

| Destination IP | Magn... | Location | Vuln... | Chained | User | MAC | Weight | Off... | Sou... | Last Event/Flow | Events/Flows |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MORIA | 🟨 | Net-10-... | YES | No | magda | 00:30: | 0 | 1 | 1 | 4h 52m 46s | 3 |
| 10.26.1 | | | | | | o | 0 | 1 | 1 | 4h 43m 18s | 4 |

| | |
|---|---|
| **Network:** | Net-10-172-192.Net_10_0_0_0 |
| **Destination Magnitude:** | 🟥 (0/10) |
| **Offenses:** | 1 |
| **Asset Name:** | MORIA |
| **Detected IP(s):** | [10.26.10.5] |
| **Detected MAC(s):** | [00:30:18:AF:0B:83] |
| **Operating Sytem:** | UNIX |
| **User Name:** | N/A |

Right click for more information on MORIA

**Destination IP:**
Hover the mouse over the asset name or IP address to display further information

**Note:** The table contains only two rows because only two local IP addresses were scanned

*Top 5 Destination IPs*

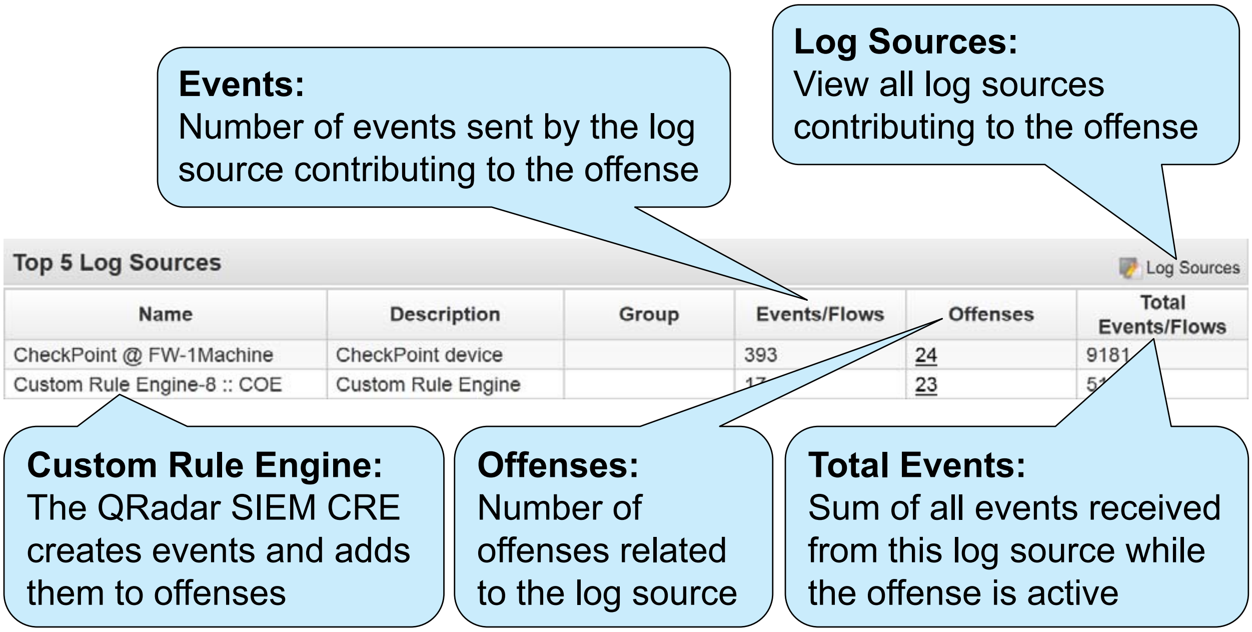
**Chained**: The field shows *Yes* if the destination IP address is the source IP address of other offenses. In such cases, an attacker has taken control over the system with this IP address and uses it to attack other systems. Click *Yes* to view the chained offenses.

**Magnitude**: The column displays the Aggregate CVSS Score if this value exists. If it does not exist, the column displays the highest offense magnitude of all the offenses that the IP address is a part of.

**Destination Magnitude**: The bar displays the Aggregate CVSS Score if this value exists. If it does not exist, a zero (0) is displayed.

# Top 5 Log Sources

A firewall provided the log messages about firewall denies; this firewall is the major log source of the ICMP scanner offense



**Events:**
Number of events sent by the log source contributing to the offense

**Log Sources:**
View all log sources contributing to the offense

Top 5 Log Sources

| Name | Description | Group | Events/Flows | Offenses | Total Events/Flows |
|---|---|---|---|---|---|
| CheckPoint @ FW-1Machine | CheckPoint device | | 393 | 24 | 9181 |
| Custom Rule Engine-8 :: COE | Custom Rule Engine | | 17 | 23 | 51 |

**Custom Rule Engine:**
The QRadar SIEM CRE creates events and adds them to offenses

**Offenses:**
Number of offenses related to the log source

**Total Events:**
Sum of all events received from this log source while the offense is active

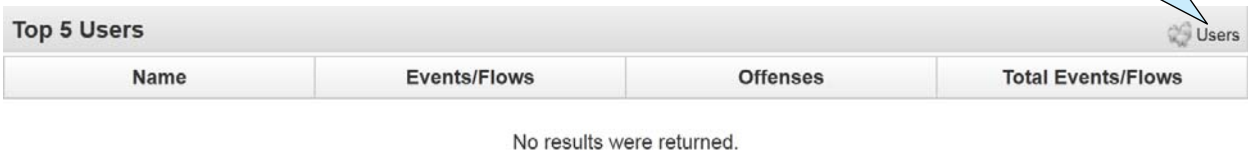
*Top 5 Log Sources*

- **Name** and **Description**: QRadar SIEM administrators choose the name and description of a log source. They also choose the credibility for events that are received from the log source.
- **Custom Rule Engine**: The Custom Rule Engine (CRE) in QRadar SIEM contributes events to offenses. The CRE creates these events and adds them to offenses if test criteria specified in rules match the incoming events.
- **Group**: Optionally, QRadar SIEM administrators can group log sources.
- **Events/Flows** and **Total Events/Flows**: Although the column titles indicate flows, QRadar SIEM totals only events.

# Top 5 Users

QRadar SIEM lists the five users with the most events contributing to the offense

**Users:**
View all users associated to the offense



| Name | Events/Flows | Offenses | Total Events/Flows |
|---|---|---|---|

No results were returned.

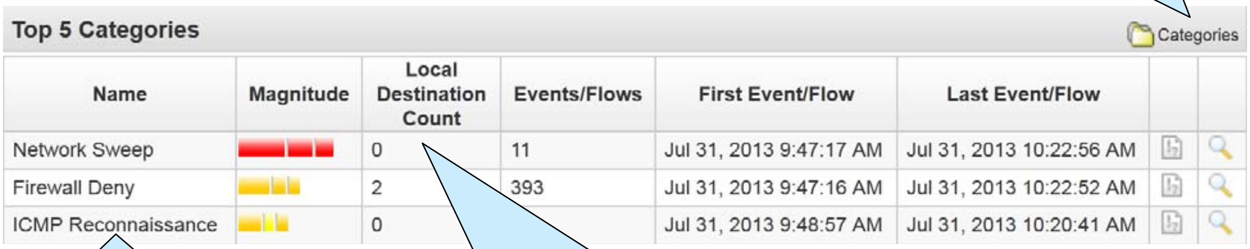
**Note:** In this example, QRadar SIEM did not receive an event with user information and therefore does not list a user

*Top 5 Users*

## Top 5 Categories

QRadar SIEM categorized most events into the Firewall Deny category; from this categorization and the nature of the events, rules deduced the ICMP scanning

**Categories:** View all low-level categories of the events contributing to the offense



**Top 5 Categories**

Categories

| Name | Magnitude | Local Destination Count | Events/Flows | First Event/Flow | Last Event/Flow | | |
|---|---|---|---|---|---|---|---|
| Network Sweep | 🟥🟥🟥 | 0 | 11 | Jul 31, 2013 9:47:17 AM | Jul 31, 2013 10:22:56 AM | 📄 | 🔍 |
| Firewall Deny | 🟨🟨🟨 | 2 | 393 | Jul 31, 2013 9:47:16 AM | Jul 31, 2013 10:22:52 AM | 📄 | 🔍 |
| ICMP Reconnaissance | 🟨🟨🟨 | 0 | | Jul 31, 2013 9:48:57 AM | Jul 31, 2013 10:20:41 AM | 📄 | 🔍 |

**Name:** Low-level category of the event

**Local Destination Count:** Number of local destination IP addresses affected by offenses with events in this category

*Top 5 Categories*

QRadar SIEM classifies offenses into categories. Categories cannot be added, deleted, or renamed.

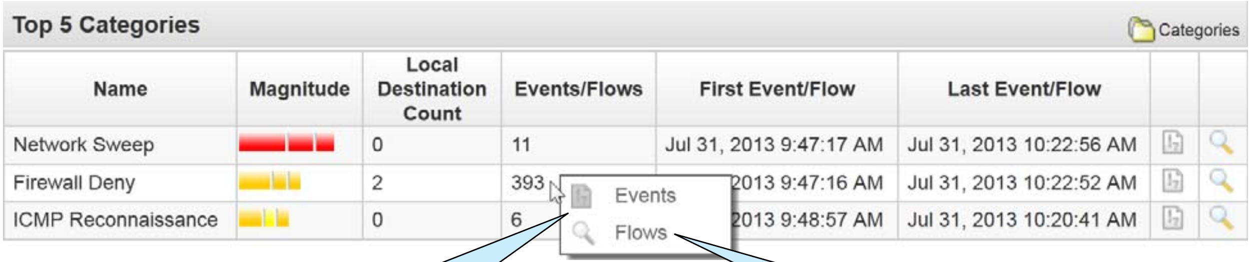
**Hint:** Refer to the *QRadar SIEM Administration Guide* (http://ibm.co/1wvpSEE) for a list of high-level categories (HLC) and low-level categories (LLC).

Rules that are applied by the Custom Rules Engine (CRE) noticed the suspicious Firewall Deny events. As an action of the rules, the CRE created the events in the Network Sweep and ICMP Reconnaissance categories, and created the ICMP scanner offense that ties these events together.

- **Local Destination Count**: Shows **0** if all destination IP addresses are remote.
- **Events/Flows**: Shows the number of events per low-level category that contributed to the offense.

## Top 5 Categories (continued)

Right-click anywhere on the row to view events and flows



**Top 5 Categories**

| Name | Magnitude | Local Destination Count | Events/Flows | First Event/Flow | Last Event/Flow | | |
|---|---|---|---|---|---|---|---|
| Network Sweep | 🟥🟥🟥 | 0 | 11 | Jul 31, 2013 9:47:17 AM | Jul 31, 2013 10:22:56 AM | 📄 | 🔍 |
| Firewall Deny | 🟨🟨🟨 | 2 | 393 | 2013 9:47:16 AM | Jul 31, 2013 10:22:52 AM | 📄 | 🔍 |
| ICMP Reconnaissance | 🟨🟨🟨 | 0 | 6 | 2013 9:48:57 AM | Jul 31, 2013 10:20:41 AM | 📄 | 🔍 |

**Events:**
List all events that contribute to the viewed offense in the category under the mouse pointer

**Flows:**
List all flows that contribute to the viewed offense in the category under the mouse pointer

*Top 5 Categories (continued)*

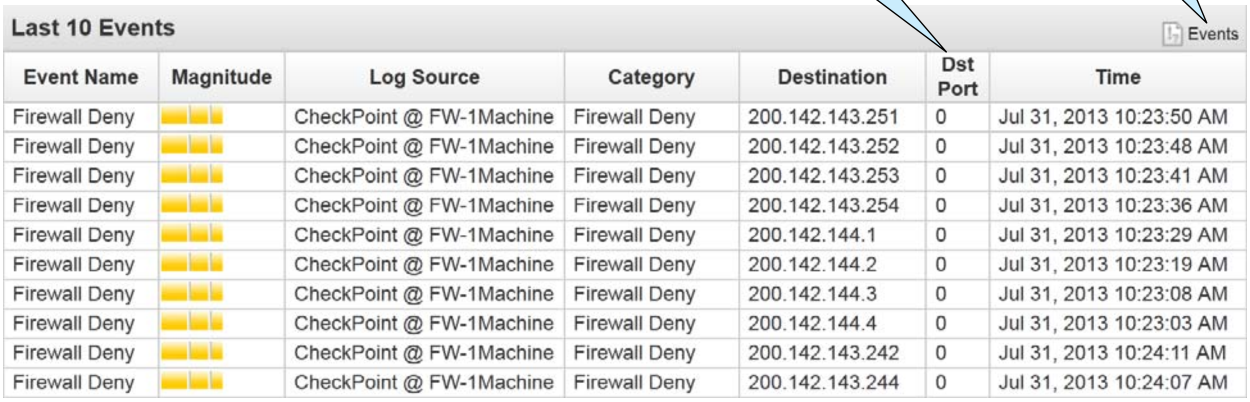
The First Event/Flow and Last Event/Flow columns include the same menu items, **Events** and **Flows**, as the context menu.

## Last 10 Events

Double-click anywhere on a row to open a window with details about the event

**Dst Port:**
The destination port is 0 for layer 3 protocol traffic such as ICMP

**Events:**
View all events that contribute to the offense



**Last 10 Events**

| Event Name | Magnitude | Log Source | Category | Destination | Dst Port | Time |
|---|---|---|---|---|---|---|
| Firewall Deny | ▬▬▬ | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.143.251 | 0 | Jul 31, 2013 10:23:50 AM |
| Firewall Deny | ▬▬▬ | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.143.252 | 0 | Jul 31, 2013 10:23:48 AM |
| Firewall Deny | ▬▬▬ | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.143.253 | 0 | Jul 31, 2013 10:23:41 AM |
| Firewall Deny | ▬▬▬ | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.143.254 | 0 | Jul 31, 2013 10:23:36 AM |
| Firewall Deny | ▬▬▬ | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.144.1 | 0 | Jul 31, 2013 10:23:29 AM |
| Firewall Deny | ▬▬▬ | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.144.2 | 0 | Jul 31, 2013 10:23:19 AM |
| Firewall Deny | ▬▬▬ | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.144.3 | 0 | Jul 31, 2013 10:23:08 AM |
| Firewall Deny | ▬▬▬ | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.144.4 | 0 | Jul 31, 2013 10:23:03 AM |
| Firewall Deny | ▬▬▬ | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.143.242 | 0 | Jul 31, 2013 10:24:11 AM |
| Firewall Deny | ▬▬▬ | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.143.244 | 0 | Jul 31, 2013 10:24:07 AM |

*Last 10 Events*

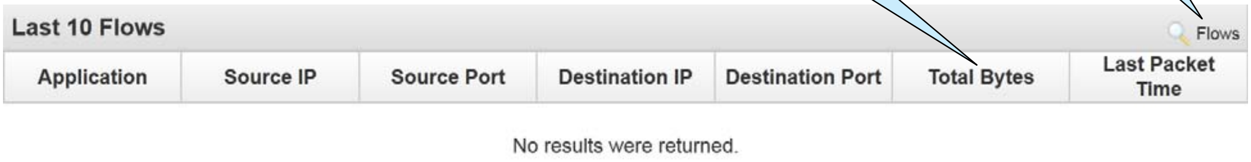
The last 10 events added to the offense provide the security analyst information about the latest developments in the offense.

# Last 10 Flows

No flows contributed to the ICMP scanner offense; therefore, QRadar SIEM does not list any flows

**Total Bytes:** Sum of bytes transferred in both directions

**Flows:** View all flows that contribute to the offense



Last 10 Flows

| Application | Source IP | Source Port | Destination IP | Destination Port | Total Bytes | Last Packet Time |
|---|---|---|---|---|---|---|

No results were returned.

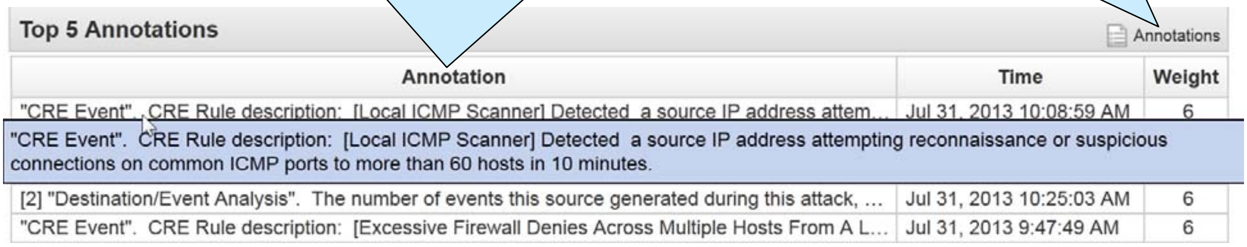
*Last 10 Flows*

# Annotations

- Annotations provide insight into why QRadar SIEM considers the event or observed traffic threatening
- QRadar SIEM can add annotations when it adds events and flows to an offense
- Read the oldest annotation because it was added when the offense was created

**Annotation:**
Hold the mouse over a shortened annotation to show the full annotation

**Annotations:**
View all annotations of the offense



| Annotation | Time | Weight |
|---|---|---|
| "CRE Event". CRE Rule description: [Local ICMP Scanner] Detected a source IP address attem… | Jul 31, 2013 10:08:59 AM | 6 |
| [2] "Destination/Event Analysis". The number of events this source generated during this attack, … | Jul 31, 2013 10:25:03 AM | 6 |
| "CRE Event". CRE Rule description: [Excessive Firewall Denies Across Multiple Hosts From A L… | Jul 31, 2013 9:47:49 AM | 6 |

"CRE Event". CRE Rule description: [Local ICMP Scanner] Detected a source IP address attempting reconnaissance or suspicious connections on common ICMP ports to more than 60 hosts in 10 minutes.

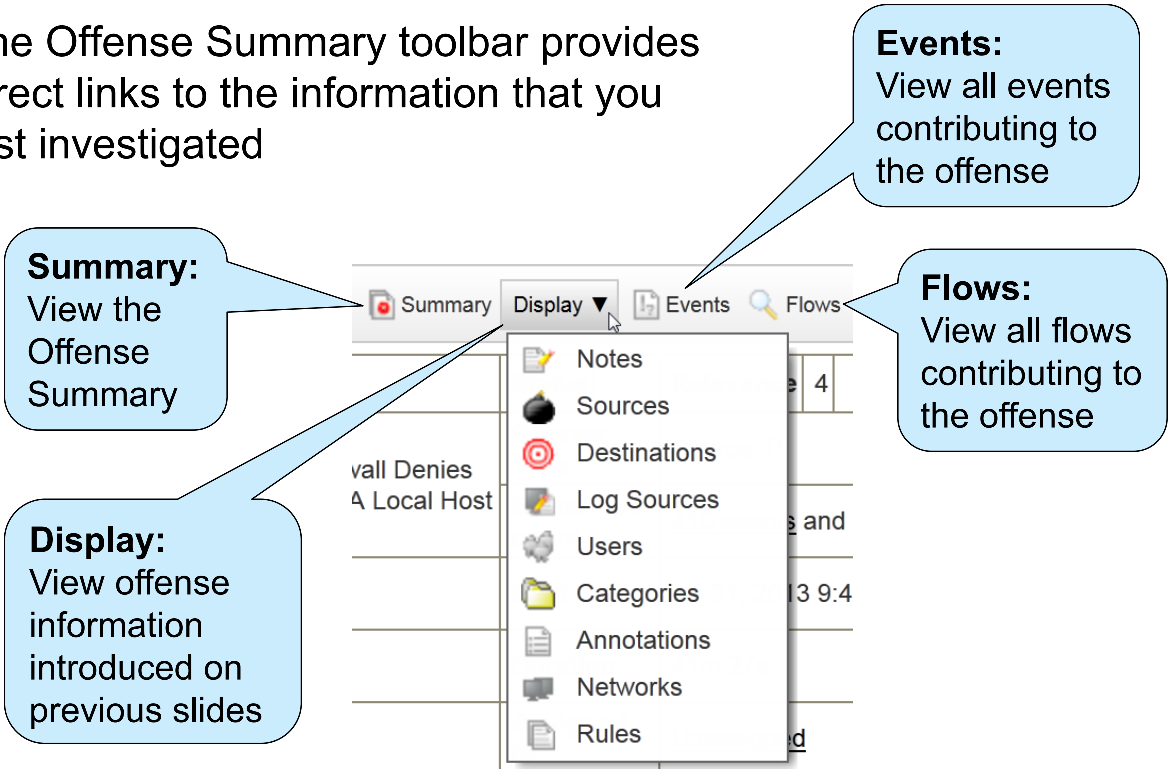
*Annotations*

QRadar SIEM rules and building blocks add annotations when they create or update an offense.

QRadar SIEM users cannot add, edit, or delete annotations.

## Offense Summary toolbar

The Offense Summary toolbar provides direct links to the information that you just investigated



**Events:** View all events contributing to the offense

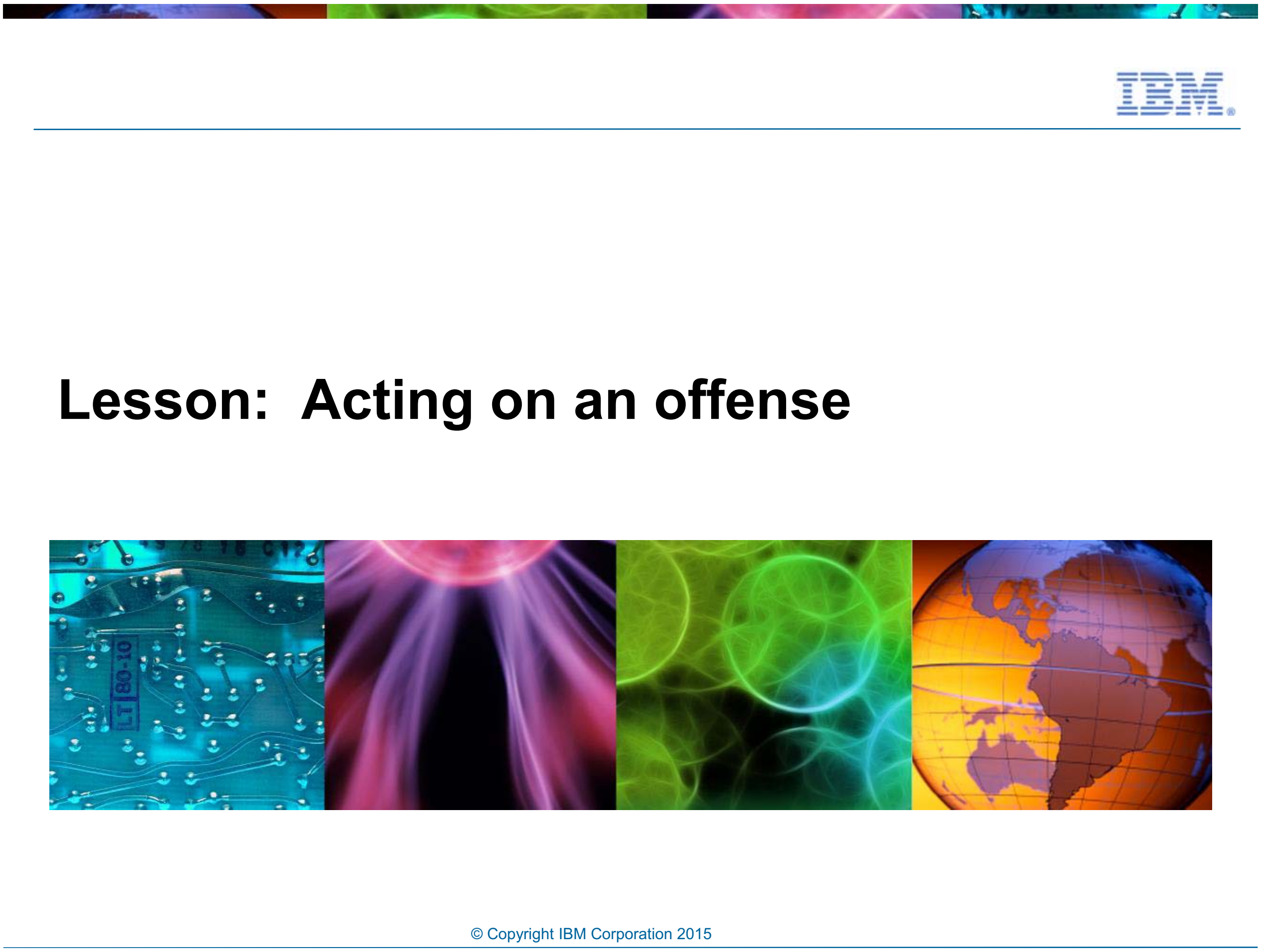
**Summary:** View the Offense Summary

**Flows:** View all flows contributing to the offense

**Display:** View offense information introduced on previous slides

*Offense Summary toolbar*

# Lesson 4  Acting on an offense

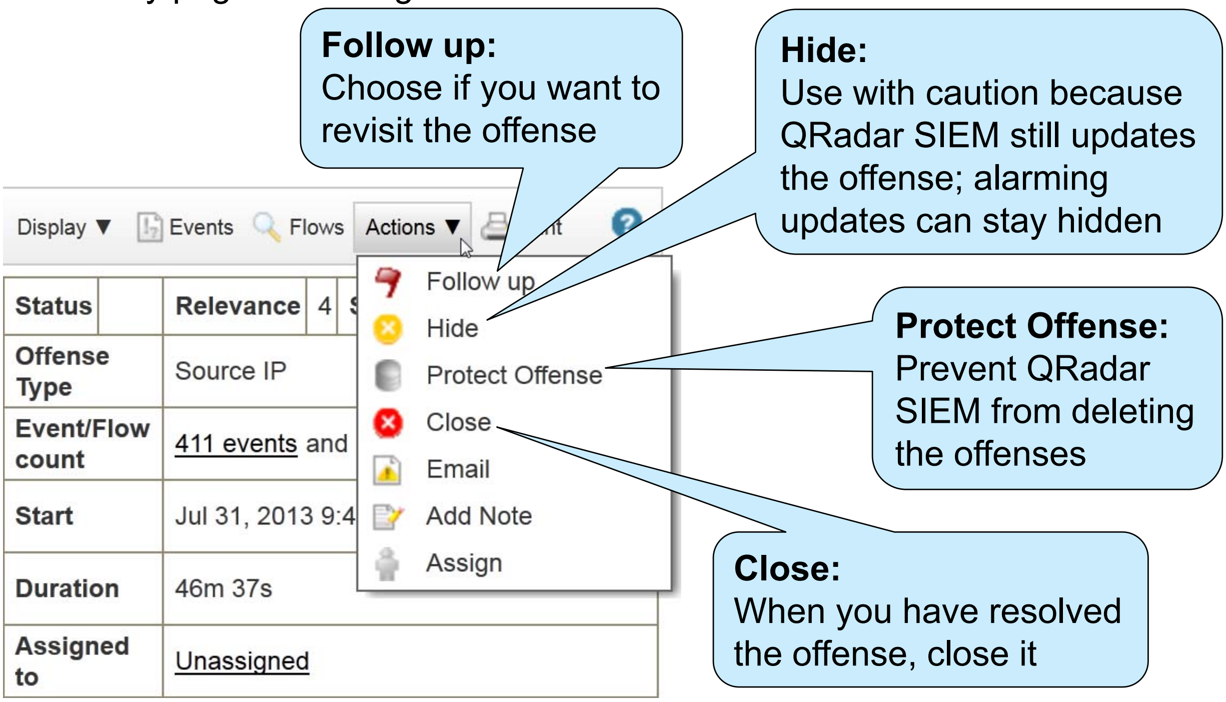


## Lesson:  Acting on an offense

Security analysts draw conclusions from investigating an offense and can act accordingly. In this lesson, you learn how to take action on an offense in QRadar SIEM.

# Offense actions

After investigating an offense, click **Actions** at the top of the Offense Summary page to set flags and status



| | | | |
|---|---|---|---|
| Status | | Relevance | 4 |
| Offense Type | | Source IP | |
| Event/Flow count | | 411 events and | |
| Start | | Jul 31, 2013 9:4 | |
| Duration | | 46m 37s | |
| Assigned to | | Unassigned | |

**Follow up:**
Choose if you want to revisit the offense

**Hide:**
Use with caution because QRadar SIEM still updates the offense; alarming updates can stay hidden

**Protect Offense:**
Prevent QRadar SIEM from deleting the offenses

**Close:**
When you have resolved the offense, close it

*Offense actions*

**Note:** All actions on the Offense Summary page are available on the **Offense** list except for **Email** and **Add Note**.

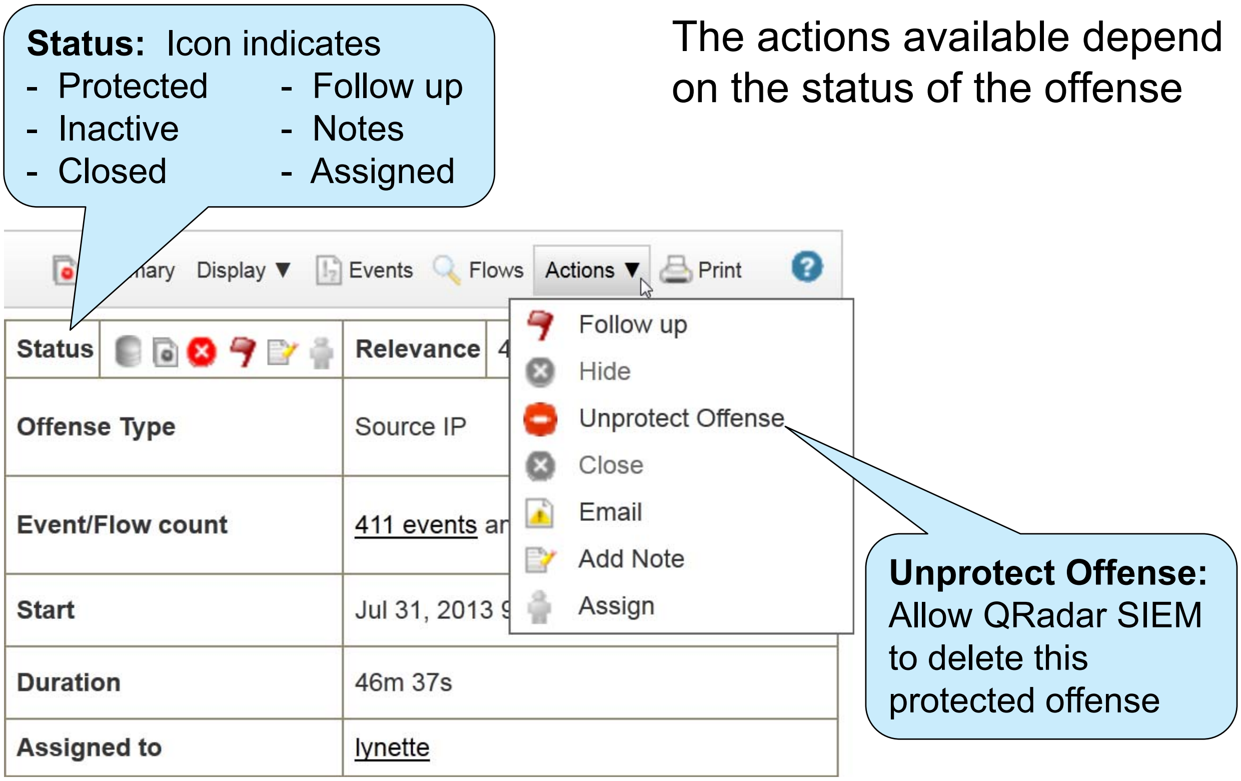
The **Actions** menu includes the following options:

- **Display**: Click to view offense information that was introduced on previous slides.
- **Hide**: An offense that is *hidden* by a QRadar SIEM user is also *hidden* for all other users.
  - The Offense Manager on the **Offenses** tab does not list *hidden* offenses by default.
  - To display *hidden* offenses, clear the **Exclude Hidden Offenses** filter.
  - An *inactive* offense can be hidden, but a *closed* offense cannot be *hidden*.
  - If a user closes a *hidden active* or *inactive* offense, QRadar SIEM displays it.

- **Protect Offense** and status *inactive*: QRadar SIEM deletes unprotected offenses with an *inactive* status after the retention period elapses. Administrators can change the default retention period of three days.
  - QRadar SIEM changes an offense status from *active* to *inactive* under the following occurrences:
    - After the offense has been closed
    - After the offense does not receive an event or flow for five days
    - When the QRadar SIEM installation is upgraded
  - A protected *active* offense can become *inactive* but QRadar SIEM does not delete it. QRadar SIEM stores a protected *inactive* offense indefinitely until a QRadar SIEM user unprotects it.
  - An *inactive* offense cannot become *active* again. If an event or flow arrives that matches an *inactive* offense, QRadar SIEM creates a new offense.
  - Only QRadar SIEM can turn an offense *inactive.*
  - Only users can automatically protect, unprotect, hide, or close an offense.
- **Close**: When a QRadar SIEM user closes an offense, the offense moves from the status of *active* to *inactive and closed*.
- **Email** and **Add Note**: The **Email** and **Add Note** actions are available only on the Offense Summary page.
- **Assign**: Delegate the offense to another QRadar SIEM user.

## Offense status and flags

The actions available depend on the status of the offense



**Status:** Icon indicates
- Protected
- Inactive
- Closed
- Follow up
- Notes
- Assigned

| | | | |
|---|---|---|---|
| Status | | Relevance | 4 |
| Offense Type | Source IP | | |
| Event/Flow count | 411 events ar | | |
| Start | Jul 31, 2013 9 | | |
| Duration | 46m 37s | | |
| Assigned to | lynette | | |

**Unprotect Offense:** Allow QRadar SIEM to delete this protected offense

*Offense status and flags*

This slide displays the **Status** field and the **Actions** menu after you have performed the following actions:

- Follow up
- Protect Offense
- Close
- Add Note
- Assign

### Field descriptions

- **Status**: No icon exists for status *active.* An icon exists for the status of *hidden,* but it is not displayed in the slide.
- **Follow up**, **Email**, **Add Note**, and **Assign**: These actions are available for *inactive* offenses. When you select **Follow up** for an offense with the **Follow up** flag that is already set, QRadar SIEM removes the flag.
- **Assigned to**: The offense is now assigned to a QRadar SIEM user.

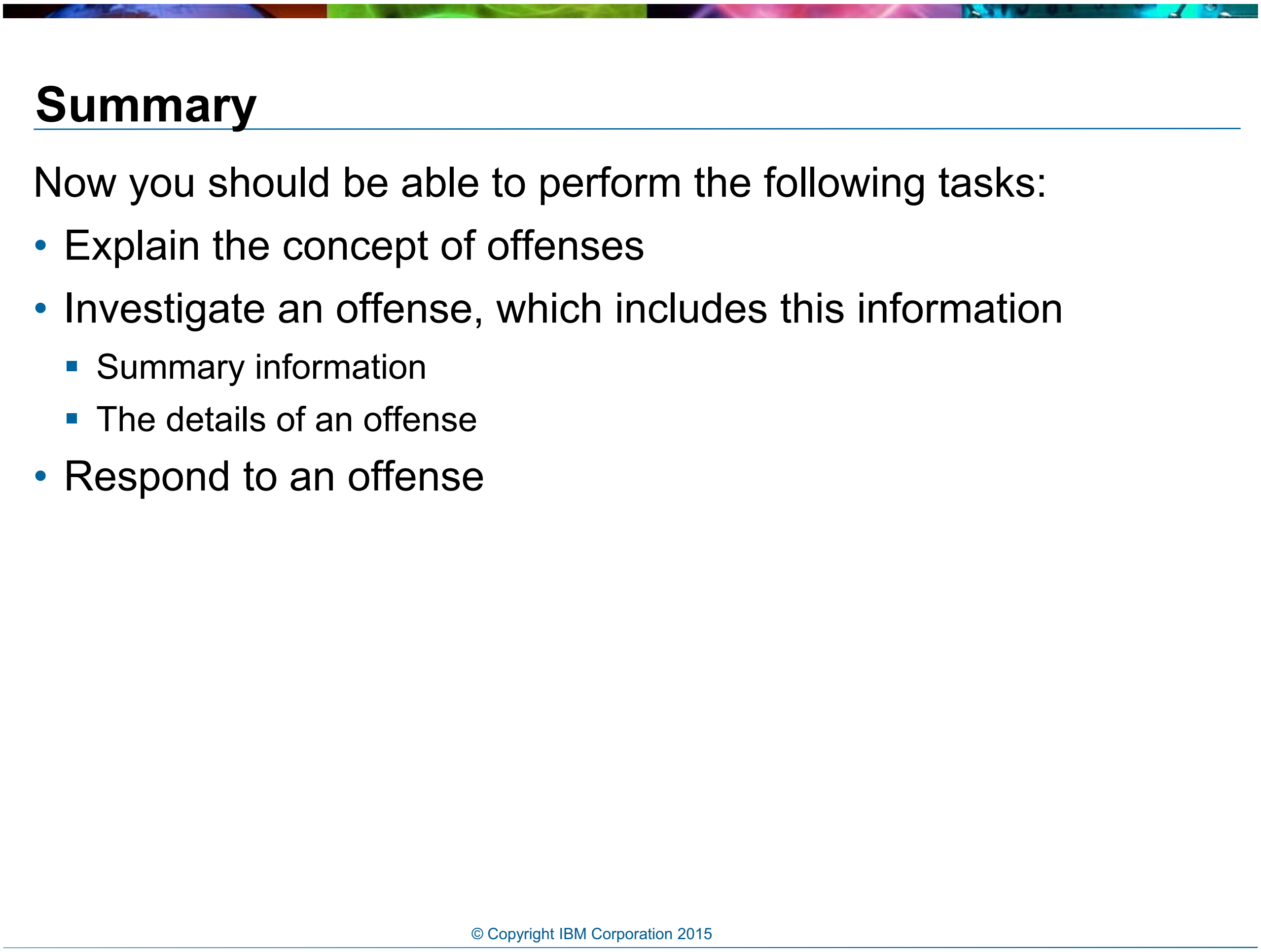
**Note:** The **Actions** menu of the Offense Manager on the **Offenses** tab allows you to export offenses. You can export offenses to keep records outside of QRadar SIEM. Exported offenses cannot be imported back into QRadar SIEM.

# Student exercise

Use the procedures in the *Student Exercises Guide* to investigate the local DNS scanner offense

*Student exercises*

Perform the exercises for this unit.



## Summary

Now you should be able to perform the following tasks:

- Explain the concept of offenses
- Investigate an offense, which includes this information
  - Summary information
  - The details of an offense
- Respond to an offense

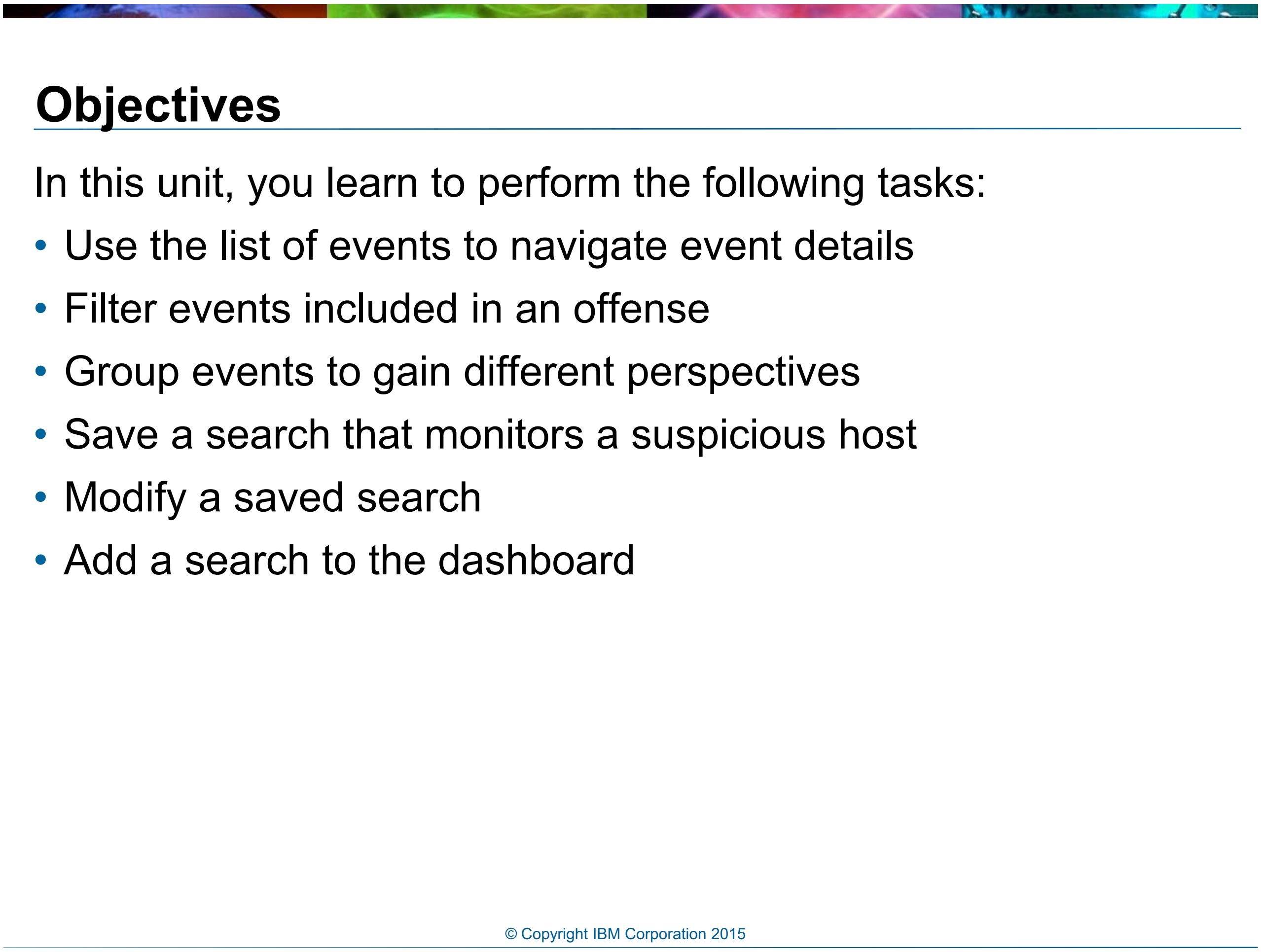
*Summary*

# 5 Investigating the events of an offense

## Investigating the events of an offense

The investigation of an offense usually leads to the investigation of the events that contributed to the offense. This unit teaches you how to find, filter, and group events in order to gain critical insights about the offense. You also learn how to create and edit a search that monitors the events of suspicious hosts.

Reference: *QRadar SIEM Users Guide* http://ibm.co/1wvpSEE



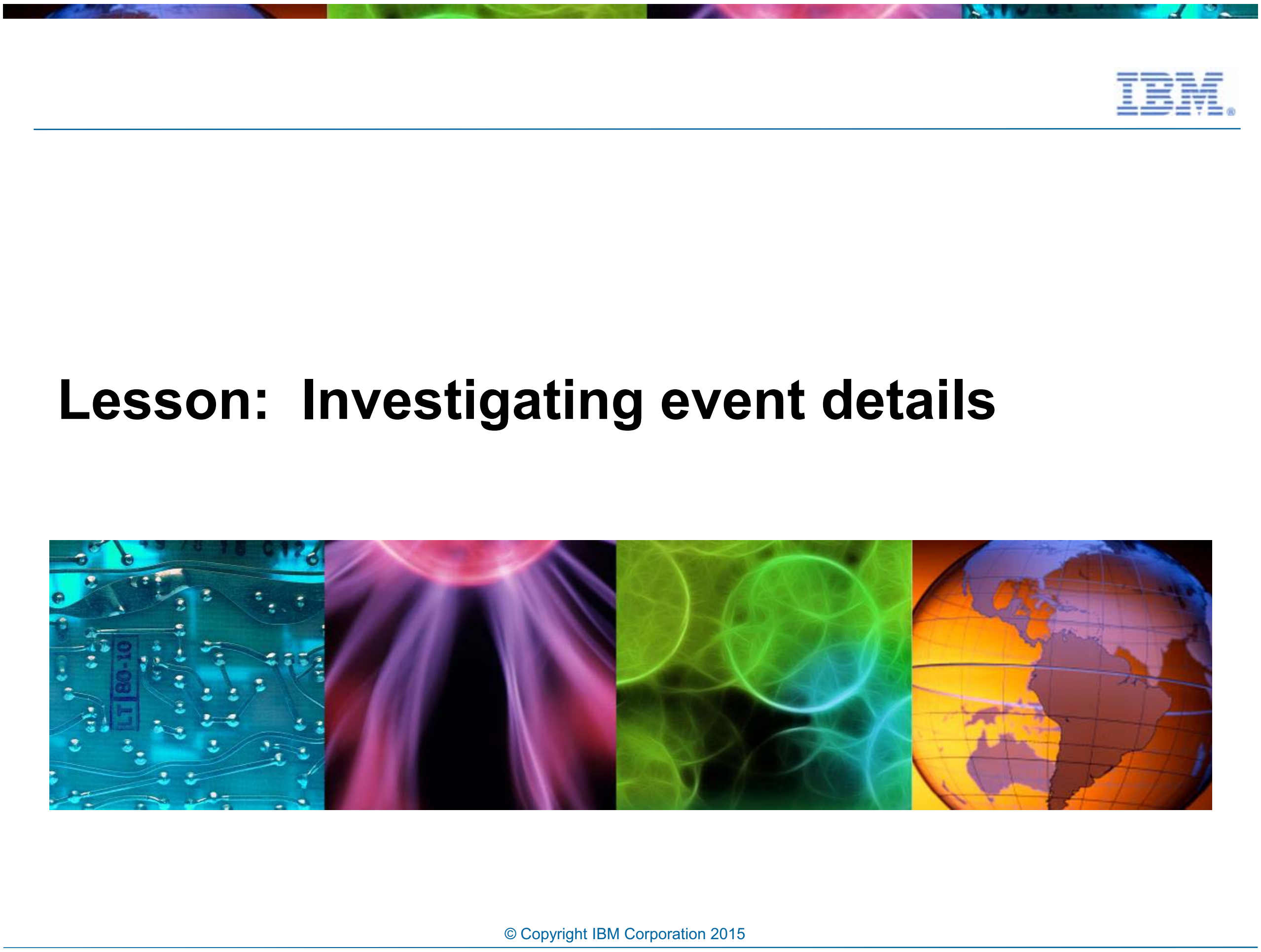
## Objectives

In this unit, you learn to perform the following tasks:

- Use the list of events to navigate event details
- Filter events included in an offense
- Group events to gain different perspectives
- Save a search that monitors a suspicious host
- Modify a saved search
- Add a search to the dashboard

*Objectives*

# Lesson 1  Investigating event details



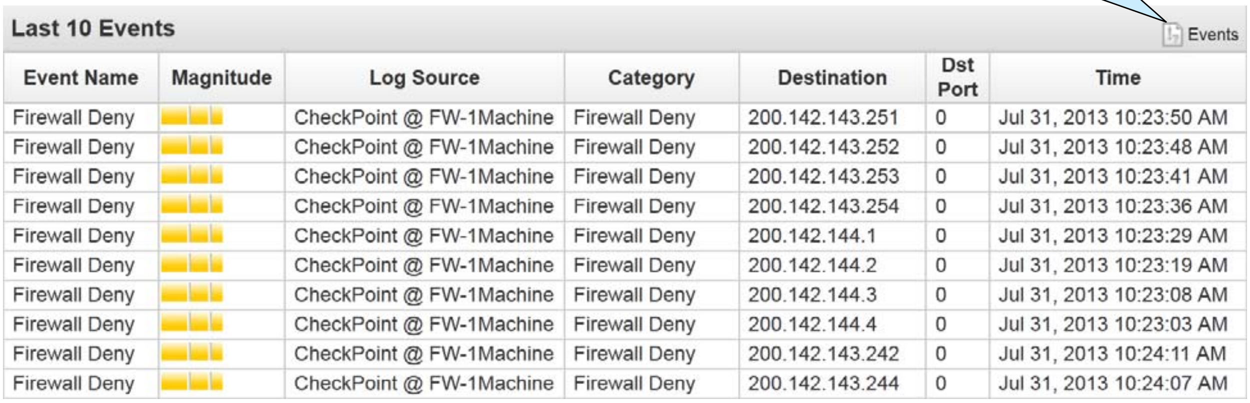
**Lesson:  Investigating event details**

One of the first steps when investigating the events of an offense is to examine the event data at a high level. In this lesson, you learn how to navigate the event details that are displayed in the list of events.

# Navigating to the events

In the Offense Summary, click **Events** to open the list of events

**Events:**
View all events that contribute to the offense



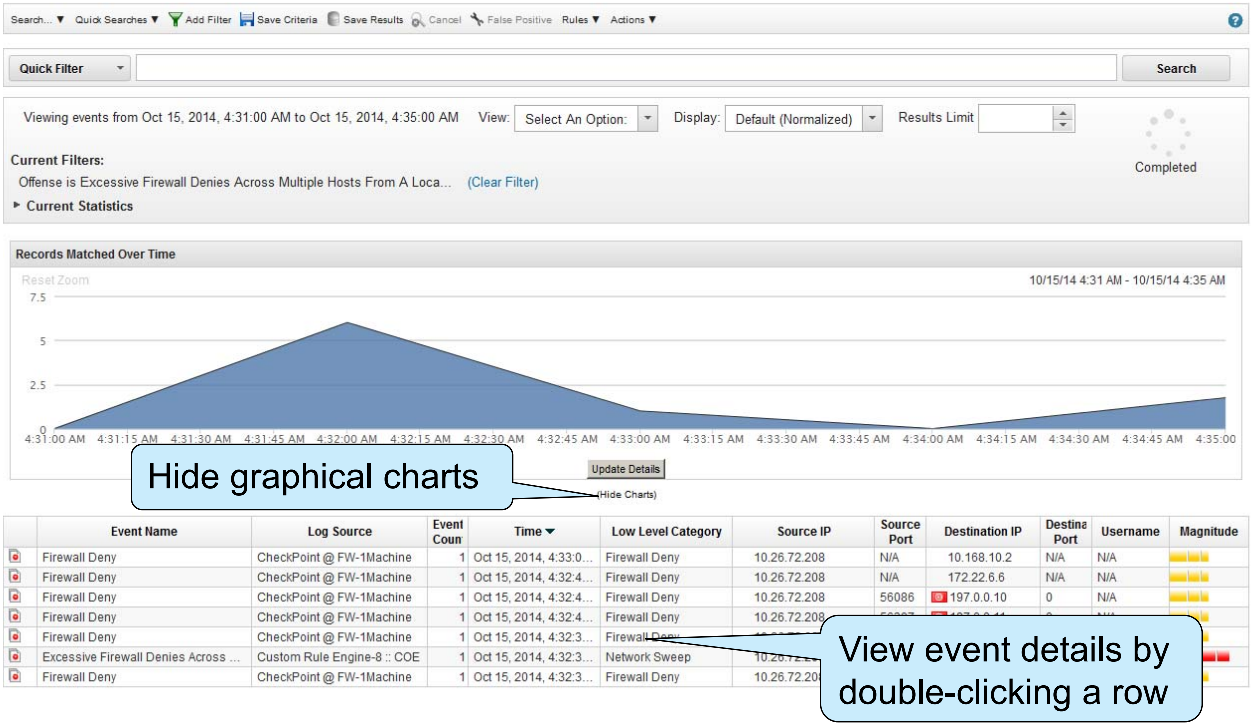
**Last 10 Events** Events

| Event Name | Magnitude | Log Source | Category | Destination | Dst Port | Time |
|---|---|---|---|---|---|---|
| Firewall Deny | ▮▮▮ | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.143.251 | 0 | Jul 31, 2013 10:23:50 AM |
| Firewall Deny | ▮▮▮ | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.143.252 | 0 | Jul 31, 2013 10:23:48 AM |
| Firewall Deny | ▮▮▮ | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.143.253 | 0 | Jul 31, 2013 10:23:41 AM |
| Firewall Deny | ▮▮▮ | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.143.254 | 0 | Jul 31, 2013 10:23:36 AM |
| Firewall Deny | ▮▮▮ | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.144.1 | 0 | Jul 31, 2013 10:23:29 AM |
| Firewall Deny | ▮▮▮ | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.144.2 | 0 | Jul 31, 2013 10:23:19 AM |
| Firewall Deny | ▮▮▮ | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.144.3 | 0 | Jul 31, 2013 10:23:08 AM |
| Firewall Deny | ▮▮▮ | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.144.4 | 0 | Jul 31, 2013 10:23:03 AM |
| Firewall Deny | ▮▮▮ | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.143.242 | 0 | Jul 31, 2013 10:24:11 AM |
| Firewall Deny | ▮▮▮ | CheckPoint @ FW-1Machine | Firewall Deny | 200.142.143.244 | 0 | Jul 31, 2013 10:24:07 AM |

*Navigating to the events*

**Note:** You can also use the **Log Activity** tab to view events.

# List of events



Viewing events from Oct 15, 2014, 4:31:00 AM to Oct 15, 2014, 4:35:00 AM View: Select An Option: Display: Default (Normalized) Results Limit

Current Filters:
Offense is Excessive Firewall Denies Across Multiple Hosts From A Loca... (Clear Filter)

▸ Current Statistics

| | Event Name | Log Source | Event Coun | Time ▼ | Low Level Category | Source IP | Source Port | Destination IP | Destina Port | Username | Magnitude |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Firewall Deny | CheckPoint @ FW-1Machine | 1 | Oct 15, 2014, 4:33:0... | Firewall Deny | 10.26.72.208 | N/A | 10.168.10.2 | N/A | N/A | |
| | Firewall Deny | CheckPoint @ FW-1Machine | 1 | Oct 15, 2014, 4:32:4... | Firewall Deny | 10.26.72.208 | N/A | 172.22.6.6 | N/A | N/A | |
| | Firewall Deny | CheckPoint @ FW-1Machine | 1 | Oct 15, 2014, 4:32:4... | Firewall Deny | 10.26.72.208 | 56086 | 197.0.0.10 | 0 | N/A | |
| | Firewall Deny | CheckPoint @ FW-1Machine | 1 | Oct 15, 2014, 4:32:4... | Firewall Deny | 10.26.72.208 | [illegible] | [illegible] | [illegible] | [illegible] | |
| | Firewall Deny | CheckPoint @ FW-1Machine | 1 | Oct 15, 2014, 4:32:3... | Firewall Deny | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | |
| | Excessive Firewall Denies Across ... | Custom Rule Engine-8 :: COE | 1 | Oct 15, 2014, 4:32:3... | Network Sweep | 10.26.72.[illegible] | [illegible] | [illegible] | [illegible] | [illegible] | |
| | Firewall Deny | CheckPoint @ FW-1Machine | 1 | Oct 15, 2014, 4:32:3... | Firewall Deny | 10.26.72.20[illegible] | [illegible] | [illegible] | [illegible] | [illegible] | |

Hide graphical charts

View event details by double-clicking a row

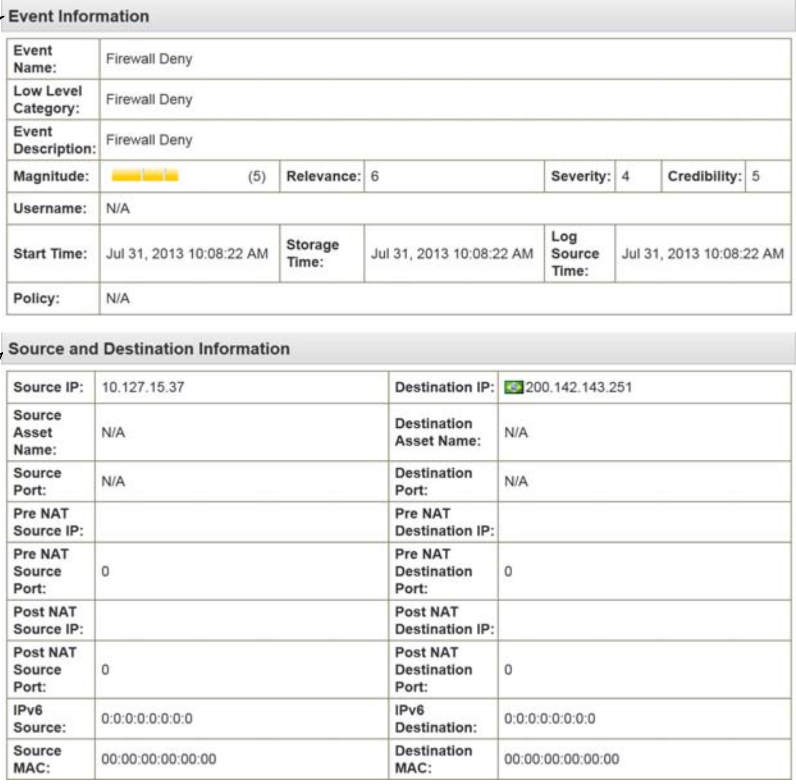
*List of events*

To sort events, click a column header. To investigate suspicious activity, you must locate the information that is associated with the offense, such as its events.

# Event details: Base information

**Event Information:** Similar offense parameters

**Source and Destination Information:** Most fields do not matter for this particular event because NAT and IPv6 were not used



**Event Information**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Event Name: | Firewall Deny | | | | | | |
| Low Level Category: | Firewall Deny | | | | | | |
| Event Description: | Firewall Deny | | | | | | |
| Magnitude: | (5) | Relevance: | 6 | Severity: | 4 | Credibility: | 5 |
| Username: | N/A | | | | | | |
| Start Time: | Jul 31, 2013 10:08:22 AM | Storage Time: | Jul 31, 2013 10:08:22 AM | Log Source Time: | Jul 31, 2013 10:08:22 AM | | |
| Policy: | N/A | | | | | | |

**Source and Destination Information**

| | | | |
|---|---|---|---|
| Source IP: | 10.127.15.37 | Destination IP: | 200.142.143.251 |
| Source Asset Name: | N/A | Destination Asset Name: | N/A |
| Source Port: | N/A | Destination Port: | N/A |
| Pre NAT Source IP: | | Pre NAT Destination IP: | |
| Pre NAT Source Port: | 0 | Pre NAT Destination Port: | 0 |
| Post NAT Source IP: | | Post NAT Destination IP: | |
| Post NAT Source Port: | 0 | Post NAT Destination Port: | 0 |
| IPv6 Source: | 0:0:0:0:0:0:0:0 | IPv6 Destination: | 0:0:0:0:0:0:0:0 |
| Source MAC: | 00:00:00:00:00:00 | Destination MAC: | 00:00:00:00:00:00 |

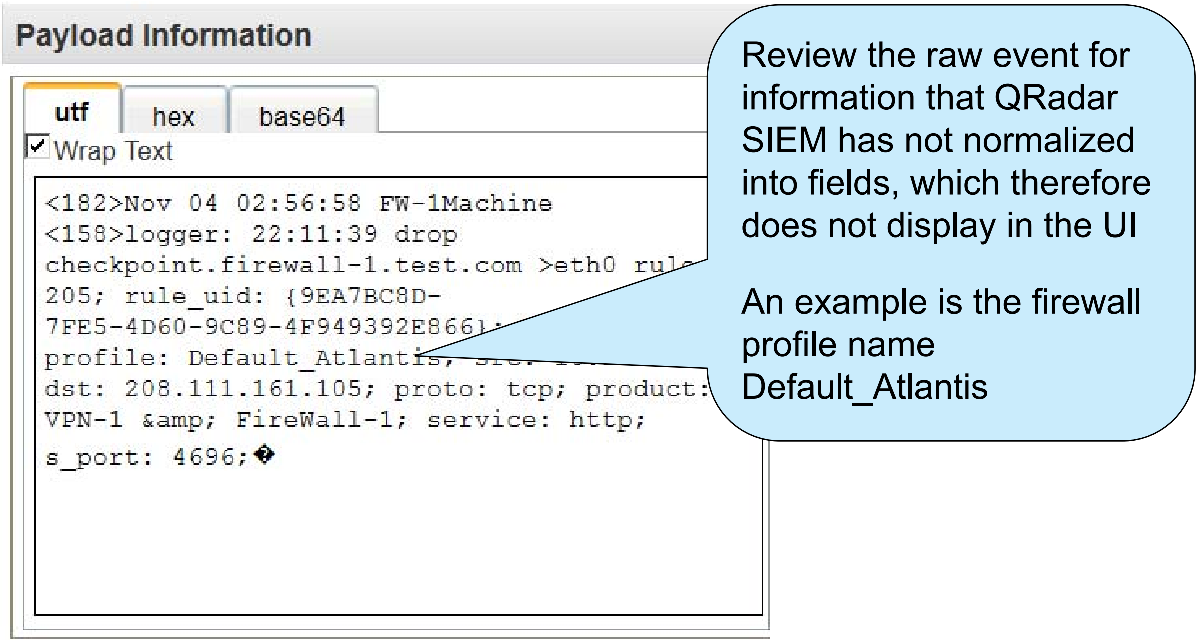
*Event details: Base information*

Typically, only a few fields in the event information and source and destination information areas include data.

- **Start Time**: The time when QRadar SIEM received the raw event from the log source
- **Storage Time**: The time when QRadar SIEM stored the normalized event in its database
- **Log Source Time**: The time that is recorded in the raw event

# Event details: Reviewing the raw event

Each normalized event carries its raw event as the payload



```
<182>Nov 04 02:56:58 FW-1Machine
<158>logger: 22:11:39 drop
checkpoint.firewall-1.test.com >eth0 rul
205; rule_uid: {9EA7BC8D-
7FE5-4D60-9C89-4F949392E866}:
profile: Default_Atlantis;
dst: 208.111.161.105; proto: tcp; product:
VPN-1 &amp; FireWall-1; service: http;
s_port: 4696;�
```

Review the raw event for information that QRadar SIEM has not normalized into fields, which therefore does not display in the UI

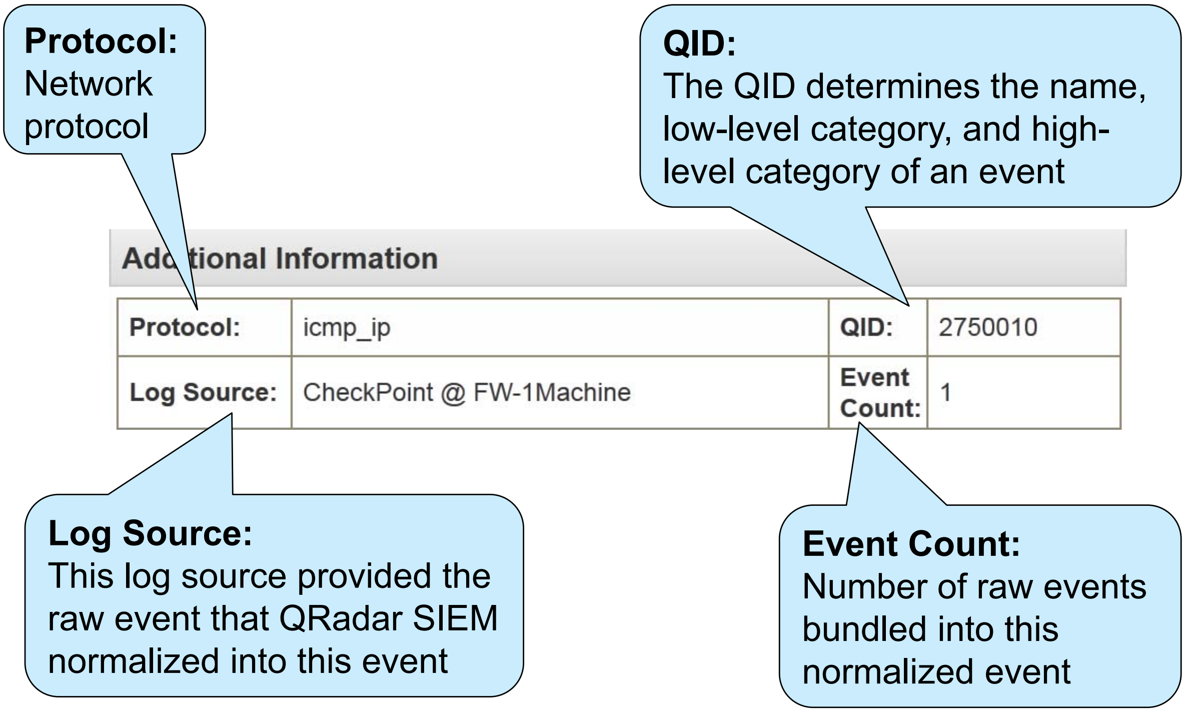
An example is the firewall profile name Default_Atlantis

*Event details: Reviewing the raw event*

QRadar SIEM normalizes data out of raw events automatically, including information such as:

- Date
- Time
- Source IP address
- Destination IP address
- Protocol

# Event details: Additional details



**Protocol:** Network protocol

**QID:** The QID determines the name, low-level category, and high-level category of an event

Additional Information

| | | | |
|---|---|---|---|
| **Protocol:** | icmp_ip | **QID:** | 2750010 |
| **Log Source:** | CheckPoint @ FW-1Machine | **Event Count:** | 1 |

**Log Source:** This log source provided the raw event that QRadar SIEM normalized into this event

**Event Count:** Number of raw events bundled into this normalized event

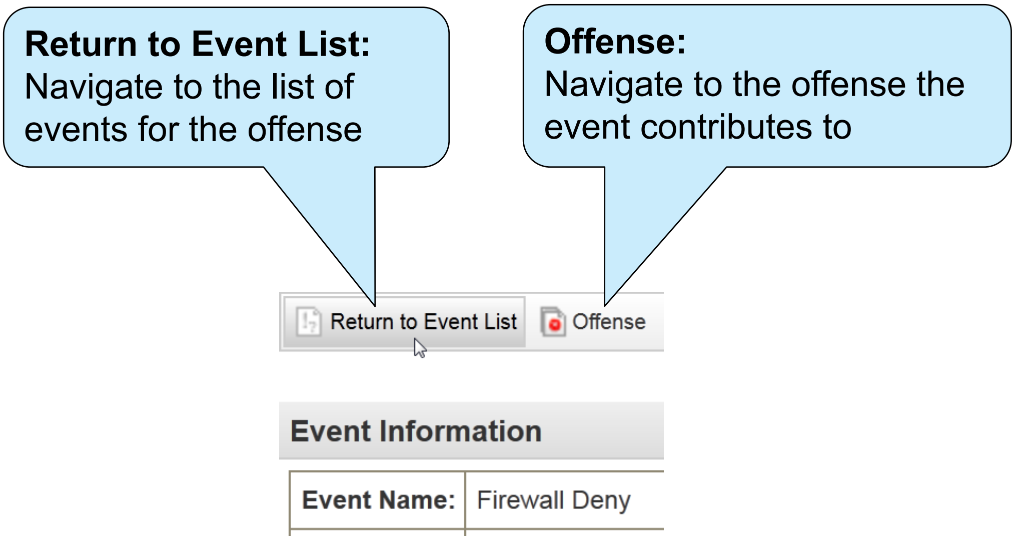
*Event details: Additional details*

The Event Details window provides more event information. This information is discussed in more depth later in this course.

- **Protocol**: In this example, the protocol is *icmp_ip.* ICMP is encapsulated into IP. Both are layer 3 protocols.
- **QID**: To normalize raw events, QRadar SIEM maps them to unique QIDs.
- **Log Source**: A system on your network is a log source if QRadar SIEM receives raw events from it.
- **Event Count**: For each individual log source, QRadar SIEM administrators can enable or disable **coalescing** of multiple similar raw event into one normalized event. The number indicates how many raw events have been coalesced into one normalized event. A coalesced, normalized event contains only the first raw event in the payload.

# Returning to the list of events

After investigating the event details, click **Return to Event List**, in the upper-left corner of the event details window, to return to the event list



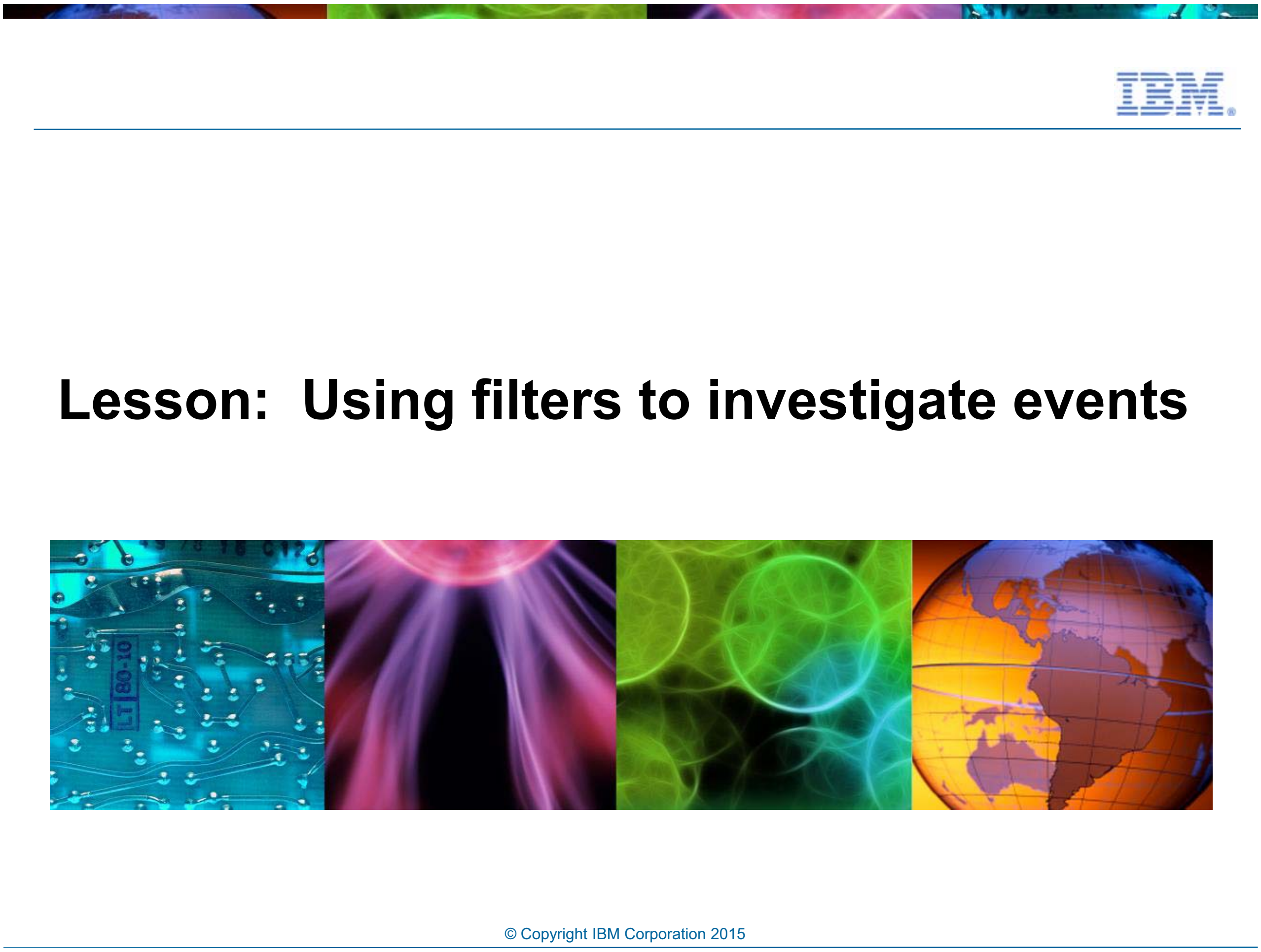
**Return to Event List:** Navigate to the list of events for the offense

**Offense:** Navigate to the offense the event contributes to

| | |
|---|---|
| **Event Name:** | Firewall Deny |

*Returning to the list of events*

# Lesson 2 Using filters to investigate events



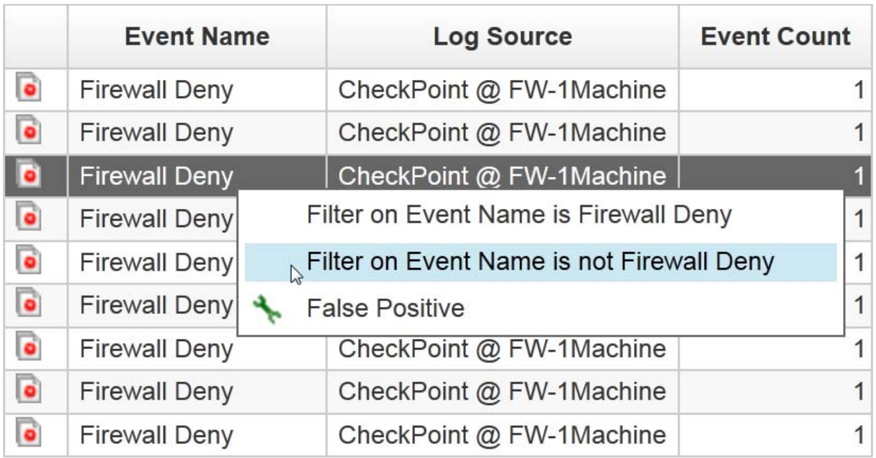
## Lesson: Using filters to investigate events

Filters can temporarily hide events from the user interface, which makes it easier to focus on more significant events. When investigating events, it can be helpful to filter the events. In this lesson, you learn how to filter events.

Reference: *QRadar SIEM Users Guide* http://ibm.co/1wvpSEE

# Filtering events (1 of 3)

- In the list of events, you can use filters to explore the offense further
- Most events in this offense are *Firewall Deny*
- Because other events provide more insight, right-click the event name to filter for events that are not Firewall Deny



| | Event Name | Log Source | Event Count |
|---|---|---|---|
| | Firewall Deny | CheckPoint @ FW-1Machine | 1 |
| | Firewall Deny | CheckPoint @ FW-1Machine | 1 |
| | Firewall Deny | CheckPoint @ FW-1Machine | 1 |
| | Firewall Deny | | 1 |
| | Firewall Deny | | 1 |
| | Firewall Deny | | 1 |
| | Firewall Deny | CheckPoint @ FW-1Machine | 1 |
| | Firewall Deny | CheckPoint @ FW-1Machine | 1 |
| | Firewall Deny | CheckPoint @ FW-1Machine | 1 |

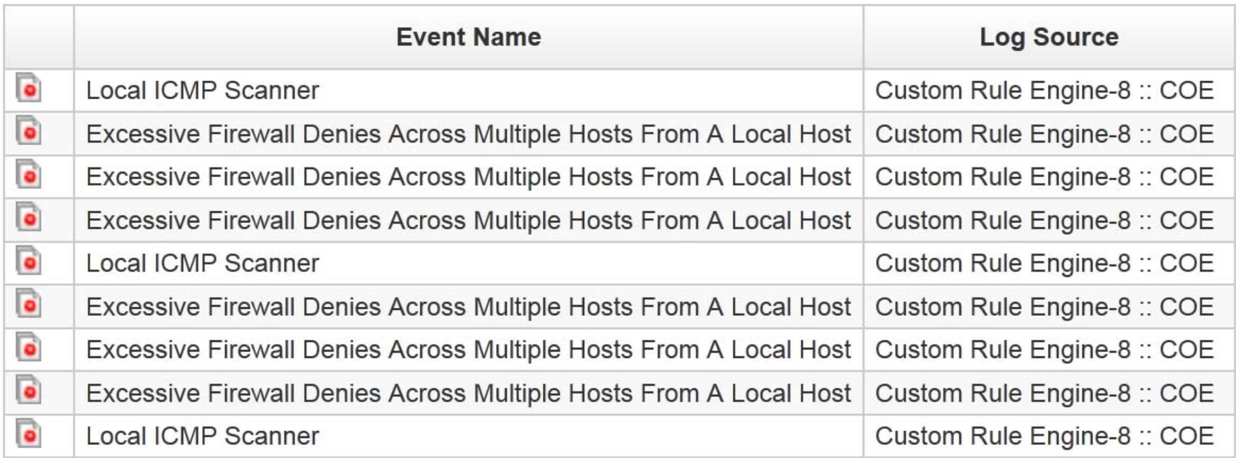
Filter on Event Name is Firewall Deny
Filter on Event Name is not Firewall Deny
False Positive

*Filtering events*

You can right-click most fields to filter them. Use the **False Positive** option to prevent this and similar events from contributing to an offense.

# Filtering events (2 of 3)

By filtering **Firewall Deny** events, you can focus on events that do not originate from the firewall



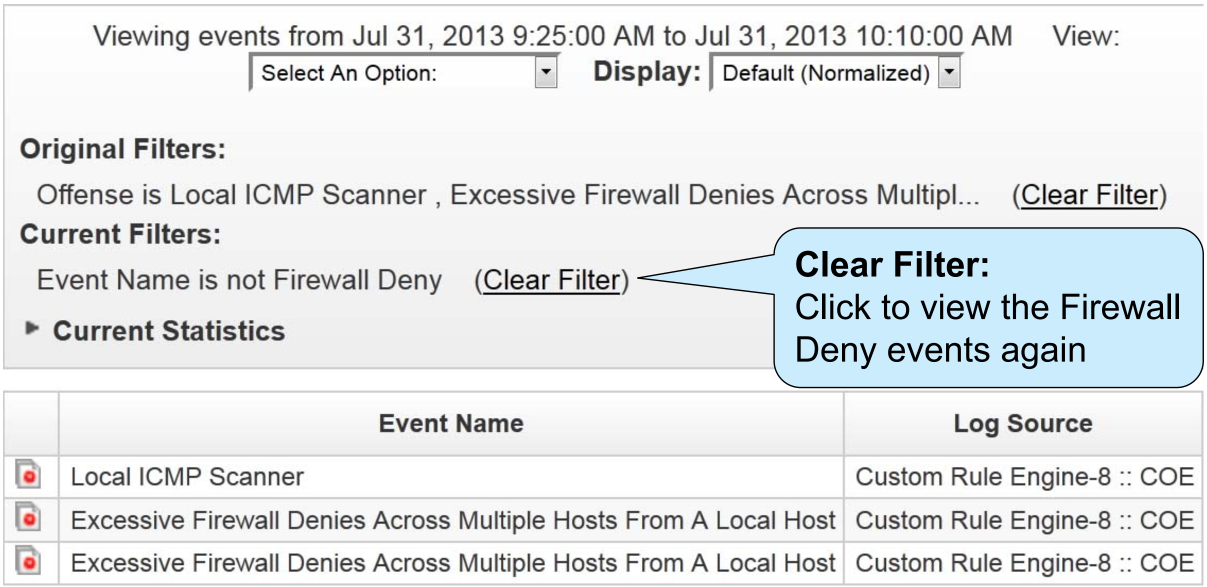
| | Event Name | Log Source |
|---|---|---|
| ● | Local ICMP Scanner | Custom Rule Engine-8 :: COE |
| ● | Excessive Firewall Denies Across Multiple Hosts From A Local Host | Custom Rule Engine-8 :: COE |
| ● | Excessive Firewall Denies Across Multiple Hosts From A Local Host | Custom Rule Engine-8 :: COE |
| ● | Excessive Firewall Denies Across Multiple Hosts From A Local Host | Custom Rule Engine-8 :: COE |
| ● | Local ICMP Scanner | Custom Rule Engine-8 :: COE |
| ● | Excessive Firewall Denies Across Multiple Hosts From A Local Host | Custom Rule Engine-8 :: COE |
| ● | Excessive Firewall Denies Across Multiple Hosts From A Local Host | Custom Rule Engine-8 :: COE |
| ● | Excessive Firewall Denies Across Multiple Hosts From A Local Host | Custom Rule Engine-8 :: COE |
| ● | Local ICMP Scanner | Custom Rule Engine-8 :: COE |

The Custom Rule Engine (CRE) in QRadar SIEM created the events in this list to alert you to suspicious activity

After filtering the **Firewall Deny** events, the List of Events displays the events created by the Custom Rule Engine (CRE) in QRadar SIEM. These events do not carry a payload because they are not based on a raw event.

In the example on the slide, the filtered **Firewall Deny** events sent by the **CheckPoint @ FW-1Machine** log source. The Low Level Category column (not displayed on the slide) indicates that QRadar SIEM classified those events into the ICMP Reconnaissance and Network Sweep categories.

# Filtering events (3 of 3)



Viewing events from Jul 31, 2013 9:25:00 AM to Jul 31, 2013 10:10:00 AM View: Select An Option: **Display:** Default (Normalized)

**Original Filters:**

Offense is Local ICMP Scanner , Excessive Firewall Denies Across Multipl... (Clear Filter)

**Current Filters:**

Event Name is not Firewall Deny (Clear Filter)

▸ **Current Statistics**

**Clear Filter:**
Click to view the Firewall Deny events again

| | Event Name | Log Source |
|---|---|---|
| | Local ICMP Scanner | Custom Rule Engine-8 :: COE |
| | Excessive Firewall Denies Across Multiple Hosts From A Local Host | Custom Rule Engine-8 :: COE |
| | Excessive Firewall Denies Across Multiple Hosts From A Local Host | Custom Rule Engine-8 :: COE |

Unlike searches, filters do not query each event processor

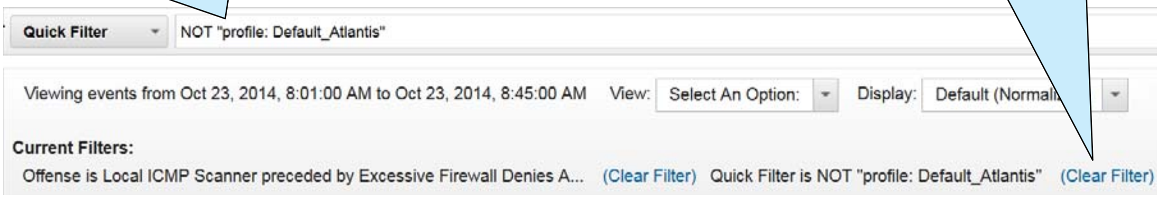
**Note:** Searches are introduced later in this course.

# Applying a Quick Filter to the payload

- The payload of an event contains the raw event that mentions the firewall profile that denied the connection
- To verify that the company's main profile, Atlantis, was always active, filter events without **profile: Default_Atlantis** in the payload

**Quick Filter:**
Filter for events that do not contain **profile: Default_Atlantis** in the payload

**Clear Filter:**
Click to view all events of the offense again



Quick Filter ▾ NOT "profile: Default_Atlantis"

Viewing events from Oct 23, 2014, 8:01:00 AM to Oct 23, 2014, 8:45:00 AM View: Select An Option: ▾ Display: Default (Normal ▾

**Current Filters:**
Offense is Local ICMP Scanner preceded by Excessive Firewall Denies A... (Clear Filter) Quick Filter is NOT "profile: Default_Atlantis" (Clear Filter)

*Applying a Quick Filter to the payload*

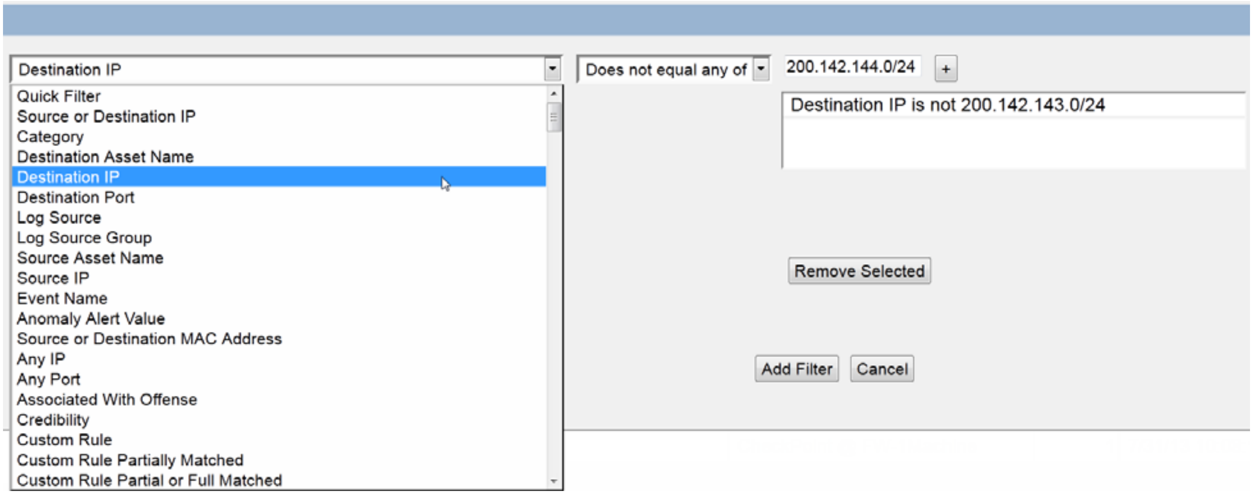
Quick Filter supports expressions with AND, OR, and NOT. For example, when you apply the **NOT "profile: Default_Atlantis"** Quick Filter and no events show, you can assume that all of the event's payloads mention the firewall profile **Default_Atlantis** because no other firewall profile was active.

**Note:** Refer to the *QRadar SIEM Users Guide* (http://ibm.co/1wvpSEE) for more information about the expressions that Quick Filter supports.

A coalesced event contains only the payload of one of the raw events that are bundled. Therefore, quick filtering looks into only that one payload.

# Using another filter option

- You can use each event field as a filter
- To create a filter, in the top menu bar, click the icon Add Filter



Destination IP

Does not equal any of

200.142.144.0/24

Destination IP is not 200.142.143.0/24

*Using another filter option*

Other filter options are available:

- Instead of an IP address, you can enter a range of IP addresses, in CIDR notation, such as 10.100.0.016.
- To include multiple filters, write **AND** between each one.
- To build an OR expression, use **Equals any of**.
- To search the payload for something that is not normalized, use **Payload contains** and **Payload Matches Regular Expression**. To find these menu items, scroll to the end of the list.

# Lesson 3  Using grouping to investigate events

## Lesson:  Using grouping to investigate events

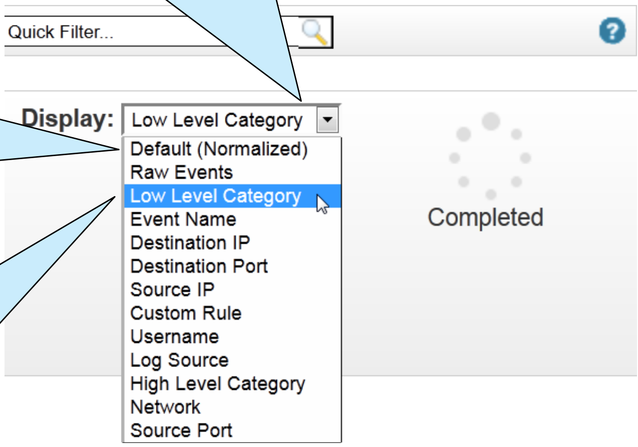
Grouping events arranges the events so you can view them from different perspectives. In this lesson, you learn how to group the events of an offense.

# Grouping events

**Display:**
Explore the events further by grouping them; for example, group them by their **Low Level Category**

**Default (Normalized):**
By default, QRadar SIEM shows normalized events without grouping

**Raw Events:**
Instead of grouping, QRadar SIEM shows the raw events stored in the payload of each normalized event



Display: Low Level Category

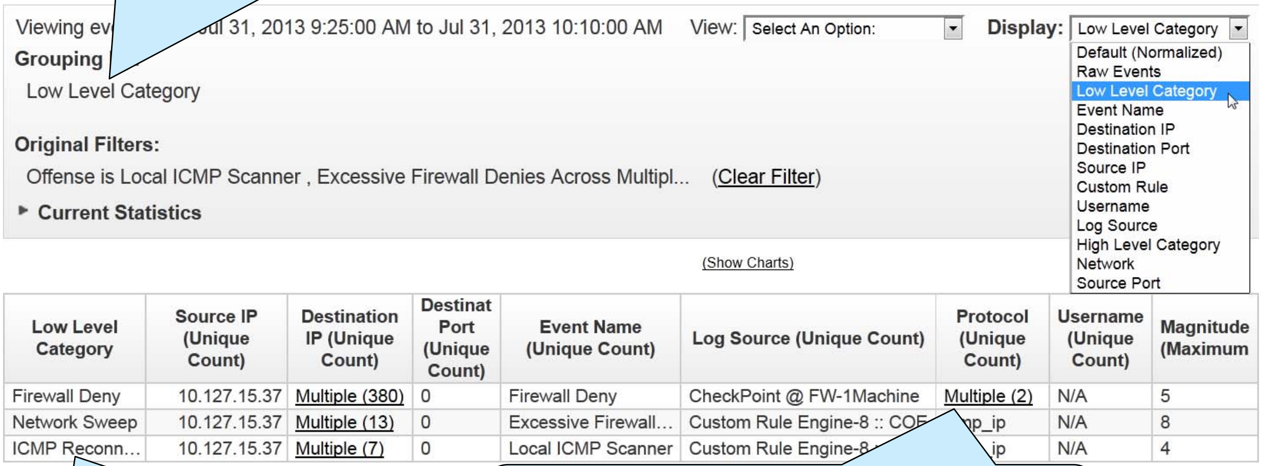
*Grouping events*

After changing the grouping, events are organized accordingly. All filters are retained.

## Grouping events by low-level category

**Grouping By:**
QRadar SIEM shows the currently selected grouping above the filters

In this example, exploring by grouping indicates a second protocol



Viewing ev ul 31, 2013 9:25:00 AM to Jul 31, 2013 10:10:00 AM View: Select An Option: **Display:** Low Level Category

**Grouping**
Low Level Category

**Original Filters:**
Offense is Local ICMP Scanner , Excessive Firewall Denies Across Multipl... (Clear Filter)

▸ **Current Statistics**

(Show Charts)

| Low Level Category | Source IP (Unique Count) | Destination IP (Unique Count) | Destinat Port (Unique Count) | Event Name (Unique Count) | Log Source (Unique Count) | Protocol (Unique Count) | Username (Unique Count) | Magnitude (Maximum |
|---|---|---|---|---|---|---|---|---|
| Firewall Deny | 10.127.15.37 | Multiple (380) | 0 | Firewall Deny | CheckPoint @ FW-1Machine | Multiple (2) | N/A | 5 |
| Network Sweep | 10.127.15.37 | Multiple (13) | 0 | Excessive Firewall... | Custom Rule Engine-8 :: COE | p_ip | N/A | 8 |
| ICMP Reconn... | 10.127.15.37 | Multiple (7) | 0 | Local ICMP Scanner | Custom Rule Engine-8 | ip | N/A | 4 |

All events are aggregated by their low-level category

**Protocol:**
Some events recorded an additional protocol; click **Multiple (2)**

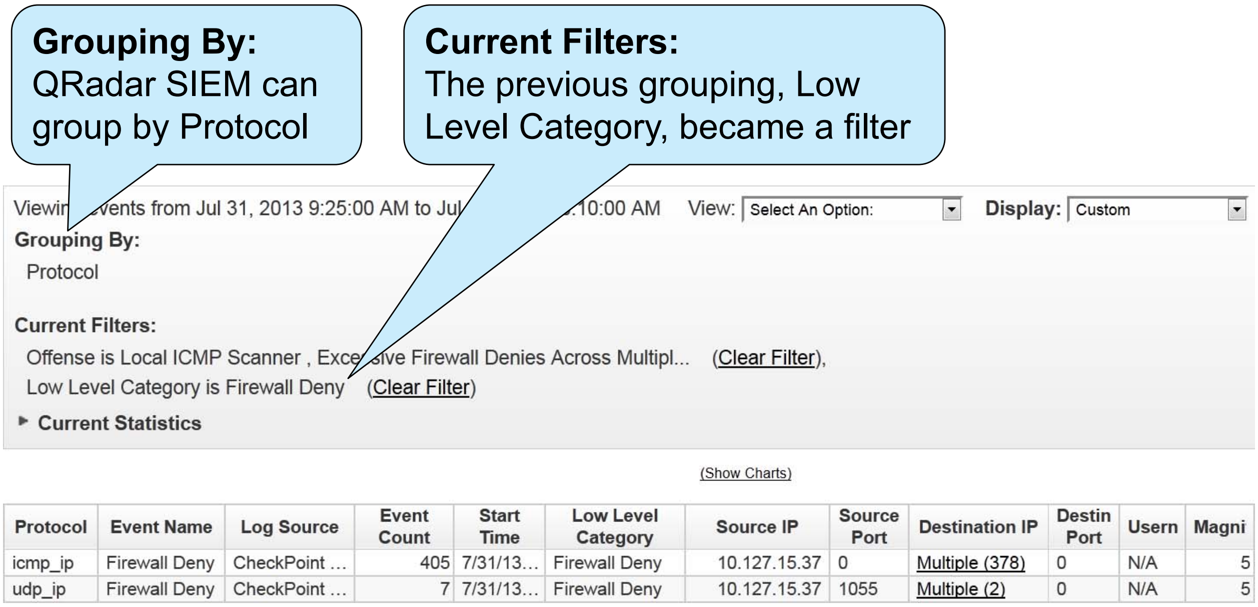
*Grouping events by low-level category*

Grouping summarizes all events by the chosen field. In this example, grouping events by **Low Level Category** displays a column of all the unique low-level categories and summary information of the other columns, such as the number of unique protocols for each low-level category.

In the Protocol column, **Multiple (x)** is displayed, where *x* is the number of unique protocols. If only one protocol exists for a low-level category, that value displays instead of **Multiple (x)**. When you double-click the **Multiple (x)** protocols, a browser window that groups these protocols opens. The new window displays the unique protocols summarized by the previous grouping of low-level category.

## Grouping events by protocol

In the Protocol column, click **Multiple (2)** to open a window with events grouped by protocol; you learn that the firewall denied **udp_ip** in addition to **icmp_ip**



**Grouping By:**
QRadar SIEM can group by Protocol

**Current Filters:**
The previous grouping, Low Level Category, became a filter

Viewir events from Jul 31, 2013 9:25:00 AM to Jul :10:00 AM View: Select An Option: Display: Custom

**Grouping By:**
Protocol

**Current Filters:**
Offense is Local ICMP Scanner , Excessive Firewall Denies Across Multipl... (Clear Filter),
Low Level Category is Firewall Deny (Clear Filter)

▸ **Current Statistics**

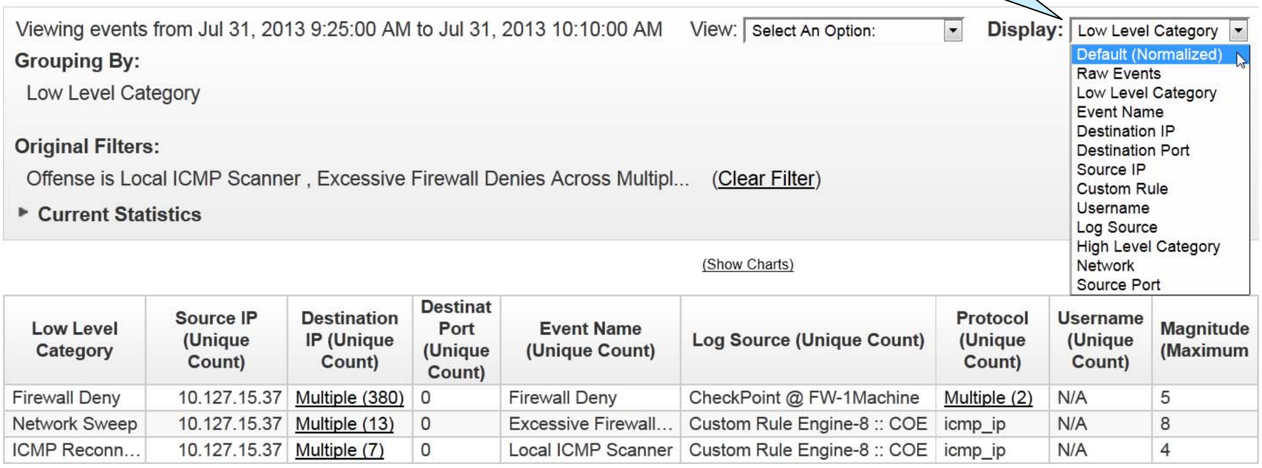
(Show Charts)

| Protocol | Event Name | Log Source | Event Count | Start Time | Low Level Category | Source IP | Source Port | Destination IP | Destin Port | Usern | Magni |
|---|---|---|---|---|---|---|---|---|---|---|---|
| icmp_ip | Firewall Deny | CheckPoint ... | 405 | 7/31/13... | Firewall Deny | 10.127.15.37 | 0 | Multiple (378) | 0 | N/A | 5 |
| udp_ip | Firewall Deny | CheckPoint ... | 7 | 7/31/13... | Firewall Deny | 10.127.15.37 | 1055 | Multiple (2) | 0 | N/A | 5 |

To explore the event further, click **Multiple (2)** to view the two destinations IP addresses that the source IP address wanted to contact using **udp_ip**. When finished, close the window.

# Removing grouping criteria

**Display:**
Group by **Default (Normalized)** to remove the grouping by Low Level Category



Viewing events from Jul 31, 2013 9:25:00 AM to Jul 31, 2013 10:10:00 AM View: Select An Option: **Display:** Low Level Category

**Grouping By:**
Low Level Category

**Original Filters:**
Offense is Local ICMP Scanner , Excessive Firewall Denies Across Multipl... (Clear Filter)

▸ **Current Statistics**

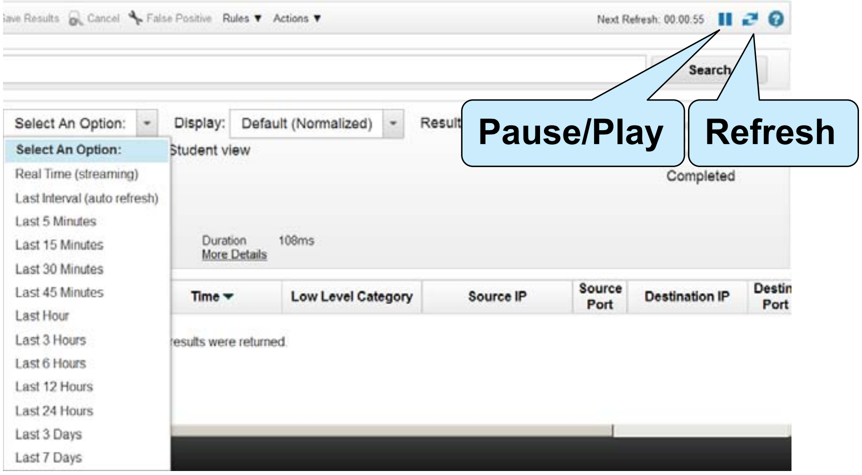
| Low Level Category | Source IP (Unique Count) | Destination IP (Unique Count) | Destinat Port (Unique Count) | Event Name (Unique Count) | Log Source (Unique Count) | Protocol (Unique Count) | Username (Unique Count) | Magnitude (Maximum |
|---|---|---|---|---|---|---|---|---|
| Firewall Deny | 10.127.15.37 | Multiple (380) | 0 | Firewall Deny | CheckPoint @ FW-1Machine | Multiple (2) | N/A | 5 |
| Network Sweep | 10.127.15.37 | Multiple (13) | 0 | Excessive Firewall... | Custom Rule Engine-8 :: COE | icmp_ip | N/A | 8 |
| ICMP Reconn... | 10.127.15.37 | Multiple (7) | 0 | Local ICMP Scanner | Custom Rule Engine-8 :: COE | icmp_ip | N/A | 4 |

*Removing grouping criteria*

## Viewing a range of events

If events are still added to the investigated offenses, view them

- **Real Time (streaming)**: Shows events as they arrive at the Event Processor (EP); grouping and sorting are not available
- **Last Interval (auto refresh)**: Shows the last minute of events; refreshes automatically after 1 minute

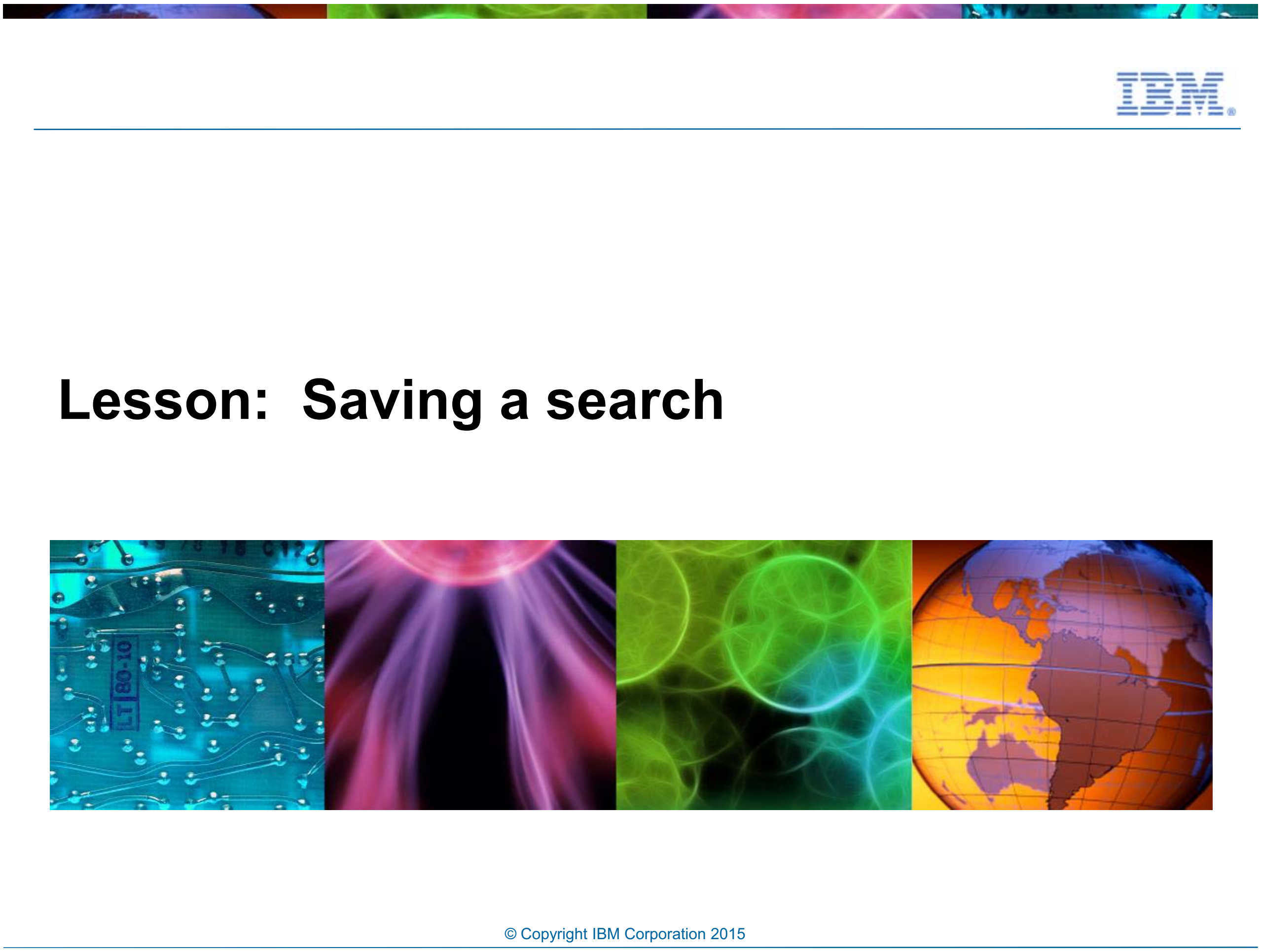


*Viewing a range of events*

In addition to viewing incoming events, you can select a time range from the **View** list. When you open the List of events window from the Offense Summary, QRadar SIEM automatically includes all events added to the offense.

- **Last Interval (auto refresh)**: The last minute of events can be delayed by up to one minute from the time the event reached the Event Processor refresh cycle.
- **Real Time (streaming)**: To view the details of an event, pause streaming and double-click the event.
- **Real Time (streaming)** and **Last Interval (auto refresh)**: Quick Filter on payloads allows filtering on simple words and phrases but not on expressions with AND, OR, and NOT.

# Lesson 4  Saving a search

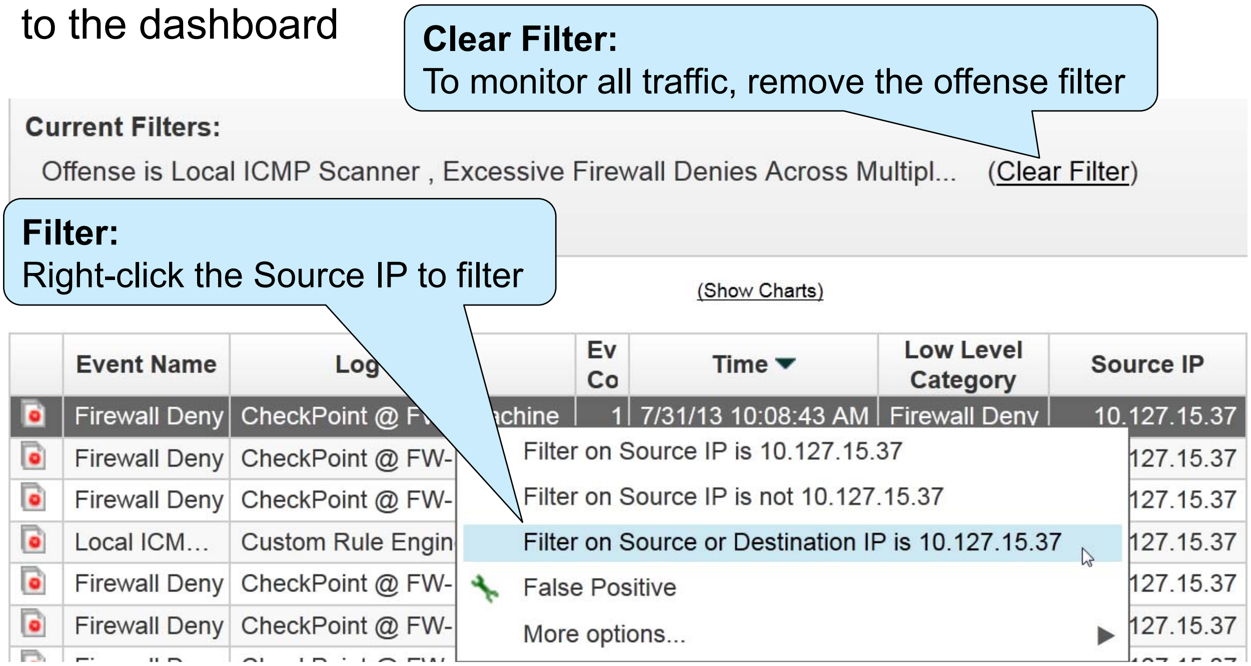


## Lesson:  Saving a search

The event list is the result of the search criteria that you chose. In this lesson, you learn how to save a search and use it to investigate the events that are included in an offense. The scenario that is used as an example in this lesson monitors a suspicious host.

# Monitoring the scanning host (1 of 3)

The event list always displays search results; to view traffic to and from the scanning host, edit this search, save it, and add it to the dashboard



**Clear Filter:**
To monitor all traffic, remove the offense filter

**Filter:**
Right-click the Source IP to filter

**Current Filters:**

Offense is Local ICMP Scanner , Excessive Firewall Denies Across Multipl... (Clear Filter)

(Show Charts)

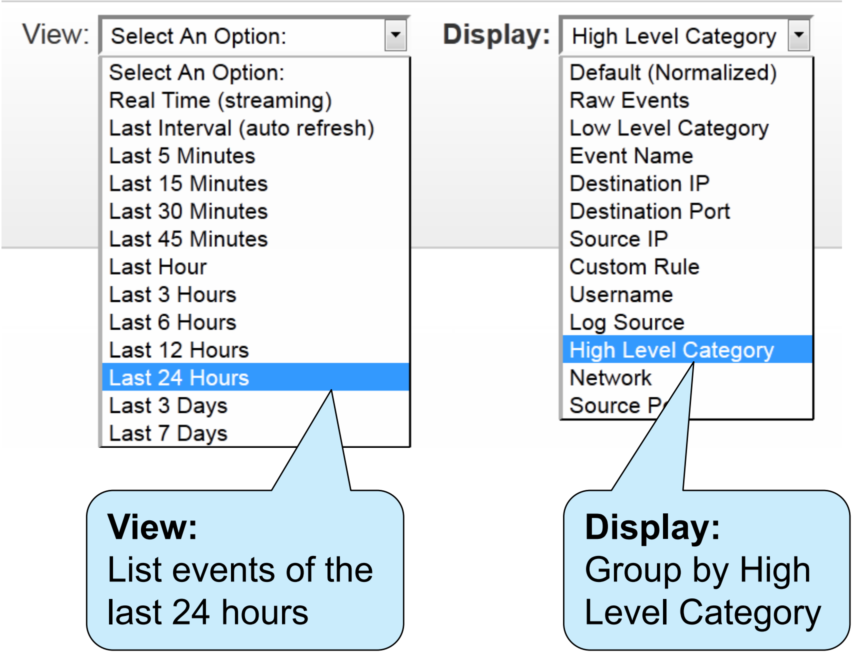
| | Event Name | Log | Ev Co | Time | Low Level Category | Source IP |
|---|---|---|---|---|---|---|
| | Firewall Deny | CheckPoint @ F… achine | 1 | 7/31/13 10:08:43 AM | Firewall Deny | 10.127.15.37 |
| | Firewall Deny | CheckPoint @ FW- | | | | 127.15.37 |
| | Firewall Deny | CheckPoint @ FW- | | | | 127.15.37 |
| | Local ICM… | Custom Rule Engin | | | | 127.15.37 |
| | Firewall Deny | CheckPoint @ FW- | | | | 127.15.37 |
| | Firewall Deny | CheckPoint @ FW- | | | | 127.15.37 |

Filter on Source IP is 10.127.15.37
Filter on Source IP is not 10.127.15.37
Filter on Source or Destination IP is 10.127.15.37
False Positive
More options...

*Monitoring the scanning host*

To monitor a scanning host, filter on the IP address and then clear the offense filter. If you clear the offense filter first, all of the events in the given time range show, making it difficult to find the IP address of interest.

# Monitoring the scanning host (2 of 3)



View: Select An Option:

- Select An Option:
- Real Time (streaming)
- Last Interval (auto refresh)
- Last 5 Minutes
- Last 15 Minutes
- Last 30 Minutes
- Last 45 Minutes
- Last Hour
- Last 3 Hours
- Last 6 Hours
- Last 12 Hours
- Last 24 Hours
- Last 3 Days
- Last 7 Days

Display: High Level Category

- Default (Normalized)
- Raw Events
- Low Level Category
- Event Name
- Destination IP
- Destination Port
- Source IP
- Custom Rule
- Username
- Log Source
- High Level Category
- Network
- Source P

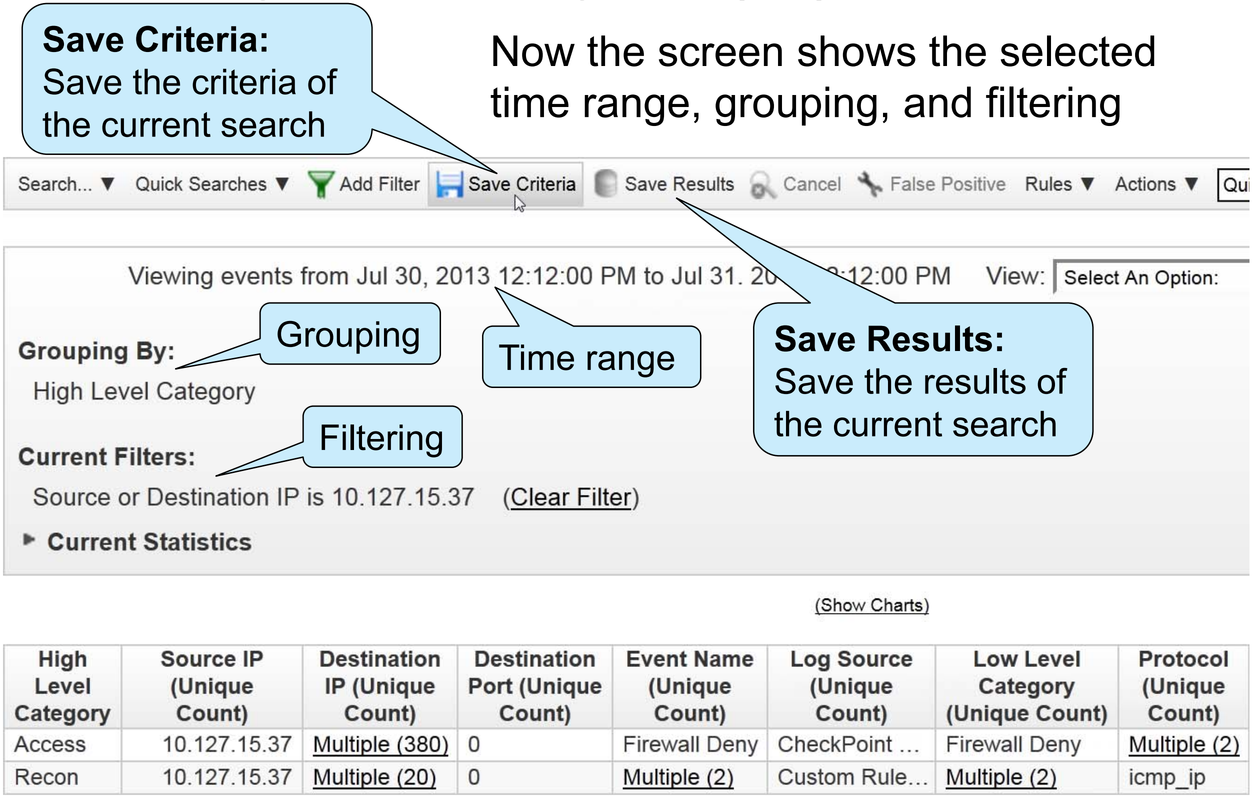
**View:**
List events of the last 24 hours

**Display:**
Group by High Level Category

*Monitoring the scanning host (2 of 3)*

# Monitoring the scanning host (3/3)

Now the screen shows the selected time range, grouping, and filtering



**Save Criteria:** Save the criteria of the current search

**Save Results:** Save the results of the current search

Grouping

Time range

Filtering

Viewing events from Jul 30, 2013 12:12:00 PM to Jul 31. 20 :12:00 PM   View: Select An Option:

**Grouping By:**
High Level Category

**Current Filters:**
Source or Destination IP is 10.127.15.37   (Clear Filter)

▸ **Current Statistics**

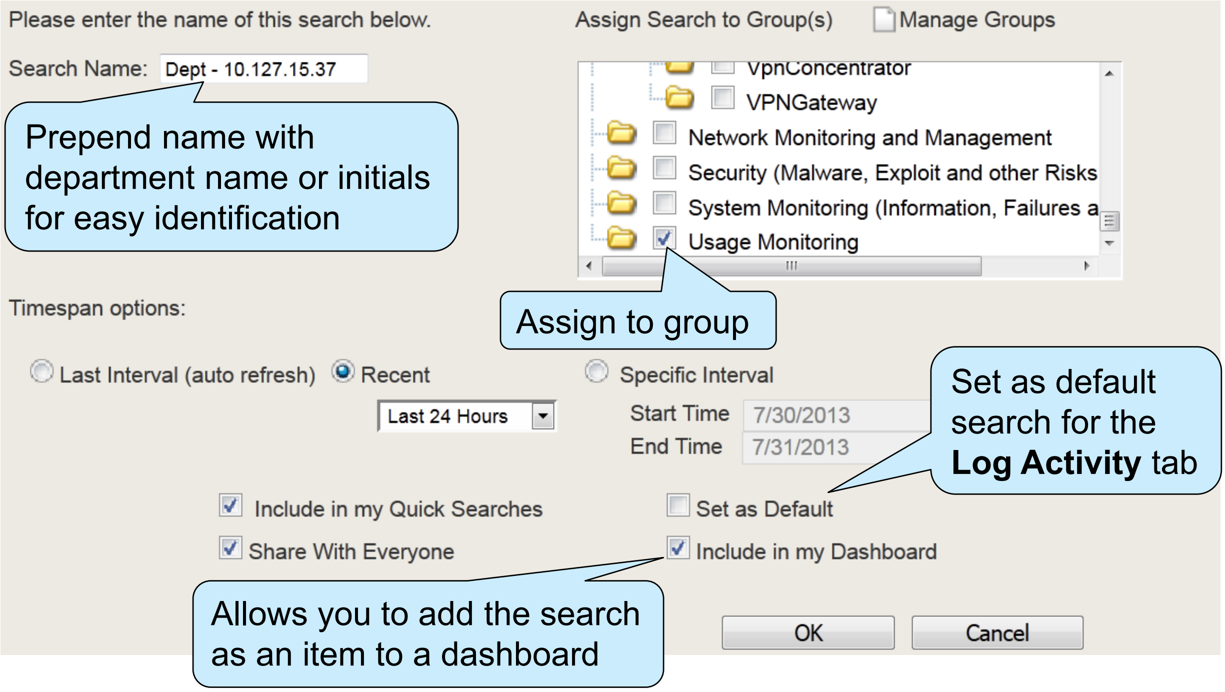
| High Level Category | Source IP (Unique Count) | Destination IP (Unique Count) | Destination Port (Unique Count) | Event Name (Unique Count) | Log Source (Unique Count) | Low Level Category (Unique Count) | Protocol (Unique Count) |
|---|---|---|---|---|---|---|---|
| Access | 10.127.15.37 | Multiple (380) | 0 | Firewall Deny | CheckPoint ... | Firewall Deny | Multiple (2) |
| Recon | 10.127.15.37 | Multiple (20) | 0 | Multiple (2) | Custom Rule... | Multiple (2) | icmp_ip |

*Monitoring the scanning host (3 of 3)*

The key components of a search are time range, grouping, and filtering. You can save the search criteria, the results, or both. To save the displayed search, click **Save Criteria**.

# Saving search criteria

## Save the search with the criteria specified



Please enter the name of this search below.

Search Name: Dept - 10.127.15.37

Assign Search to Group(s) Manage Groups

- □ VpnConcentrator
- □ VPNGateway
- □ Network Monitoring and Management
- □ Security (Malware, Exploit and other Risks
- □ System Monitoring (Information, Failures a
- ☑ Usage Monitoring

Timespan options:

○ Last Interval (auto refresh) ● Recent ○ Specific Interval

Last 24 Hours

Start Time 7/30/2013

End Time 7/31/2013

☑ Include in my Quick Searches

☑ Share With Everyone

□ Set as Default

☑ Include in my Dashboard

Prepend name with department name or initials for easy identification

Assign to group

Set as default search for the **Log Activity** tab

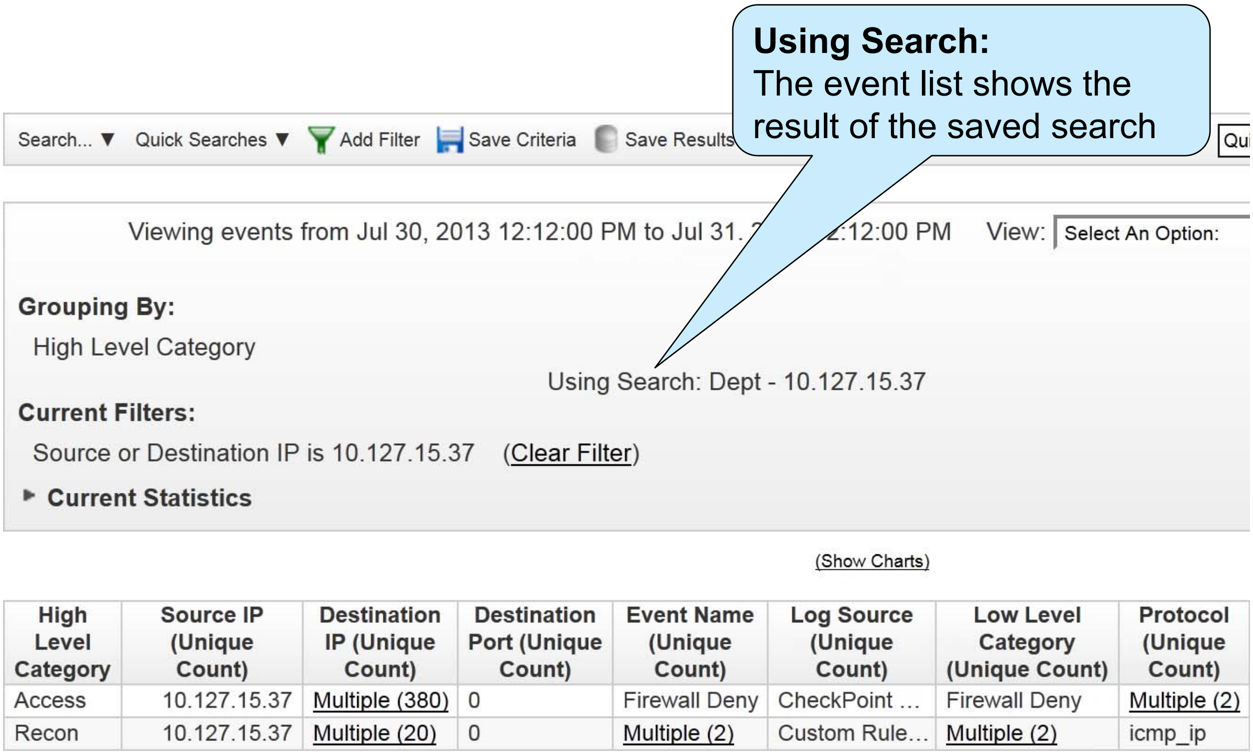
Allows you to add the search as an item to a dashboard

*Saving search criteria*

You can include the criteria shown in the following list in your saved search:

- **Manage Groups**: Add, edit, or remove search groups.
- **Include in Quick Searches**: Add the saved search to the **Quick Searches** menu.
- **Share with Everyone**: Include this search in other users' lists of available searches.
- **Set as Default**: Show the result of this search by default on the **Log Activity** tab.
- **Include in my Dashboard**: Note that only grouped searches can be included in the dashboard.

# Event list using the saved search



**Using Search:**
The event list shows the result of the saved search

Viewing events from Jul 30, 2013 12:12:00 PM to Jul 31. 2 2:12:00 PM

**Grouping By:**
High Level Category

Using Search: Dept - 10.127.15.37

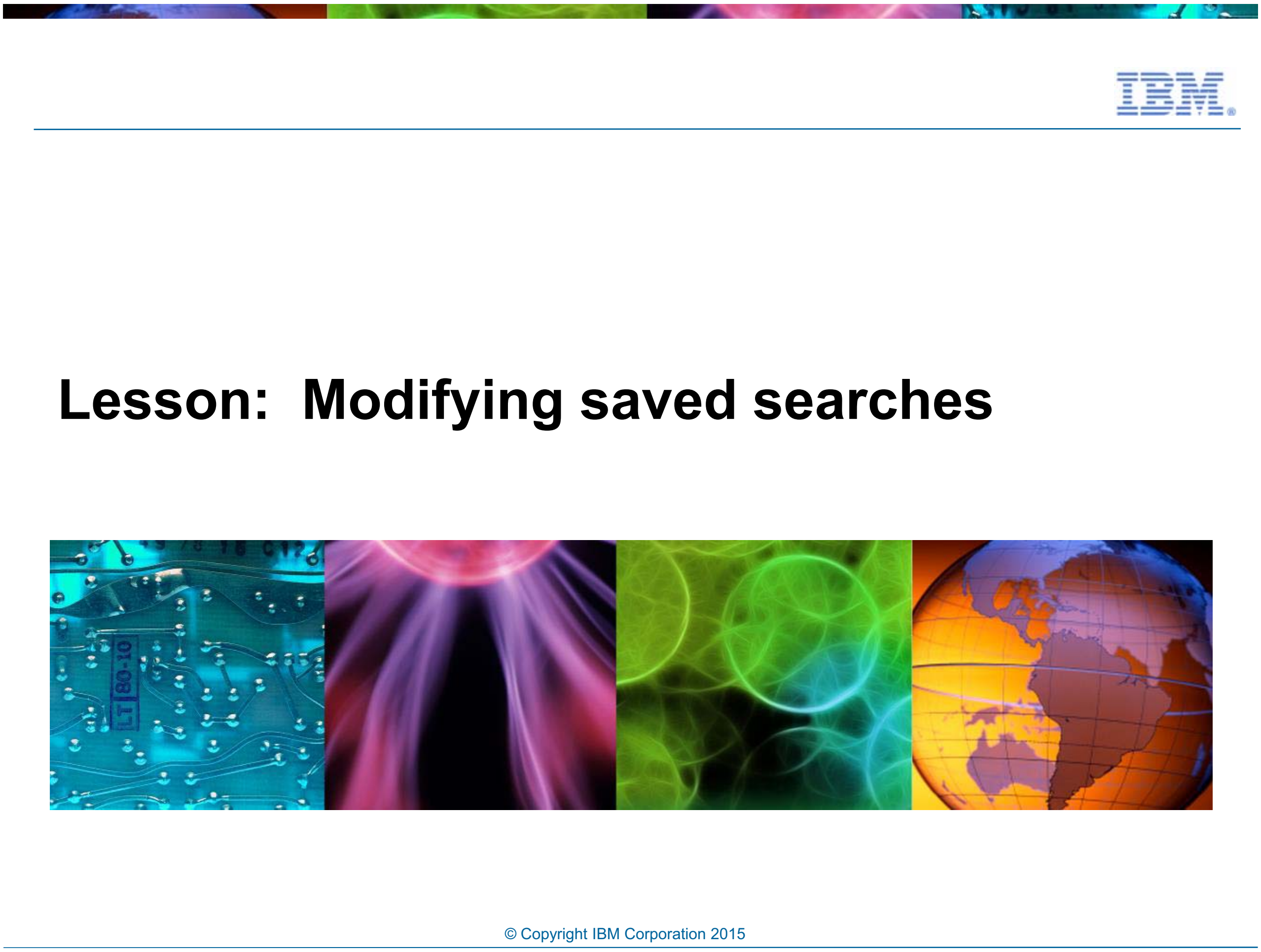
**Current Filters:**
Source or Destination IP is 10.127.15.37 (Clear Filter)

▸ **Current Statistics**

| High Level Category | Source IP (Unique Count) | Destination IP (Unique Count) | Destination Port (Unique Count) | Event Name (Unique Count) | Log Source (Unique Count) | Low Level Category (Unique Count) | Protocol (Unique Count) |
|---|---|---|---|---|---|---|---|
| Access | 10.127.15.37 | Multiple (380) | 0 | Firewall Deny | CheckPoint ... | Firewall Deny | Multiple (2) |
| Recon | 10.127.15.37 | Multiple (20) | 0 | Multiple (2) | Custom Rule... | Multiple (2) | icmp_ip |

*Event list using the saved search*

# Lesson 5 Modifying saved searches

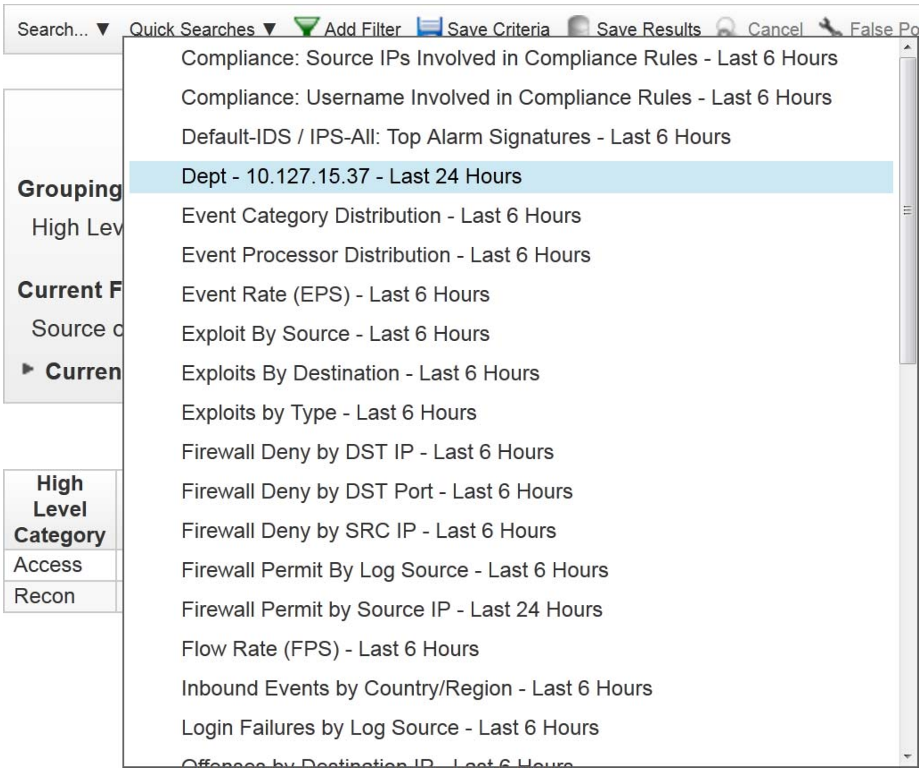


## Lesson: Modifying saved searches

To use QRadar SIEM effectively, manage and modify saved searches. In this lesson, you learn how to work with saved searches.

# About Quick Searches

When you select **Include in my Quick Searches** when saving a search, QRadar SIEM lists the saved search in the predefined **Quick Searches** list

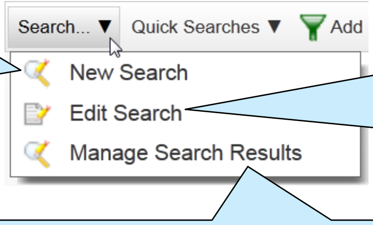


Compliance: Source IPs Involved in Compliance Rules - Last 6 Hours
Compliance: Username Involved in Compliance Rules - Last 6 Hours
Default-IDS / IPS-All: Top Alarm Signatures - Last 6 Hours
Dept - 10.127.15.37 - Last 24 Hours
Event Category Distribution - Last 6 Hours
Event Processor Distribution - Last 6 Hours
Event Rate (EPS) - Last 6 Hours
Exploit By Source - Last 6 Hours
Exploits By Destination - Last 6 Hours
Exploits by Type - Last 6 Hours
Firewall Deny by DST IP - Last 6 Hours
Firewall Deny by DST Port - Last 6 Hours
Firewall Deny by SRC IP - Last 6 Hours
Firewall Permit By Log Source - Last 6 Hours
Firewall Permit by Source IP - Last 24 Hours
Flow Rate (FPS) - Last 6 Hours
Inbound Events by Country/Region - Last 6 Hours
Login Failures by Log Source - Last 6 Hours
Offenses by Destination IP - Last 6 Hours

*About Quick Searches*

# Using alternative methods to create and edit searches

- Most predefined saved searches are not listed under **Quick Searches**
- To find, use, and edit saved searches, select **Search** in the top menu bar



**New Search:** Load a saved search; edit the loaded search or create a new search

**Edit Search:** The Event List is the result of a search; edit this current search or edit another saved search

**Manage Search Results:** QRadar SIEM stores the result from each search for 24 hours; you can revisit, save, or delete results

*Using alternative methods to create and edit searches*

Use the following options on the **Search** menu:

- The **New Search** and **Edit Search** menu items are about search criteria.
- The **Manage Search Results** menu item is about search results.

## Managing search results

You can use the **Manage Search Results** option to complete the following tasks:

- Save results for auditing or forensics
- Delete previously saved search results
- Cancel long-running searches
- Send an email when the search in progress finishes

**Note:** Users see only the searches they create in the Manage Search Results window. Administrators see all searches.

## Canceling a search

QRadar SIEM might delete unsaved search results earlier than 24 hours if it requires the disk space.

When a search is queued or in progress, you can cancel the search in Manage Search Results or by clicking the **Cancel** button in the top menu bar. Search results accumulated before the cancellation are maintained.

## How QRadar SIEM processes searches

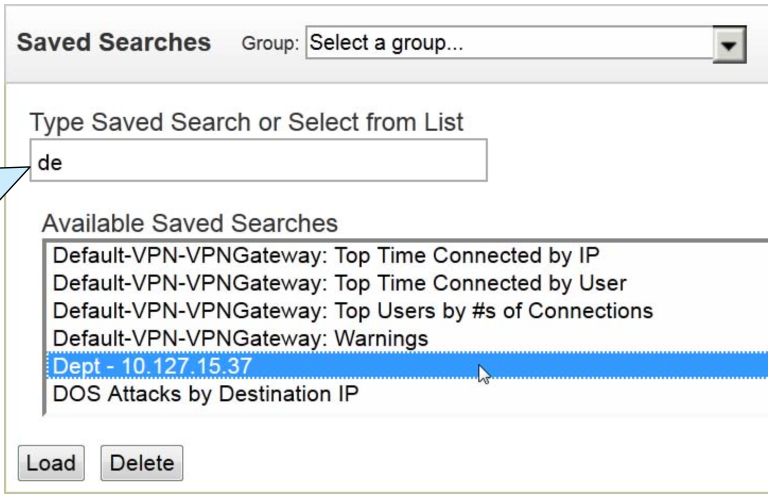
Searches run concurrently in the background. The maximum number of concurrent searches depends on the search and the appliance in use. Subsequent searches above the maximum number are queued. Details of the three search queues are as follows:

- The **low-priority queue** includes searches that generate reports.
- The **normal-priority queue** includes searches created by users.
- The **high-priority queue** includes searches for dashboard items such as graphs and searches for the view Last interval (auto refresh).

# Finding and loading a saved search

If you select **New Search** or **Edit Search**, the Event Search window opens

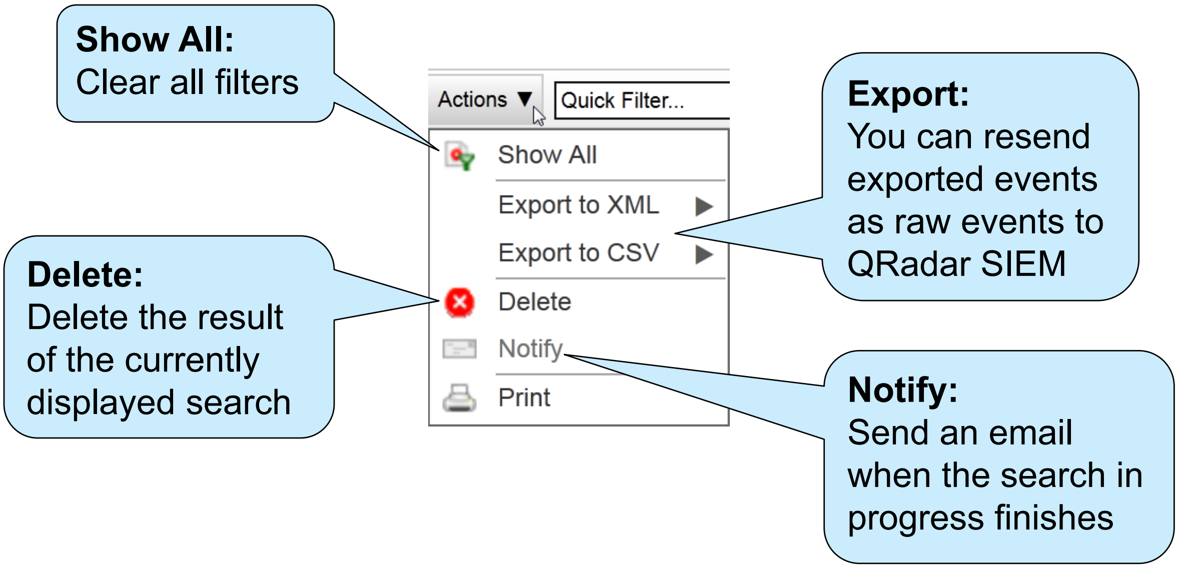
**Type Saved Search:** To find saved searches easily, type your department name, if you prepended your saved searches with it


Saved Searches
Group: Select a group...
Type Saved Search or Select from List
de
Available Saved Searches
Default-VPN-VPNGateway: Top Time Connected by IP
Default-VPN-VPNGateway: Top Time Connected by User
Default-VPN-VPNGateway: Top Users by #s of Connections
Default-VPN-VPNGateway: Warnings
Dept - 10.127.15.37
DOS Attacks by Destination IP
Load
Delete

*Finding and loading a saved search*

The Event Search window provides more search features, such as custom time ranges, grouping by two or more fields, and column arrangement for the results.

# Search actions



**Show All:**
Clear all filters

**Delete:**
Delete the result of the currently displayed search

**Export:**
You can resend exported events as raw events to QRadar SIEM

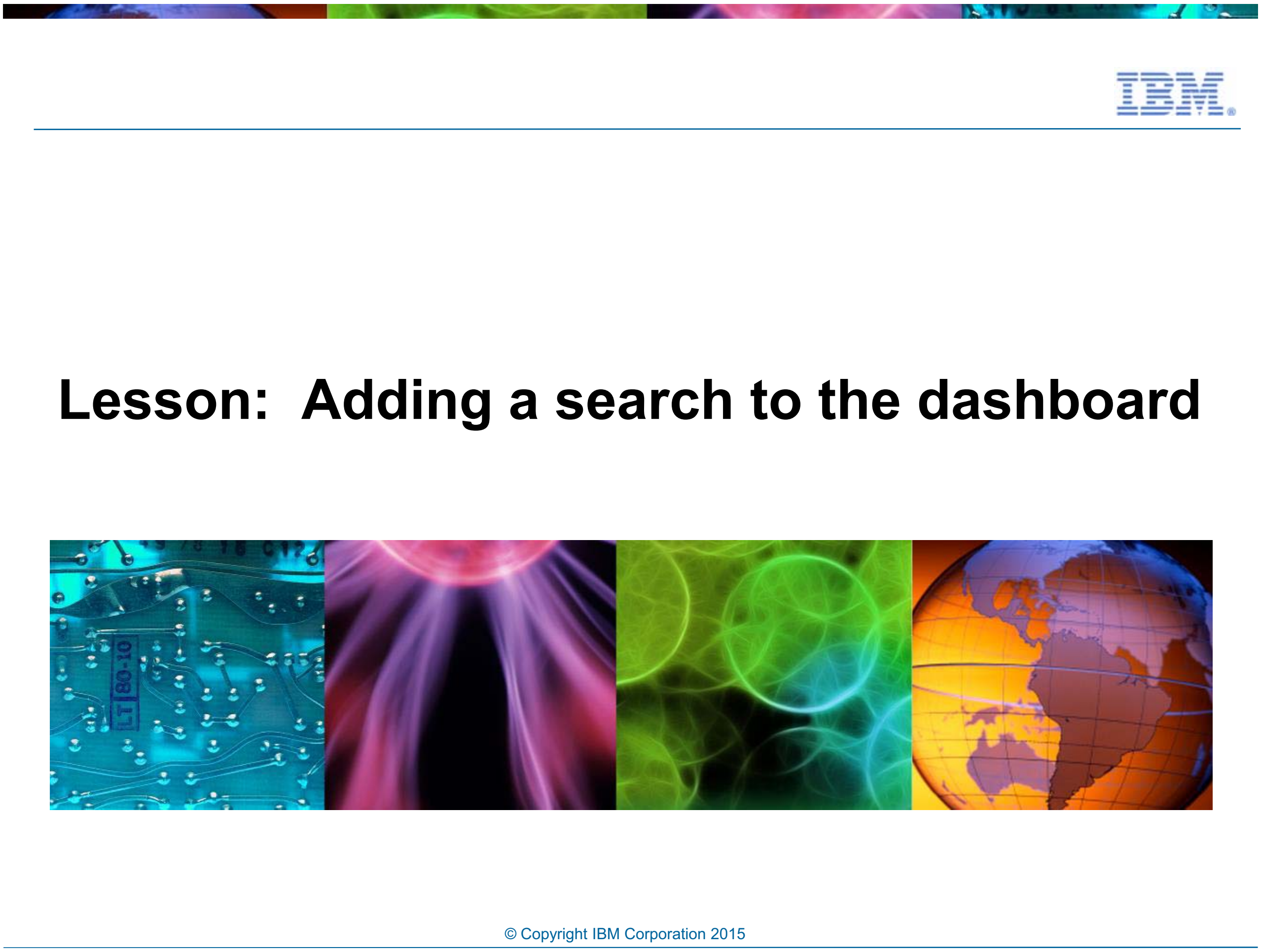
**Notify:**
Send an email when the search in progress finishes

*Search actions*

The following actions are available on the Quick Filter Search’s **Action** menu:

- **Export to XML**, **Export to CSV**, and **Print**: These menu items are not available when viewing *Real Time (streaming)* or viewing partial results from a canceled search.
- **Delete**: This menu item is available only when no search is in progress.
- **Notify**: This menu item is available only when a search is in progress.

# Lesson 6  Adding a search to the dashboard

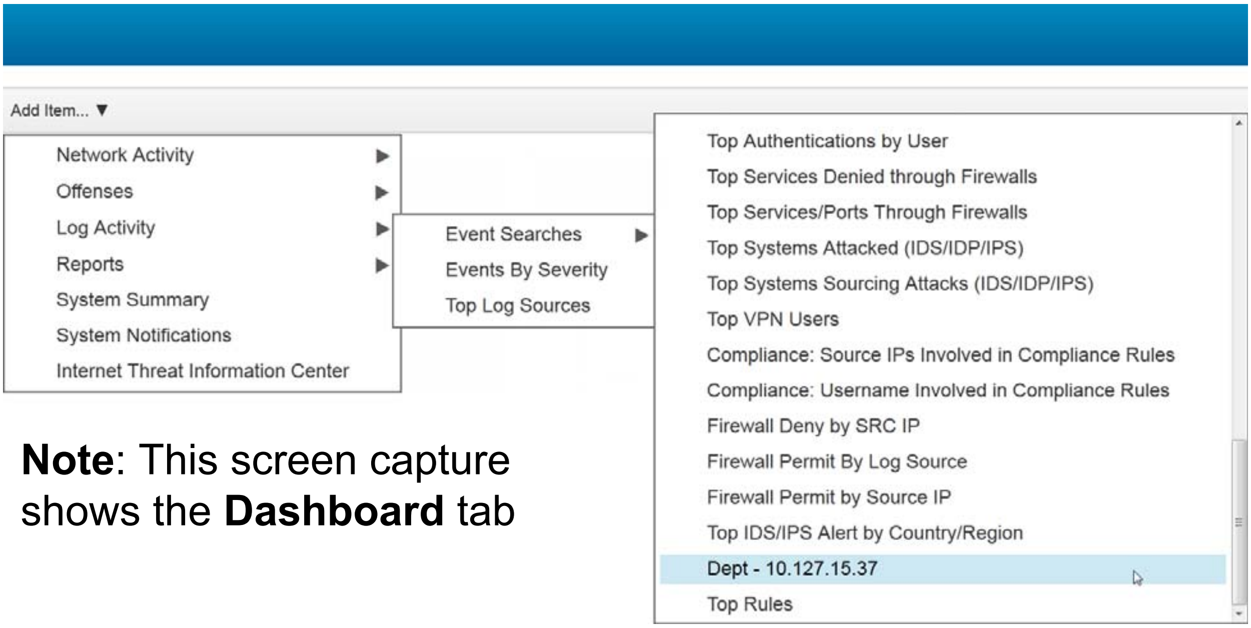


## Lesson:  Adding a search to the dashboard

Dashboard items display the results of searches. In this lesson, you learn how to add and edit a saved search to the dashboard.

# Adding a saved search as a dashboard item

To watch the scanning IP address from the dashboard, add the saved search as a dashboard item

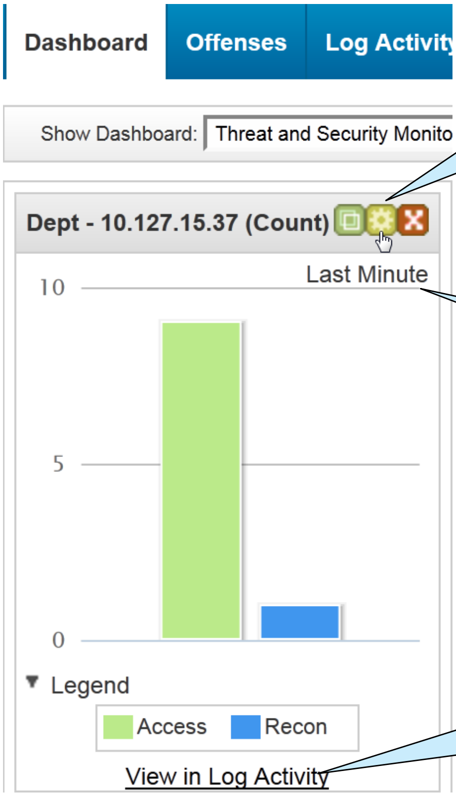

Add Item... ▼
Network Activity ▶
Offenses ▶
Log Activity ▶
Reports ▶
System Summary
System Notifications
Internet Threat Information Center
Event Searches ▶
Events By Severity
Top Log Sources
Top Authentications by User
Top Services Denied through Firewalls
Top Services/Ports Through Firewalls
Top Systems Attacked (IDS/IDP/IPS)
Top Systems Sourcing Attacks (IDS/IDP/IPS)
Top VPN Users
Compliance: Source IPs Involved in Compliance Rules
Compliance: Username Involved in Compliance Rules
Firewall Deny by SRC IP
Firewall Permit By Log Source
Firewall Permit by Source IP
Top IDS/IPS Alert by Country/Region
Dept - 10.127.15.37
Top Rules

**Note**: This screen capture shows the **Dashboard** tab

*Adding a saved search as a dashboard item*

If you select **Include in my Dashboard** when saving the search, you can add it as dashboard item. Dashboard items can display only searches with grouping.

# Saving a search as a dashboard item



**Settings button:**
Modify the settings of an item

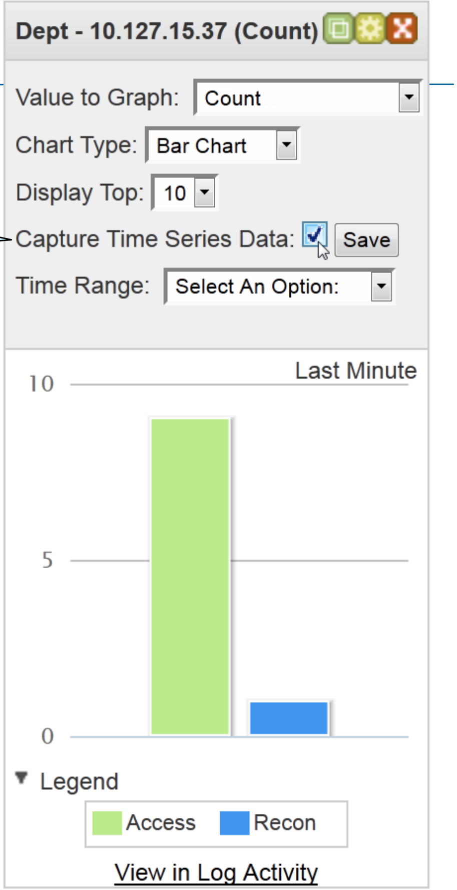
You can add only grouped searches as dashboard items

**Last Minute:**
Unless time-series data is captured, the dashboard item shows only the result of the last 1-minute interval

**View in Log Activity:**
Show the saved search with a 24-hour time range on **Log Activity** tab

*Saving a search as a dashboard item*

# Enabling time-series data



Dept - 10.127.15.37 (Count)

Value to Graph: Count

Chart Type: Bar Chart

Display Top: 10

Capture Time Series Data: ☑ Save

Time Range: Select An Option:

**Capture Time Series Data:** Select to accumulate time-series data to count events and click **Save**

- Capturing time-series data means that QRadar SIEM counts incoming events according your search criteria, grouping, and chosen value to graph
- Most of the predefined searches capture time-series data
- Capturing time-series data can negatively affect the performance of QRadar SIEM

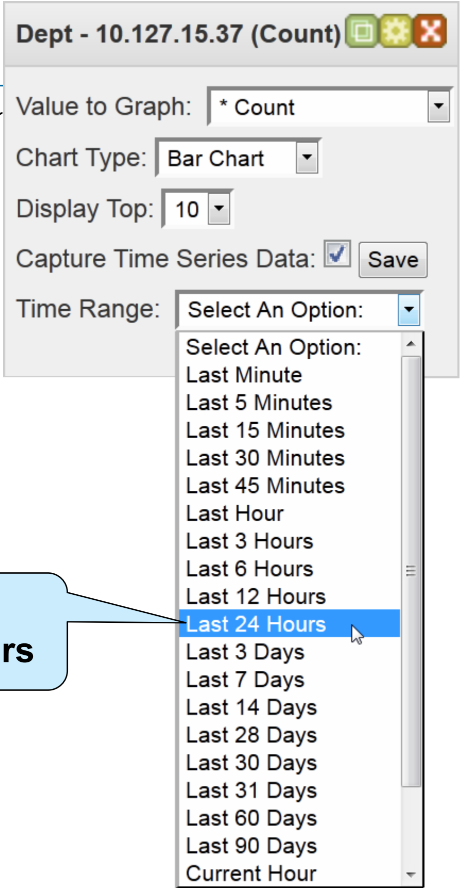
*Enabling time-series data*

**Note:** User permissions control the ability to configure and view time-series data.

Two options are in the **Value to Graph** list:

- **Count**: Number of events **before** coalescing bundles several raw events into one normalized event.
- **Event Count**: Number of events **after** coalescing has bundled several raw events into one normalized event.

## Selecting the time range



Dept - 10.127.15.37 (Count)

Value to Graph: * Count

Chart Type: Bar Chart

Display Top: 10

Capture Time Series Data: ☑ Save

Time Range: Select An Option:

**Value to Graph:**
The asterisk (*) indicates that QRadar SIEM accumulates time-series data for this value

**Time Range:**
Select **Last 24 Hours**

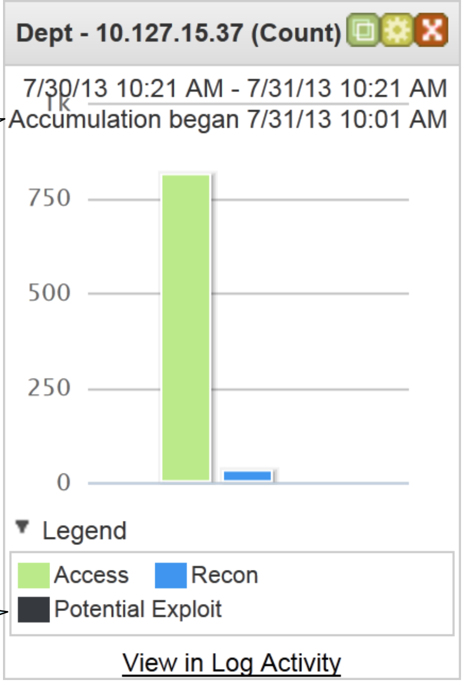
*Selecting the time range*

# Displaying 24 hours in a dashboard item

**Accumulation began:** QRadar SIEM started accumulating time-series data on this date at this time

A third high-level category shows now

**Potential Exploit:** This third high-level category does not have enough events to display in a bar chart



Dept - 10.127.15.37 (Count)

7/30/13 10:21 AM - 7/31/13 10:21 AM
Accumulation began 7/31/13 10:01 AM

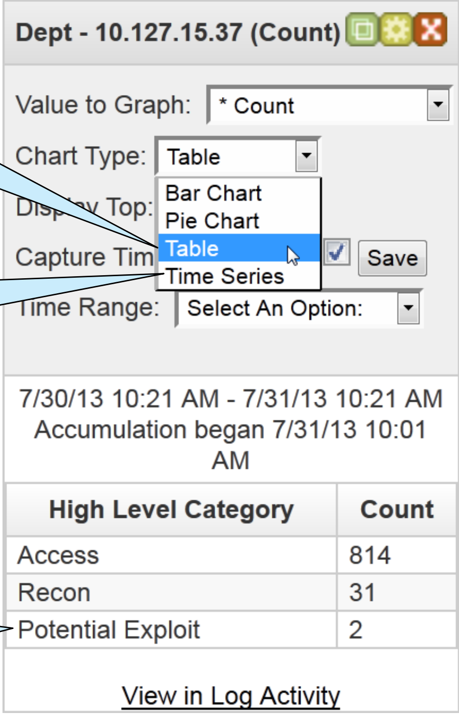
*Displaying 24 hours in a dashboard item*

# Modifying items in the chart type table

**Chart Type: Table**
To view all high-level categories, select the chart type **Table**

**Chart Type: Time Series**
To view trending of data, select the chart type **Time Series**

**Potential Exploit:**
Two events of high-level category Potential Exploit



**Dept - 10.127.15.37 (Count)**

Value to Graph: * Count

Chart Type: Table

Time Range: Select An Option:

7/30/13 10:21 AM - 7/31/13 10:21 AM
Accumulation began 7/31/13 10:01 AM

| High Level Category | Count |
|---|---|
| Access | 814 |
| Recon | 31 |
| Potential Exploit | 2 |

*Modifying items in the chart type table*

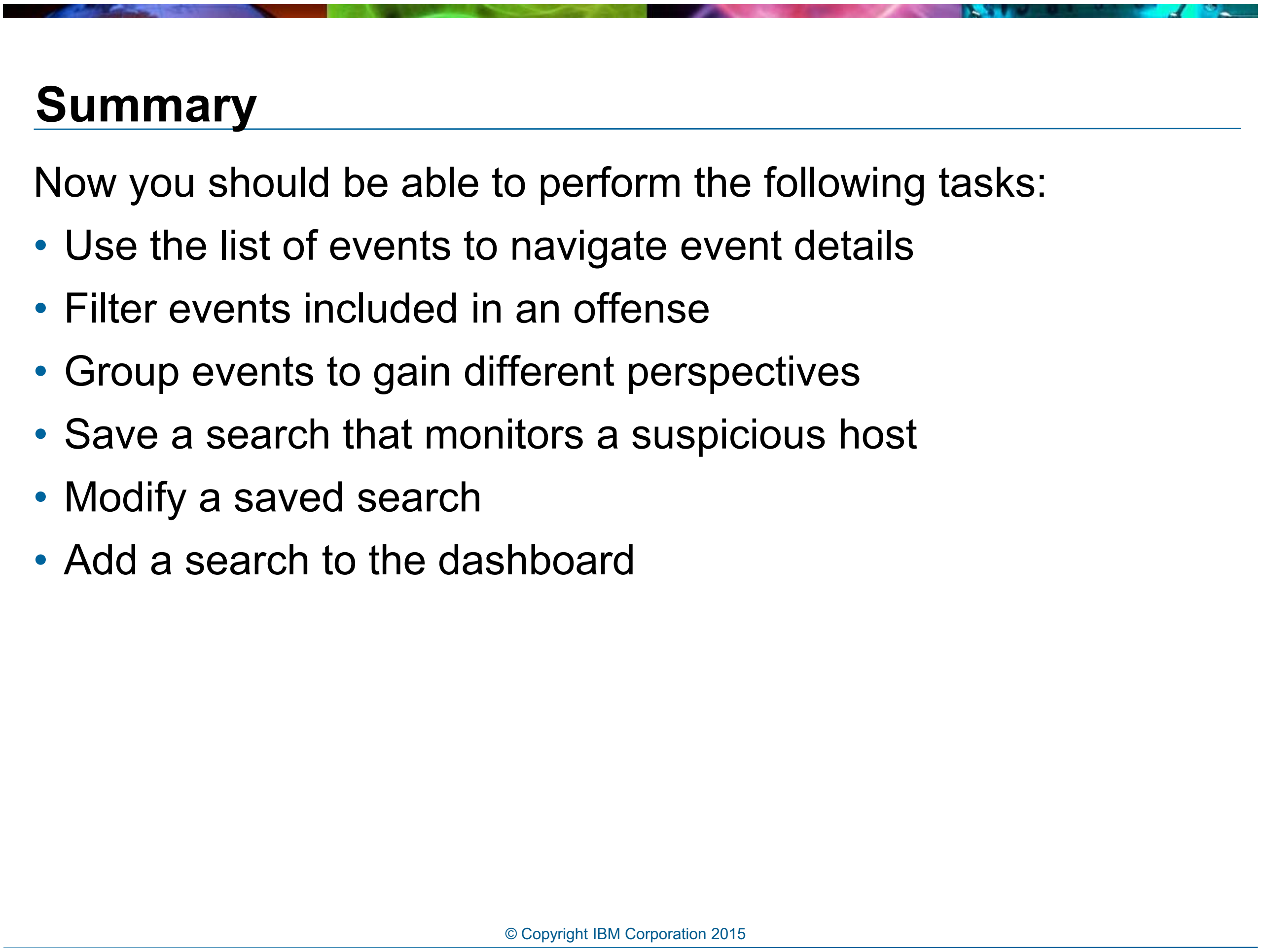
## Student exercises

Use the procedures in the *Student Exercises Guide* to perform these tasks

- Look for events contributing to an offense
- Save search criteria and search results
- Investigate event details

*Student exercises*

Perform the exercises for this unit.



## Summary

Now you should be able to perform the following tasks:

- Use the list of events to navigate event details
- Filter events included in an offense
- Group events to gain different perspectives
- Save a search that monitors a suspicious host
- Modify a saved search
- Add a search to the dashboard

*Summary*

# 6 Using asset profiles to investigate offenses

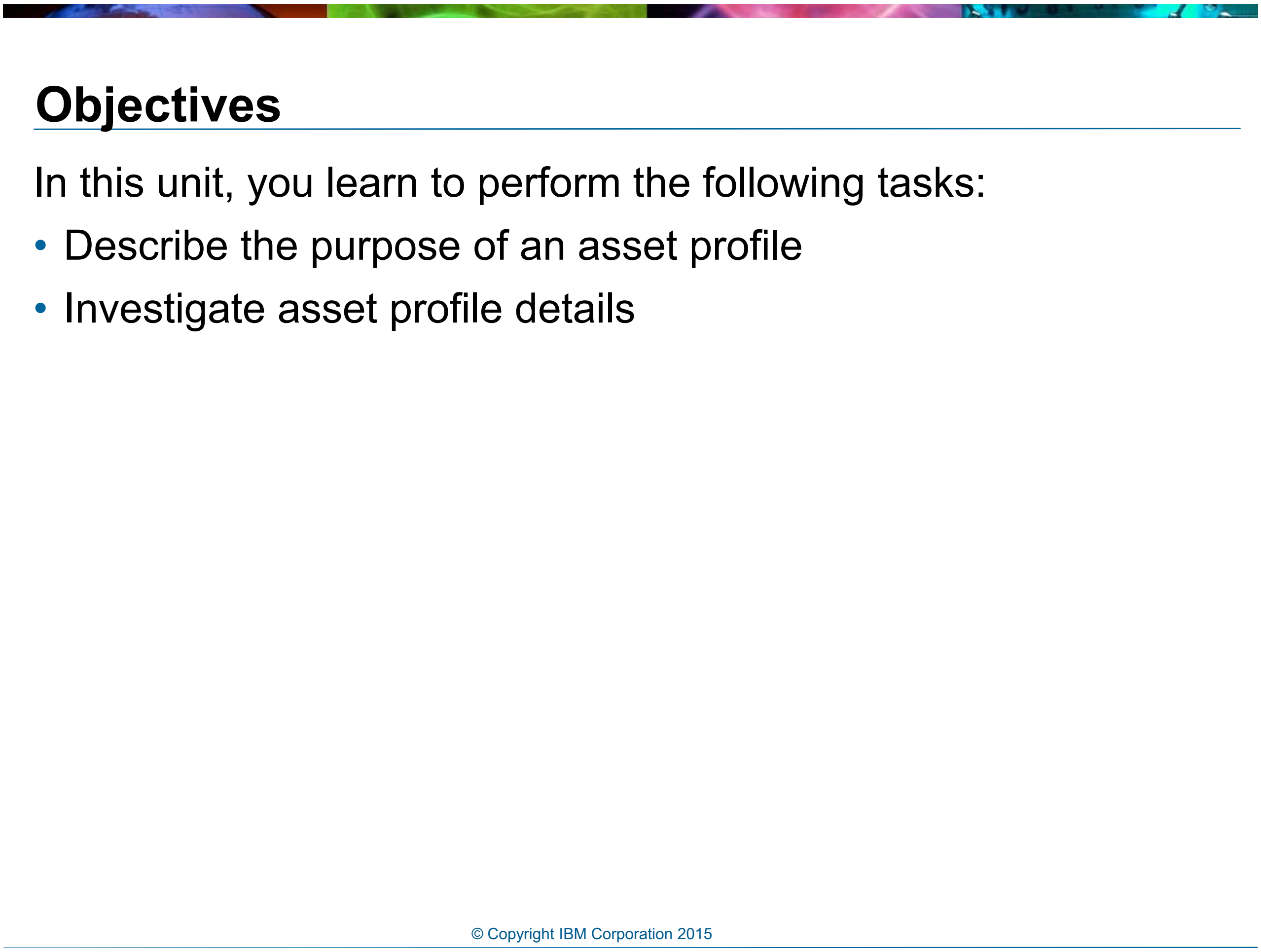
## Using asset profiles to investigate offenses

QRadar SIEM stores security-relevant information about systems in your network in asset profiles. This unit teaches you how asset profiles are created and updated, and how to use them as part of an offense investigation.

References:

- *QRadar SIEM Vulnerability Assessment Configuration Guide* http://ibm.co/1wvpSEE
- *QRadar SIEM Administration Guide* http://ibm.co/1wvpSEE
- *PCI Security Standards Council* https://www.pcisecuritystandards.org

This unit has no student exercises.



## Objectives

In this unit, you learn to perform the following tasks:

- Describe the purpose of an asset profile
- Investigate asset profile details

*Objectives*

# Lesson 1  Assets overview

## Lesson:  Assets overview

The asset profiles of QRadar SIEM store security-relevant data of systems in your network. In this lesson, you are introduced into asset profiles and also learn how QRadar SIEM creates and updates asset profiles.

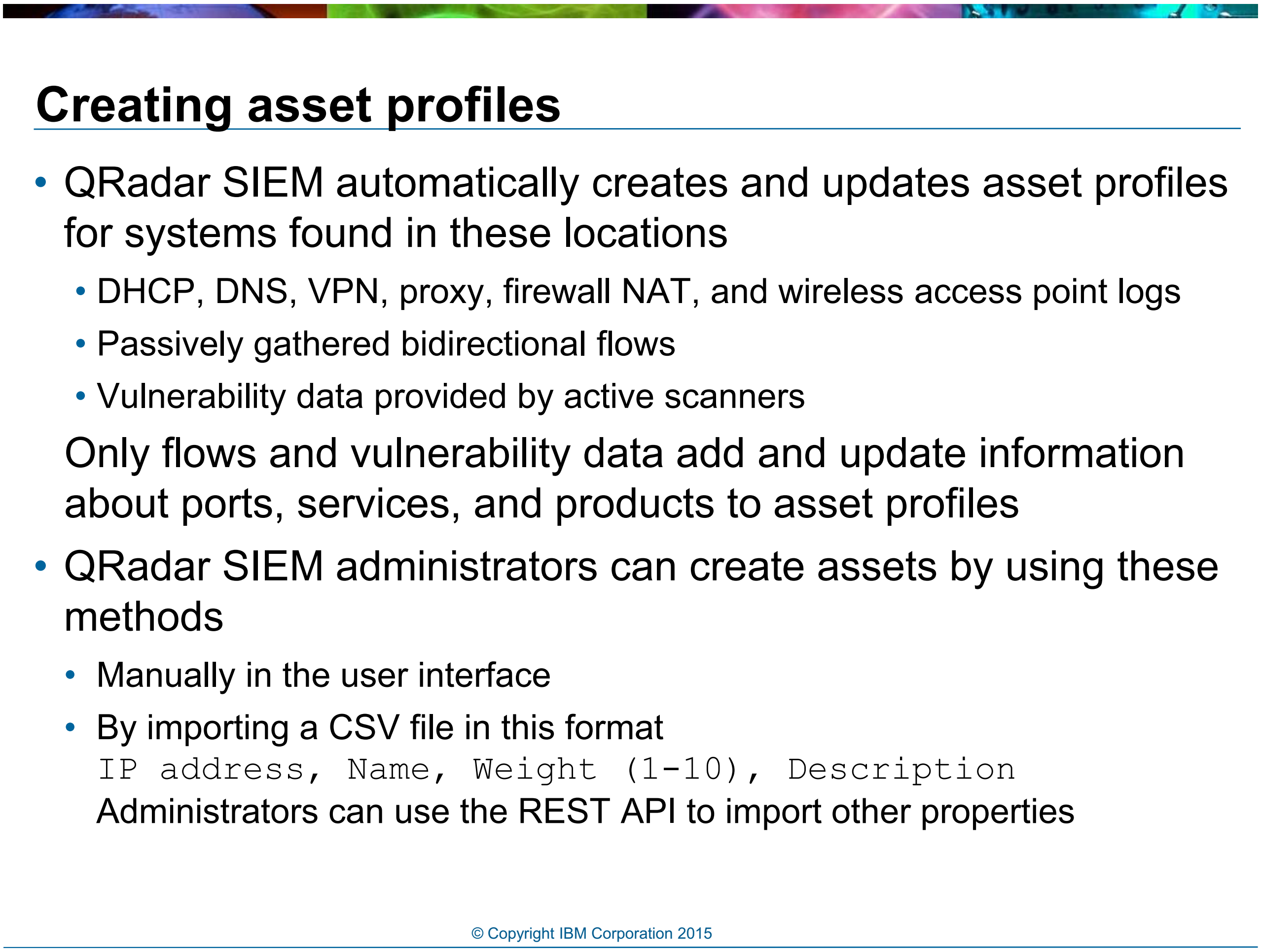
## About asset profiles

- An asset is any type of system or host in the network
- Asset profiles store a wealth of information about the system resources, such as these examples
  - Name
  - IP addresses
  - MAC addresses
  - Operating system
  - Vulnerabilities
  - Services
  - Other resource information
- Use asset profiles to investigate each source and destination IP address of an offense

*About asset profiles*

Asset information is used throughout QRadar SIEM. For example, if a source attempts to attack a specific service running on a specific asset, QRadar SIEM can determine if the asset is vulnerable to this attack by correlating the attack to the asset profile.

**Note:** QRadar SIEM is not a full-fledged asset management system. For example, it does not show which computer hosts a virtual machine. QRadar SIEM also cannot represent storage in asset profiles.



## Creating asset profiles

- QRadar SIEM automatically creates and updates asset profiles for systems found in these locations
  - DHCP, DNS, VPN, proxy, firewall NAT, and wireless access point logs
  - Passively gathered bidirectional flows
  - Vulnerability data provided by active scanners

  Only flows and vulnerability data add and update information about ports, services, and products to asset profiles
- QRadar SIEM administrators can create assets by using these methods
  - Manually in the user interface
  - By importing a CSV file in this format
    `IP address, Name, Weight (1-10), Description`
    Administrators can use the REST API to import other properties

*Creating asset profiles*

QRadar SIEM administrators can delete asset profiles. A deleted asset profile is recreated if an active scanner finds the system or QRadar SIEM detects it in flow data.

# Lesson 2  Investigating asset details

## Lesson:  Investigating asset details

Information regarding a system in your network is often beneficial to an offense investigation. In this lesson, you learn how to locate asset profiles and find details about an asset.

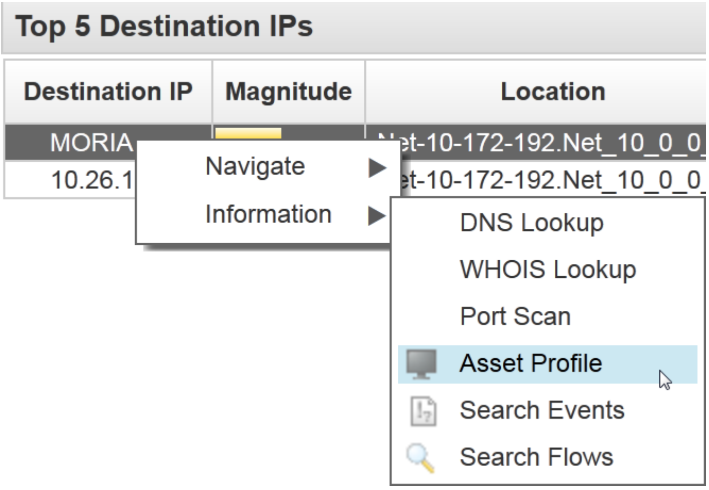
References:

- *QRadar SIEM Vulnerability Assessment Configuration Guide* http://ibm.co/1wvpSEE
- *QRadar SIEM Administration Guide* http://ibm.co/1wvpSEE
- *PCI Security Standards Council* https://www.pcisecuritystandards.org

## Navigating from an offense to an asset

In the Offense Summary, you can navigate to the asset profile of any source or destination by this method

1. Right-click the IP address or asset name
2. Click **Information** > **Asset Profile**



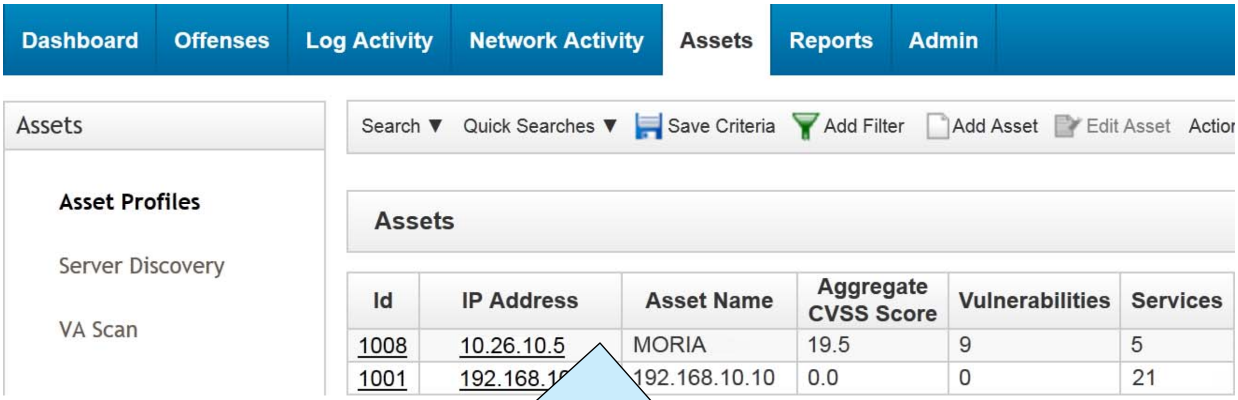
Top 5 Destination IPs

| Destination IP | Magnitude | Location |
|---|---|---|
| MORIA | | N‌et-10-172-192.Net_10_0_0_ |
| 10.26.1 | | et-10-172-192.Net_10_0_0_ |

*Navigating from an offense to an asset*

# Assets tab

- You can also click the **Assets** tab to locate asset profiles
- You can search, filter, and sort asset profiles in a similar way as events



| Id | IP Address | Asset Name | Aggregate CVSS Score | Vulnerabilities | Services |
|---|---|---|---|---|---|
| 1008 | 10.26.10.5 | MORIA | 19.5 | 9 | 5 |
| 1001 | 192.168.1 | 192.168.10.10 | 0.0 | 0 | 21 |

To investigate the asset profile of a target of the ICMP scanner offense, double-click the row

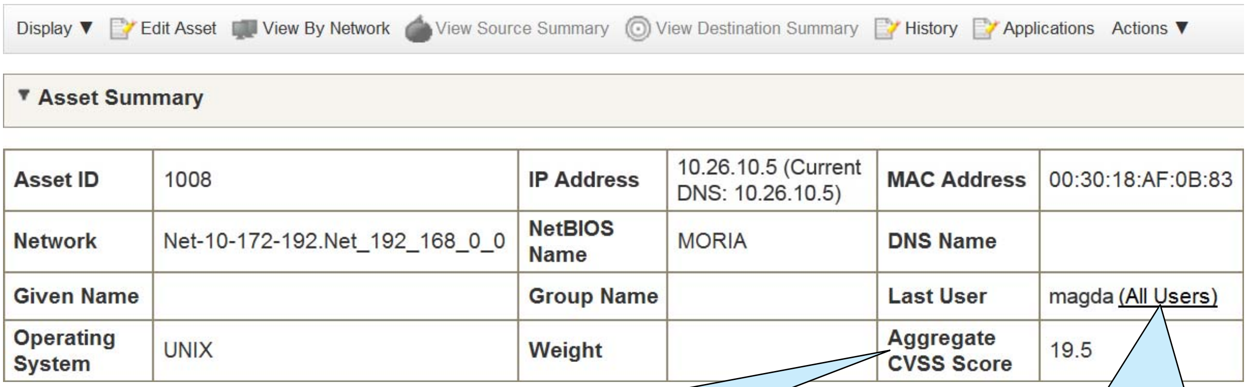
*Assets tab*

Use the **Assets** tab to work with the following aspects of the asset management system within QRadar SIEM:

- **Asset Profiles**: If a system has two IP addresses on two different networks and a QRadar SIEM user is granted permission to view only one of the networks, the user will not see the system's asset profile at all.
- **Server Discovery**: QRadar SIEM administrators can discover different server types, such as mail, web, and Windows servers. QRadar SIEM classifies a server of a specific type if one or more open ports match the standard port for that server type. QRadar SIEM does not probe open server ports but uses the passively gathered network flows to determine open ports. Refer to the *QRadar SIEM Administration Guide* (http://ibm.co/1wvpSEE) for more information about Server Discovery.
- **VA Scan**: QRadar SIEM administrators can schedule active scans for vulnerability assessments (VA) of systems on the network. Refer to the *QRadar SIEM Vulnerability Assessment Configuration Guide* (http://ibm.co/1wvpSEE) for more information about VA Scan.

# Asset summary

## Double-click an asset to open the asset details



| | | | | | |
|---|---|---|---|---|---|
| **Asset ID** | 1008 | **IP Address** | 10.26.10.5 (Current DNS: 10.26.10.5) | **MAC Address** | 00:30:18:AF:0B:83 |
| **Network** | Net-10-172-192.Net_192_168_0_0 | **NetBIOS Name** | MORIA | **DNS Name** | |
| **Given Name** | | **Group Name** | | **Last User** | magda (All Users) |
| **Operating System** | UNIX | **Weight** | | **Aggregate CVSS Score** | 19.5 |

**Aggregate CVSS Score:** Level of concern about this asset in comparison to others

**All Users:** Display previous users of the asset

*Asset summary*

An asset can have many MAC addresses, IP addresses, DNS names, and NetBIOS names.

Either of the following statements can be true about a MAC Address:

- It is manually entered by a QRadar administrator.
- It is populated by an active scanner.

QFlow and other accounting technologies do not capture the MAC address.

The asset **Weight** measures the importance of the asset. The levels range from 0 (not important) to 10 (very important).

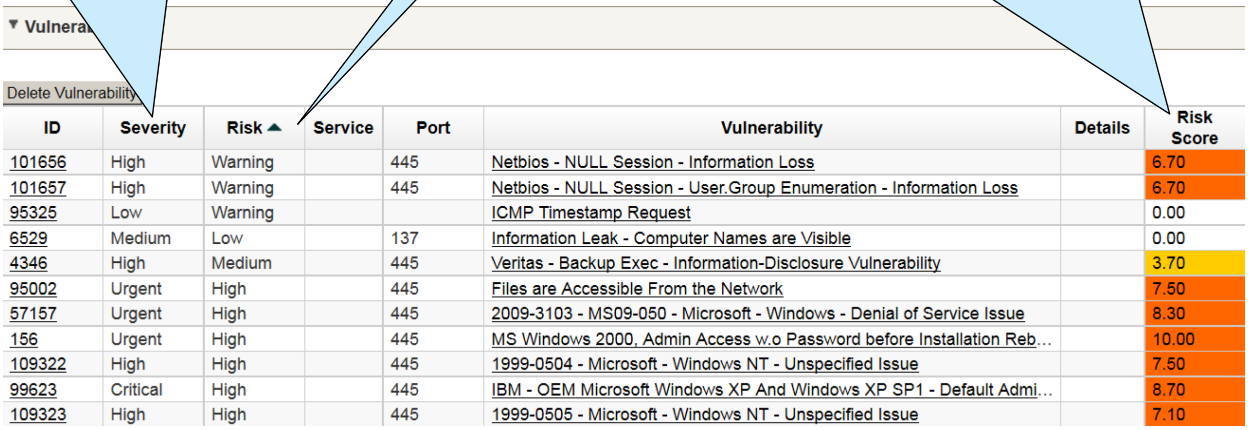
# Vulnerabilities

Verify the vulnerabilities of the asset to determine whether the investigated offense is a concern

**Severity:**
Payment Card Industry (PCI) severity level

**Risk:**
Threat level

**Risk Score:**
Level of concern about this vulnerability in comparison to others



| ID | Severity | Risk ▲ | Service | Port | Vulnerability | Details | Risk Score |
|---|---|---|---|---|---|---|---|
| 101656 | High | Warning | | 445 | Netbios - NULL Session - Information Loss | | 6.70 |
| 101657 | High | Warning | | 445 | Netbios - NULL Session - User.Group Enumeration - Information Loss | | 6.70 |
| 95325 | Low | Warning | | | ICMP Timestamp Request | | 0.00 |
| 6529 | Medium | Low | | 137 | Information Leak - Computer Names are Visible | | 0.00 |
| 4346 | High | Medium | | 445 | Veritas - Backup Exec - Information-Disclosure Vulnerability | | 3.70 |
| 95002 | Urgent | High | | 445 | Files are Accessible From the Network | | 7.50 |
| 57157 | Urgent | High | | 445 | 2009-3103 - MS09-050 - Microsoft - Windows - Denial of Service Issue | | 8.30 |
| 156 | Urgent | High | | 445 | MS Windows 2000, Admin Access w.o Password before Installation Reb... | | 10.00 |
| 109322 | High | High | | 445 | 1999-0504 - Microsoft - Windows NT - Unspecified Issue | | 7.50 |
| 99623 | Critical | High | | 445 | IBM - OEM Microsoft Windows XP And Windows XP SP1 - Default Admi... | | 8.70 |
| 109323 | High | High | | 445 | 1999-0505 - Microsoft - Windows NT - Unspecified Issue | | 7.10 |

*Vulnerabilities*

Following are the Severity levels:

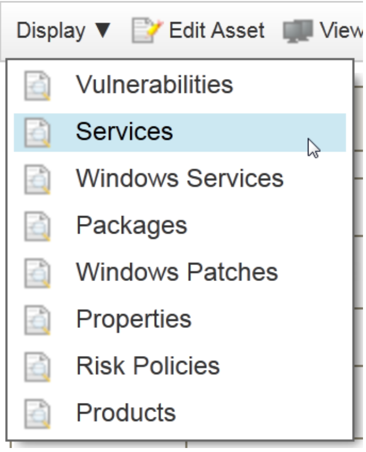
- Low
- Medium
- High
- Critical
- Urgent

**Hint:** Refer to the PCI Security Standards Council (https://www.pcisecuritystandards.org) for more information about PCI severity levels.

Following are the Risk levels:

- Warning
- Low
- Medium
- High

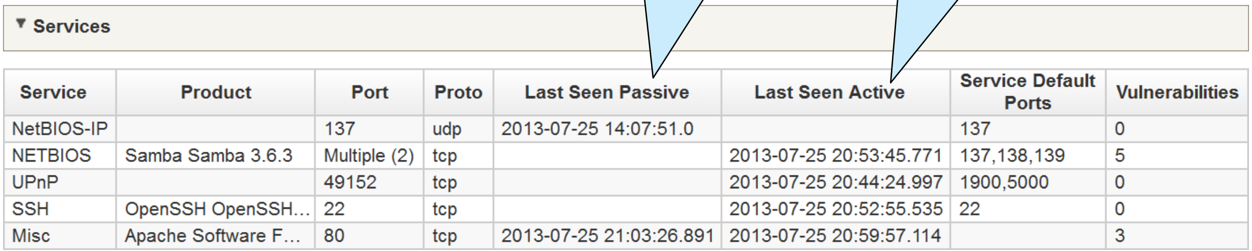
# Services



- By default, the asset details display the vulnerabilities of the asset
- In the **Display** menu, click **Services** to investigate the known services of the asset

**Last Seen Passive:** Services detected in passively gathered network flows

**Last Seen Active:** Services detected actively by scanners



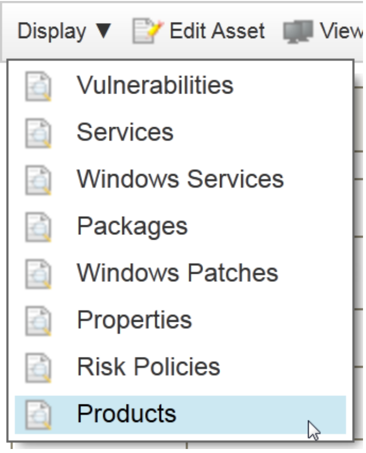
▼ Services

| Service | Product | Port | Proto | Last Seen Passive | Last Seen Active | Service Default Ports | Vulnerabilities |
|---|---|---|---|---|---|---|---|
| NetBIOS-IP | | 137 | udp | 2013-07-25 14:07:51.0 | | 137 | 0 |
| NETBIOS | Samba Samba 3.6.3 | Multiple (2) | tcp | | 2013-07-25 20:53:45.771 | 137,138,139 | 5 |
| UPnP | | 49152 | tcp | | 2013-07-25 20:44:24.997 | 1900,5000 | 0 |
| SSH | OpenSSH OpenSSH… | 22 | tcp | | 2013-07-25 20:52:55.535 | 22 | 0 |
| Misc | Apache Software F… | 80 | tcp | 2013-07-25 21:03:26.891 | 2013-07-25 20:59:57.114 | | 3 |

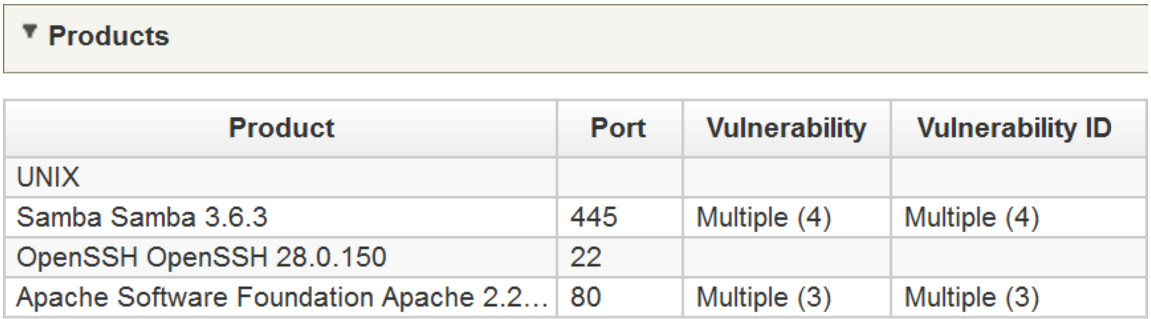
*Services*

**Note:** The vulnerabilities count is always 0 for open ports with unknown services.

## Products

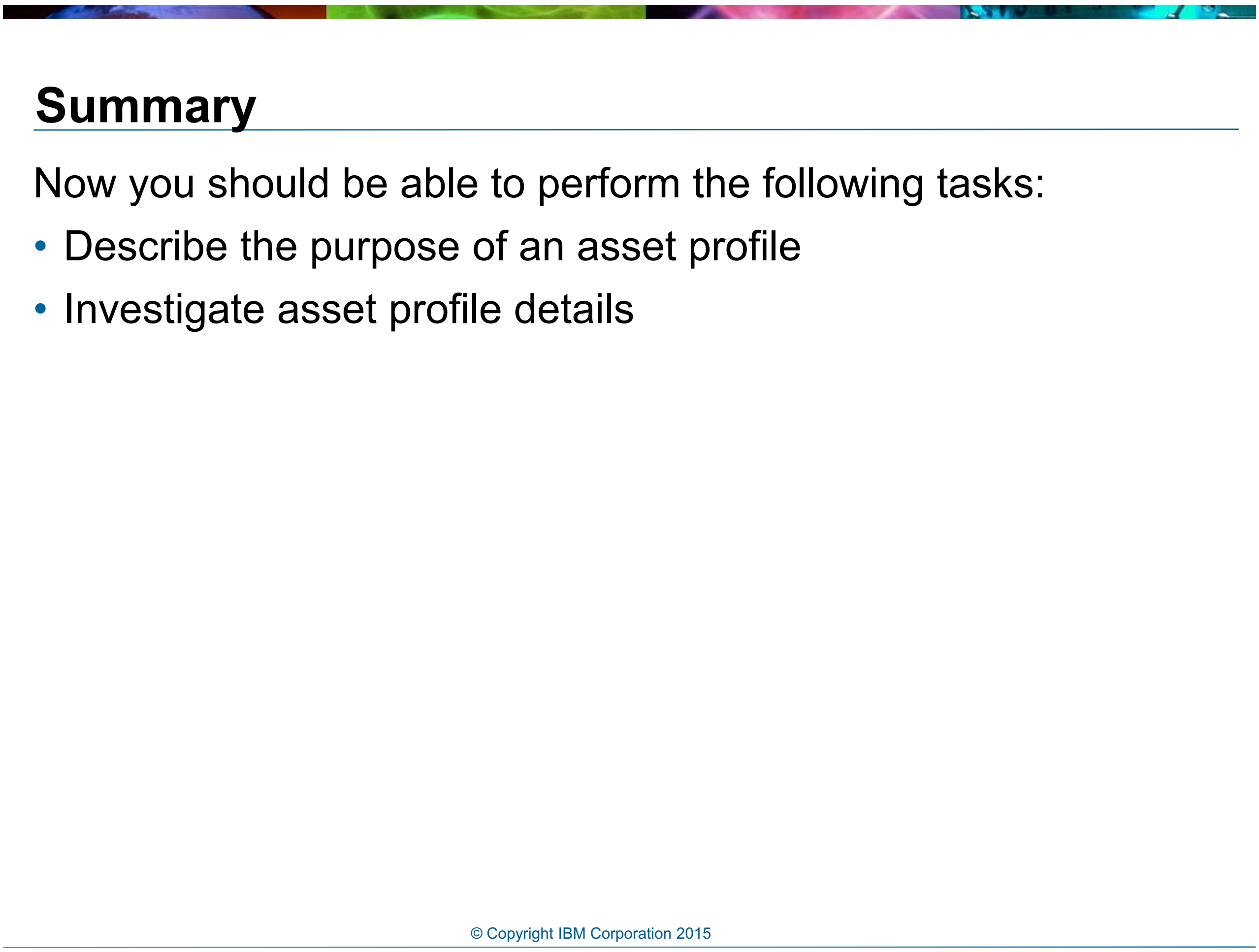


- Investigate the vulnerabilities of the asset grouped by product
- All other **Display** menu items provide information only if you license and run QRadar Vulnerability Manager



| Product | Port | Vulnerability | Vulnerability ID |
|---|---|---|---|
| UNIX | | | |
| Samba Samba 3.6.3 | 445 | Multiple (4) | Multiple (4) |
| OpenSSH OpenSSH 28.0.150 | 22 | | |
| Apache Software Foundation Apache 2.2… | 80 | Multiple (3) | Multiple (3) |

*Products*



## Summary

Now you should be able to perform the following tasks:

- Describe the purpose of an asset profile
- Investigate asset profile details

*Summary*

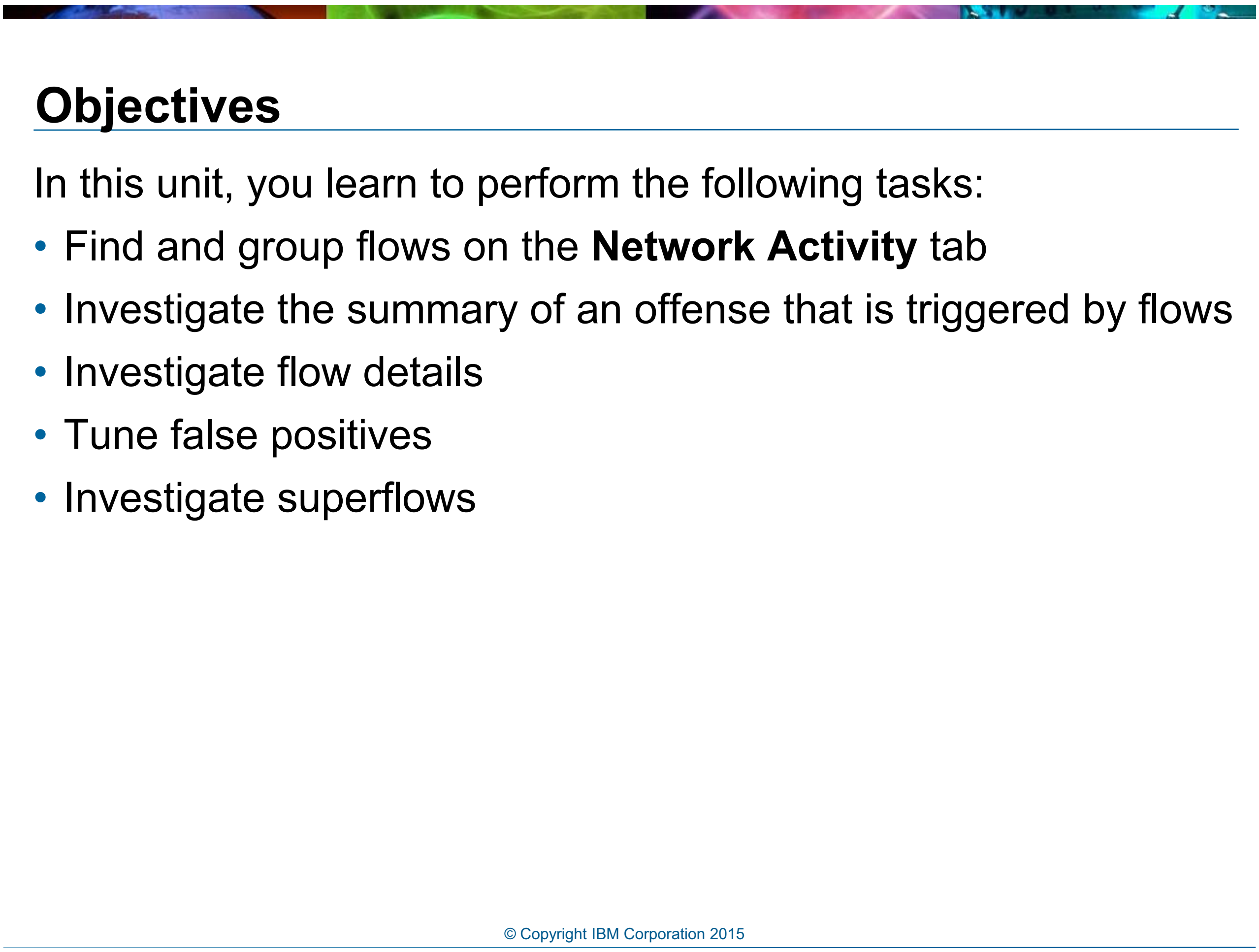
# 7 Investigating an offense that is triggered by flows

## Investigating an offense that is triggered by flows

QRadar SIEM correlates flows into an offense if it determines suspicious activities in network communications. This unit teaches you how to investigate the flows that contribute to an offense. You also learn how to create and tune false positives and investigate superflows.

References:

- *QRadar SIEM Administration Guide* http://ibm.co/1wvpSEE
- *QRadar SIEM Application Configuration Guide* http://ibm.co/1wvpSEE



## Objectives

In this unit, you learn to perform the following tasks:

- Find and group flows on the **Network Activity** tab
- Investigate the summary of an offense that is triggered by flows
- Investigate flow details
- Tune false positives
- Investigate superflows

*Objectives*

# Lesson 1  Viewing and grouping flows

Lesson:  Viewing and grouping flows

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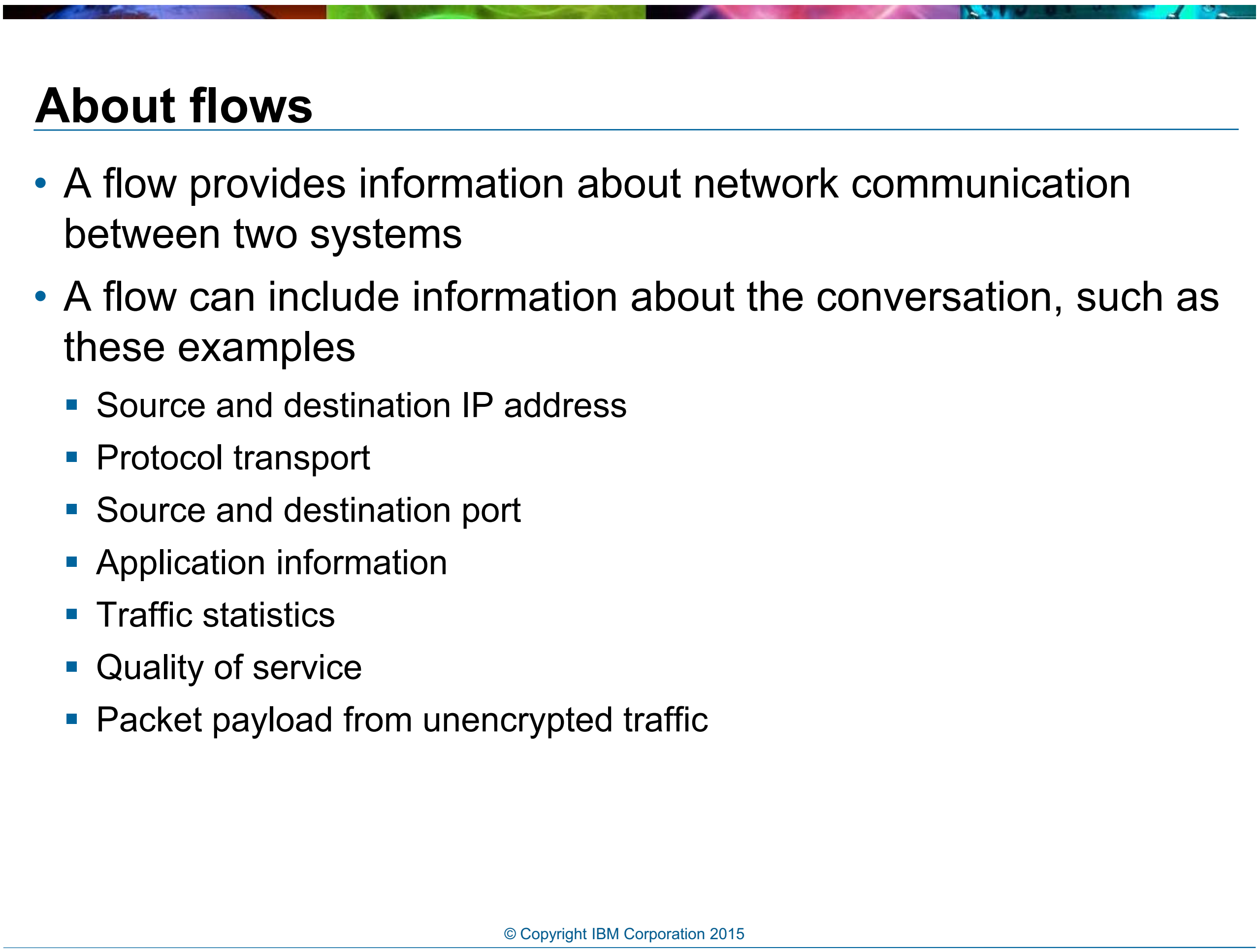
A flow provides information about a network conversation between two systems. In this lesson, you learn how to use the **Network Activity** tab to view and group flows.

Reference: *QRadar SIEM Application Configuration Guide* http://ibm.co/1wvpSEE



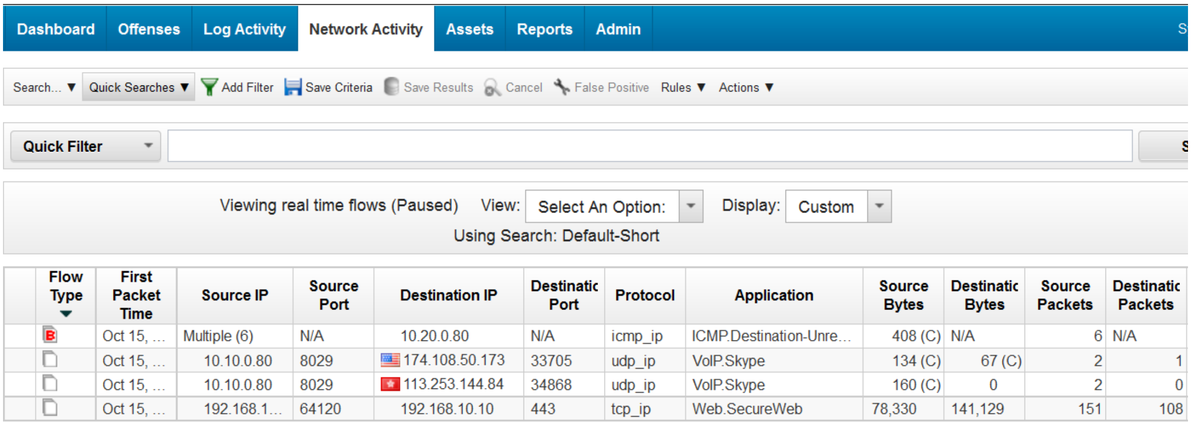
## About flows

- A flow provides information about network communication between two systems
- A flow can include information about the conversation, such as these examples
  - Source and destination IP address
  - Protocol transport
  - Source and destination port
  - Application information
  - Traffic statistics
  - Quality of service
  - Packet payload from unencrypted traffic

*About flows*

# Network Activity tab

- Click the **Network Activity** tab to perform these tasks
  - Investigate flows sent to QRadar SIEM
  - Perform detailed searches
  - View network activity
- Flows on the **Network Activity** tab are shown in a similar way as events are on the **Log Activity** tab



Viewing real time flows (Paused) View: Select An Option: Display: Custom

Using Search: Default-Short

| | Flow Type | First Packet Time | Source IP | Source Port | Destination IP | Destinatic Port | Protocol | Application | Source Bytes | Destinatic Bytes | Source Packets | Destinatic Packets |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | B | Oct 15, ... | Multiple (6) | N/A | 10.20.0.80 | N/A | icmp_ip | ICMP.Destination-Unre... | 408 (C) | N/A | 6 | N/A |
| | □ | Oct 15, ... | 10.10.0.80 | 8029 | 174.108.50.173 | 33705 | udp_ip | VoIP.Skype | 134 (C) | 67 (C) | 2 | 1 |
| | □ | Oct 15, ... | 10.10.0.80 | 8029 | 113.253.144.84 | 34868 | udp_ip | VoIP.Skype | 160 (C) | 0 | 2 | 0 |
| | □ | Oct 15, ... | 192.168.1... | 64120 | 192.168.10.10 | 443 | tcp_ip | Web.SecureWeb | 78,330 | 141,129 | 151 | 108 |

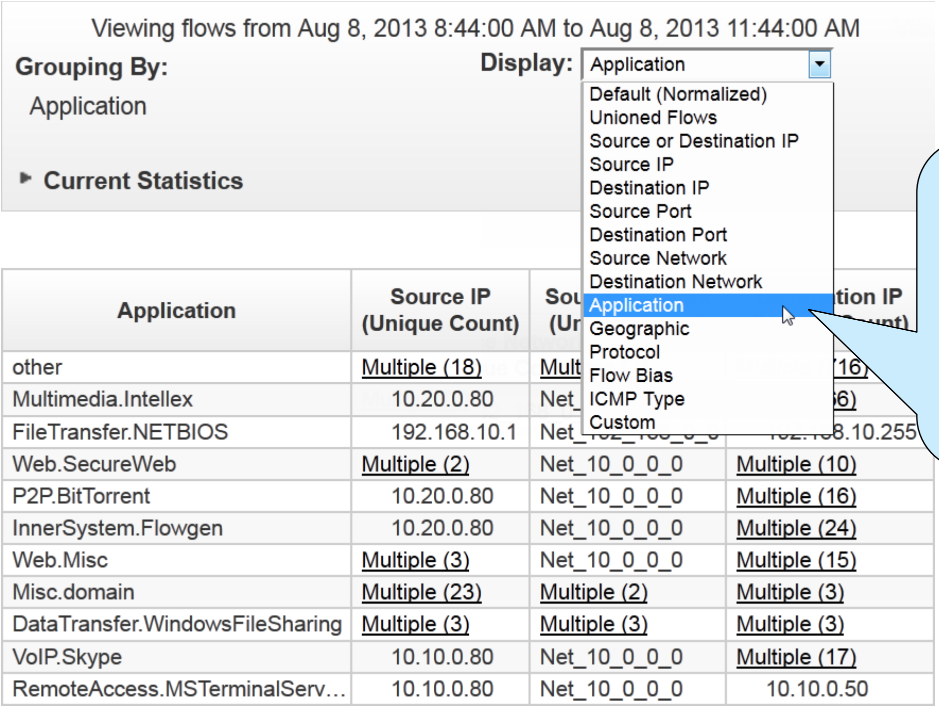
*Network Activity tab*

The following information pertains to the Source Bytes and Destination Bytes columns:

- The **(C)** behind the number of bytes indicates that the flow contains captured layer 7 payload.
- The number of captured bytes is not displayed. By default, QRadar SIEM captures 64 bytes in each direction.
- The number of bytes in the Source Bytes and Destination Bytes columns indicates how many bytes the source and destination sent.

# Grouping flows

Some flow grouping options differ from event grouping options.



Viewing flows from Aug 8, 2013 8:44:00 AM to Aug 8, 2013 11:44:00 AM

Grouping By: Application

Display: Application

| Application | Source IP (Unique Count) | Sou (Ur | tion IP |
|---|---|---|---|
| other | Multiple (18) | Mult | 16) |
| Multimedia.Intellex | 10.20.0.80 | Net_ | 6) |
| FileTransfer.NETBIOS | 192.168.10.1 | Net_ | .8.10.255 |
| Web.SecureWeb | Multiple (2) | Net_10_0_0_0 | Multiple (10) |
| P2P.BitTorrent | 10.20.0.80 | Net_10_0_0_0 | Multiple (16) |
| InnerSystem.Flowgen | 10.20.0.80 | Net_10_0_0_0 | Multiple (24) |
| Web.Misc | Multiple (3) | Net_10_0_0_0 | Multiple (15) |
| Misc.domain | Multiple (23) | Multiple (2) | Multiple (3) |
| DataTransfer.WindowsFileSharing | Multiple (3) | Multiple (3) | Multiple (3) |
| VoIP.Skype | 10.10.0.80 | Net_10_0_0_0 | Multiple (17) |
| RemoteAccess.MSTerminalServ… | 10.10.0.80 | Net_10_0_0_0 | 10.10.0.50 |

**Display:** Group by Application for an overview of the application data transported in the flows

*Grouping flows*

The following information describes some of the **Display** options available for flow grouping:

- **Display > Default (Normalized)**: To remove a grouping, select **Default (Normalized)**.
- **Display > Unioned Flows**: QRadar SIEM works in 1-minute cycles. When the minute is over, the event processors send the events and flows they processed to the console (only if they are needed on the console). Therefore, QRadar SIEM cuts off flows even if the real network flows have not actually terminated. QRadar SIEM creates a new flow record during the next 1-minute cycle for such a flow. To merge these flow-slices into one flow representing the real network flow, group by **Unioned Flows***.* Otherwise, one real network flow can be represented by more than one flow in QRadar SIEM.
- **Display > Application**: QRadar SIEM detects the kind of application data transported in flows.

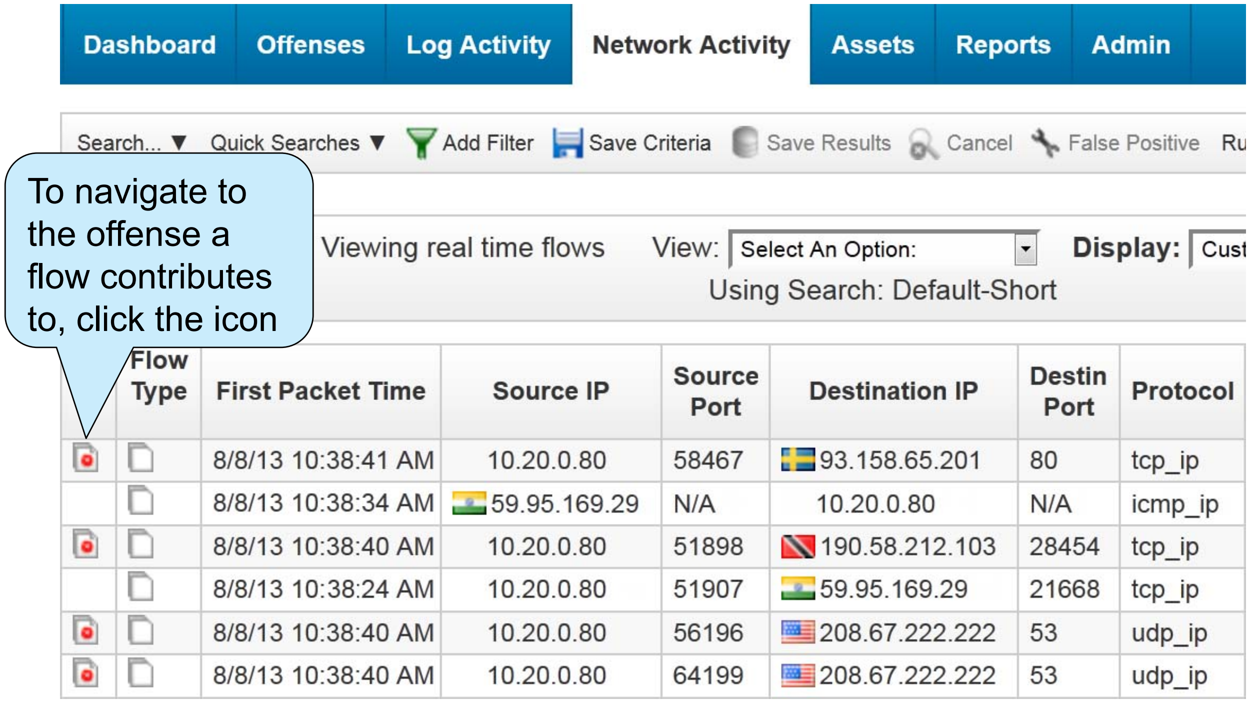
  QFlow detects applications by performing traffic analysis on network packets. If you do not use QFlow, QRadar SIEM determines the type of application from the destination port.

  Refer to the *QRadar SIEM Application Configuration Guide* (http://ibm.co/1wvpSEE) for further information.

- **Display > Geographic**: To summarize flows by the geographic country/region of their destination IP addresses, group by **Geographic**.
- **Display > Flow Bias**: To summarize flows by the flow direction, group by **Flow Bias**.

# Finding an offense

## A red icon indicates that a flow contributes to an offense



Viewing real time flows

View: Select An Option:

Display: Cust

Using Search: Default-Short

| | Flow Type | First Packet Time | Source IP | Source Port | Destination IP | Destin Port | Protocol |
|---|---|---|---|---|---|---|---|
| ● | □ | 8/8/13 10:38:41 AM | 10.20.0.80 | 58467 | 93.158.65.201 | 80 | tcp_ip |
| | □ | 8/8/13 10:38:34 AM | 59.95.169.29 | N/A | 10.20.0.80 | N/A | icmp_ip |
| ● | □ | 8/8/13 10:38:40 AM | 10.20.0.80 | 51898 | 190.58.212.103 | 28454 | tcp_ip |
| | □ | 8/8/13 10:38:24 AM | 10.20.0.80 | 51907 | 59.95.169.29 | 21668 | tcp_ip |
| ● | □ | 8/8/13 10:38:40 AM | 10.20.0.80 | 56196 | 208.67.222.222 | 53 | udp_ip |
| ● | □ | 8/8/13 10:38:40 AM | 10.20.0.80 | 64199 | 208.67.222.222 | 53 | udp_ip |

To navigate to the offense a flow contributes to, click the icon

*Finding an offense*

In addition to the **Dashboard** and **Offenses** tabs, you find offenses on the **Network Activity** and **Log Activity** tabs.

# Lesson 2  Using summary information to investigate an offense

Lesson:  Using summary information to investigate an offense

An offense bundles information about a suspicious activity, including flows. In this lesson, you learn how to use offense summary information related to flows to begin your offense investigation.

References:

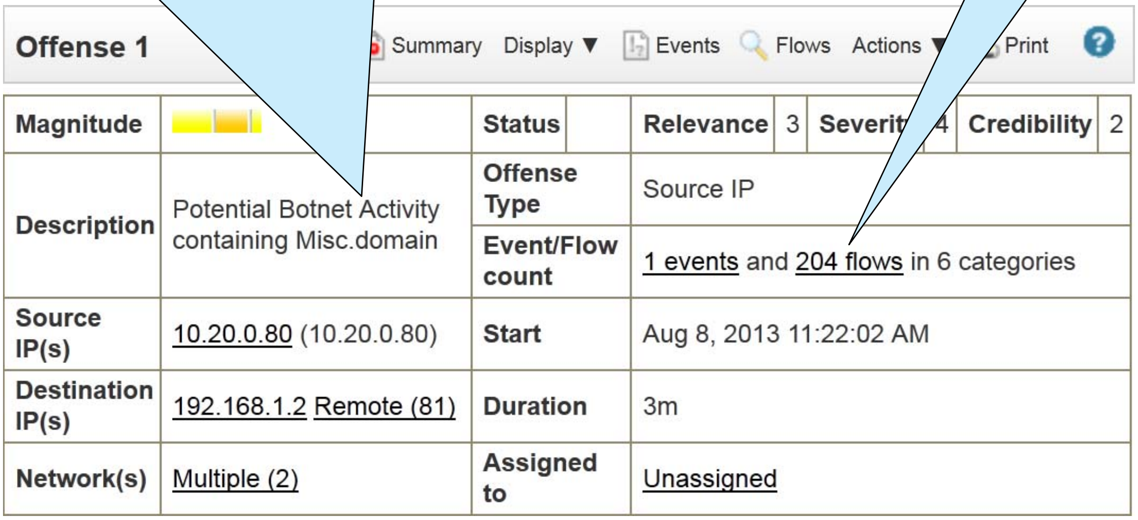
- *QRadar SIEM Administration Guide* http://ibm.co/1wvpSEE
- *QRadar SIEM Application Configuration Guide* http://ibm.co/1wvpSEE

## Offense parameters

The parameter at the top of the offense summary provides the first clues to investigate the offense

**Description:**
From suspicious DNS traffic, QRadar SIEM concluded botnet activity; rules compile the description

Flows contributed to this offense



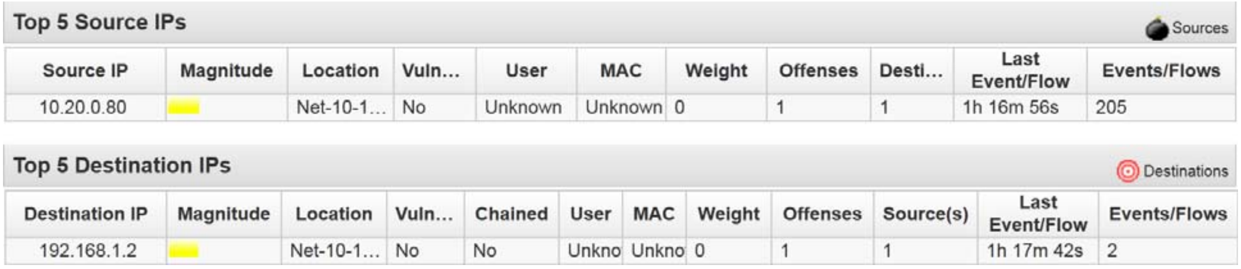
| Magnitude | ▬▬ | Status | | Relevance | 3 | Severit | 4 | Credibility | 2 |
|---|---|---|---|---|---|---|---|---|---|
| Description | Potential Botnet Activity containing Misc.domain | Offense Type | Source IP | | | | | | |
| | | Event/Flow count | 1 events and 204 flows in 6 categories | | | | | | |
| Source IP(s) | 10.20.0.80 (10.20.0.80) | Start | Aug 8, 2013 11:22:02 AM | | | | | | |
| Destination IP(s) | 192.168.1.2 Remote (81) | Duration | 3m | | | | | | |
| Network(s) | Multiple (2) | Assigned to | Unassigned | | | | | | |

*Offense parameters*

**Note: Description**: *Misc.domain* refers to domain name resolution traffic. Refer to the *QRadar SIEM Application Configuration Guide* (http://ibm.co/1wvpSEE) for further information.

# Top 5 Source and Destination IPs

- Source and destination IP addresses provide information about the origin of the offense and its local targets
- Remote source IP addresses are displayed, but remote destination IP addresses are not



Top 5 Source IPs

Sources

| Source IP | Magnitude | Location | Vuln... | User | MAC | Weight | Offenses | Desti... | Last Event/Flow | Events/Flows |
|---|---|---|---|---|---|---|---|---|---|---|
| 10.20.0.80 | 🟨 | Net-10-1... | No | Unknown | Unknown | 0 | 1 | 1 | 1h 16m 56s | 205 |

Top 5 Destination IPs

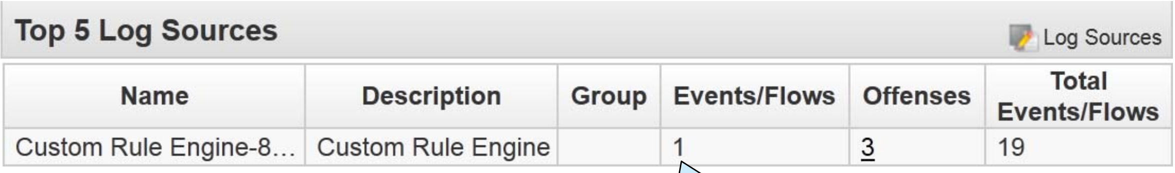
Destinations

| Destination IP | Magnitude | Location | Vuln... | Chained | User | MAC | Weight | Offenses | Source(s) | Last Event/Flow | Events/Flows |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 192.168.1.2 | 🟨 | Net-10-1... | No | No | Unkno | Unkno | 0 | 1 | 1 | 1h 17m 42s | 2 |

*Top 5 Source and Destination IPs*

Right-click anywhere in the row to view more information about the source IP address.

# Top 5 Log Sources



## Top 5 Log Sources

| Name | Description | Group | Events/Flows | Offenses | Total Events/Flows |
|---|---|---|---|---|---|
| Custom Rule Engine-8… | Custom Rule Engine |  | 1 | 3 | 19 |

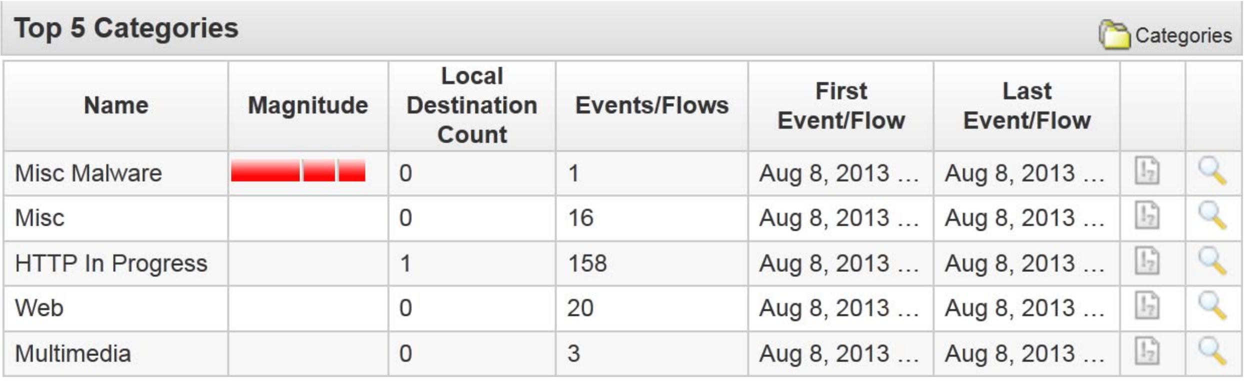
**Events/Flows:**
The Custom Rule Engine (CRE) created the only event that contributes to the offense

*Top 5 Log Sources*

In the example on the slide, no events created from log messages contribute to the offense.

# Top 5 Categories

QRadar SIEM sorted the event and the flows into categories



**Top 5 Categories**

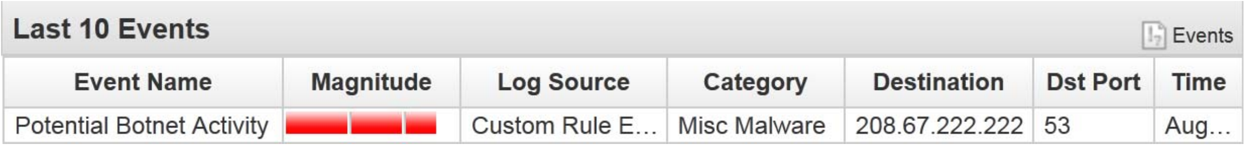
| Name | Magnitude | Local Destination Count | Events/Flows | First Event/Flow | Last Event/Flow | | |
|---|---|---|---|---|---|---|---|
| Misc Malware | 🟥🟥🟥 | 0 | 1 | Aug 8, 2013 ... | Aug 8, 2013 ... | 📄 | 🔍 |
| Misc | | 0 | 16 | Aug 8, 2013 ... | Aug 8, 2013 ... | 📄 | 🔍 |
| HTTP In Progress | | 1 | 158 | Aug 8, 2013 ... | Aug 8, 2013 ... | 📄 | 🔍 |
| Web | | 0 | 20 | Aug 8, 2013 ... | Aug 8, 2013 ... | 📄 | 🔍 |
| Multimedia | | 0 | 3 | Aug 8, 2013 ... | Aug 8, 2013 ... | 📄 | 🔍 |

*Top 5 Categories*

**Hint:** Refer to the *QRadar SIEM Administration Guide* (http://ibm.co/1wvpSEE) for a list of high-level categories (HLC) and low-level categories (LLC).

# Last 10 Events

The Custom Rule Engine (CRE) created an event with information about the suspected botnet activity



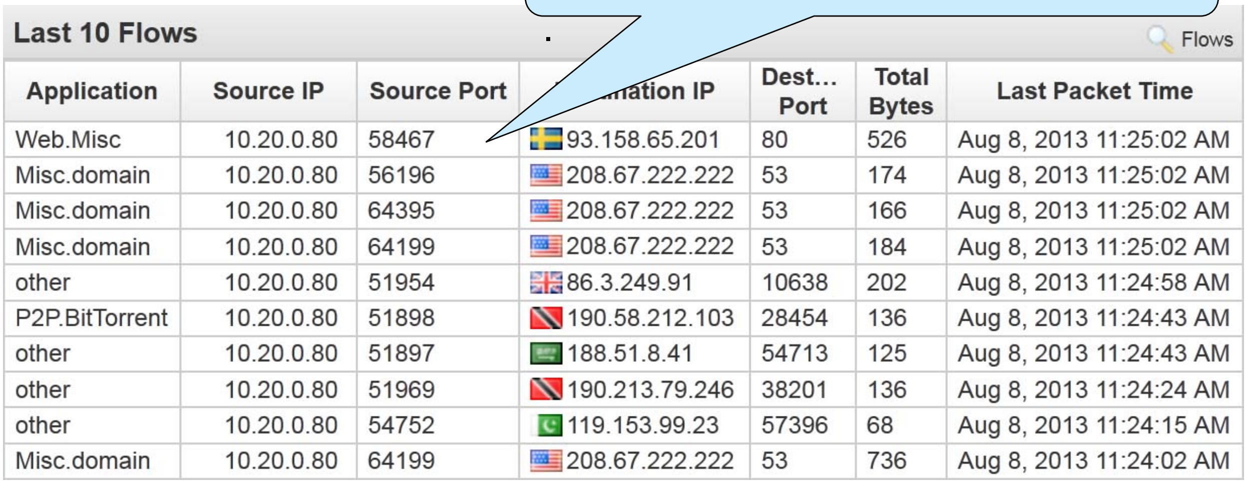
## Last 10 Events

| Event Name | Magnitude | Log Source | Category | Destination | Dst Port | Time |
|---|---|---|---|---|---|---|
| Potential Botnet Activity | 🟥🟥🟥 | Custom Rule E… | Misc Malware | 208.67.222.222 | 53 | Aug… |

*Last 10 Events*

# Last 10 Flows

This table provides information about what happened most recently



Double-click a row to open a window with details about the flow
.

**Last 10 Flows**

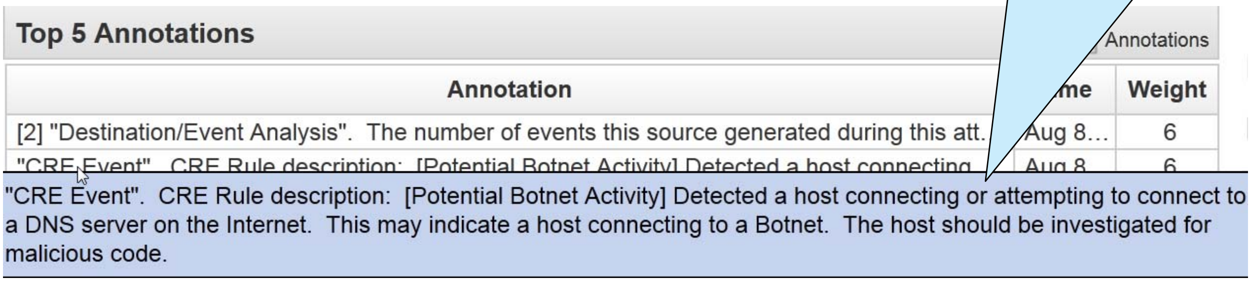
| Application | Source IP | Source Port | nation IP | Dest... Port | Total Bytes | Last Packet Time |
|---|---|---|---|---|---|---|
| Web.Misc | 10.20.0.80 | 58467 | 93.158.65.201 | 80 | 526 | Aug 8, 2013 11:25:02 AM |
| Misc.domain | 10.20.0.80 | 56196 | 208.67.222.222 | 53 | 174 | Aug 8, 2013 11:25:02 AM |
| Misc.domain | 10.20.0.80 | 64395 | 208.67.222.222 | 53 | 166 | Aug 8, 2013 11:25:02 AM |
| Misc.domain | 10.20.0.80 | 64199 | 208.67.222.222 | 53 | 184 | Aug 8, 2013 11:25:02 AM |
| other | 10.20.0.80 | 51954 | 86.3.249.91 | 10638 | 202 | Aug 8, 2013 11:24:58 AM |
| P2P.BitTorrent | 10.20.0.80 | 51898 | 190.58.212.103 | 28454 | 136 | Aug 8, 2013 11:24:43 AM |
| other | 10.20.0.80 | 51897 | 188.51.8.41 | 54713 | 125 | Aug 8, 2013 11:24:43 AM |
| other | 10.20.0.80 | 51969 | 190.213.79.246 | 38201 | 136 | Aug 8, 2013 11:24:24 AM |
| other | 10.20.0.80 | 54752 | 119.153.99.23 | 57396 | 68 | Aug 8, 2013 11:24:15 AM |
| Misc.domain | 10.20.0.80 | 64199 | 208.67.222.222 | 53 | 736 | Aug 8, 2013 11:24:02 AM |

*Last 10 Flows*

## Annotations

- Annotations provide insight into why QRadar SIEM considers the event or traffic threatening
- QRadar SIEM can add annotations when it adds events and flows to an offense
- Read the oldest annotation because it was added when the offense was created
- Hold the mouse over an annotation to show the entire text

In this example, you learn about connections to a remote DNS server, which indicates connections to a botnet.



Top 5 Annotations

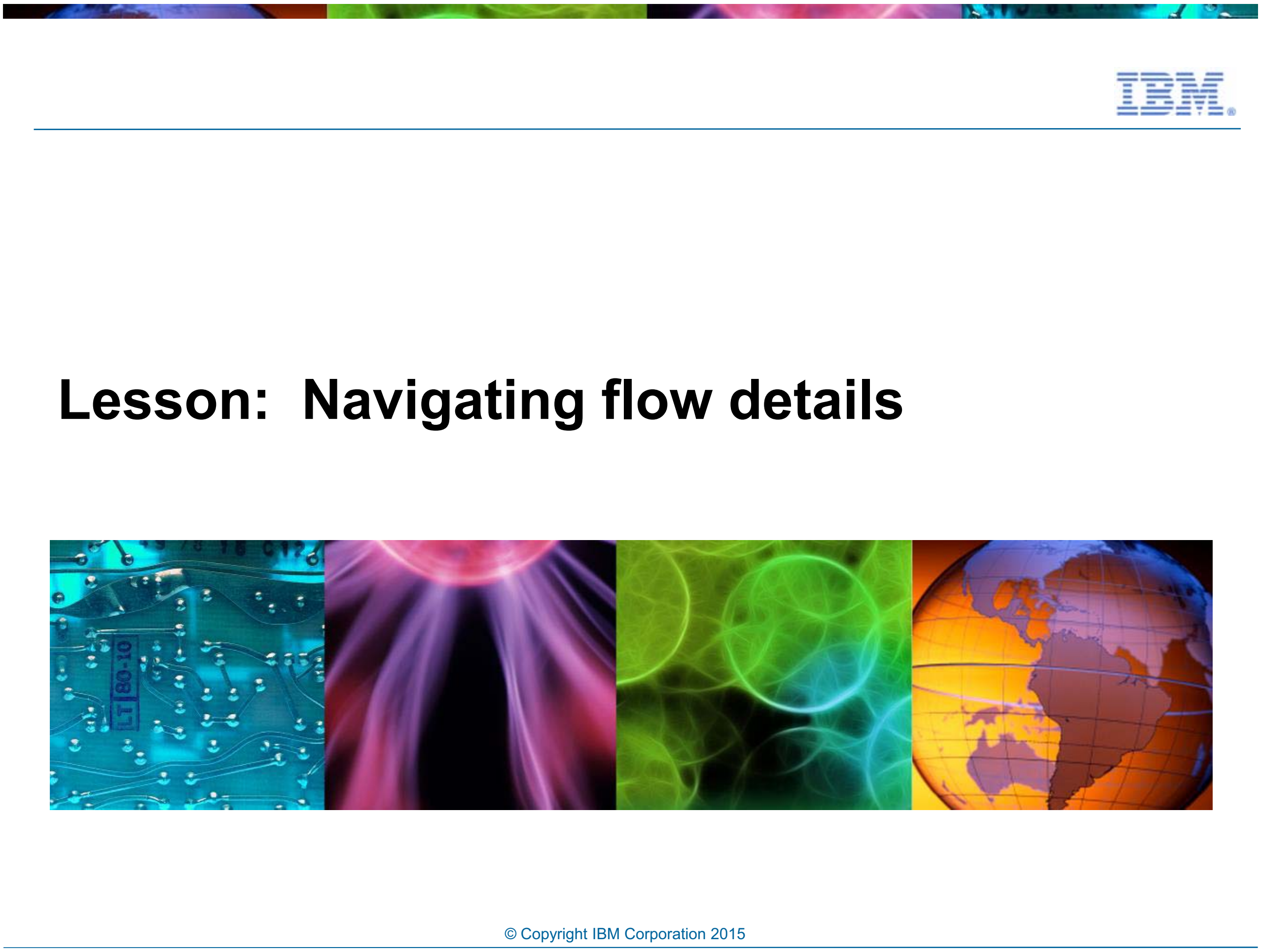
| Annotation | …me | Weight |
|---|---|---|
| [2] "Destination/Event Analysis". The number of events this source generated during this att… | Aug 8… | 6 |
| "CRE Event". CRE Rule description: [Potential Botnet Activity] Detected a host connecting | Aug 8 | 6 |

"CRE Event". CRE Rule description: [Potential Botnet Activity] Detected a host connecting or attempting to connect to a DNS server on the Internet. This may indicate a host connecting to a Botnet. The host should be investigated for malicious code.

*Annotations*

QRadar SIEM rules and building blocks add annotations when they create or update an offense. QRadar SIEM users cannot add, edit, or delete annotations.

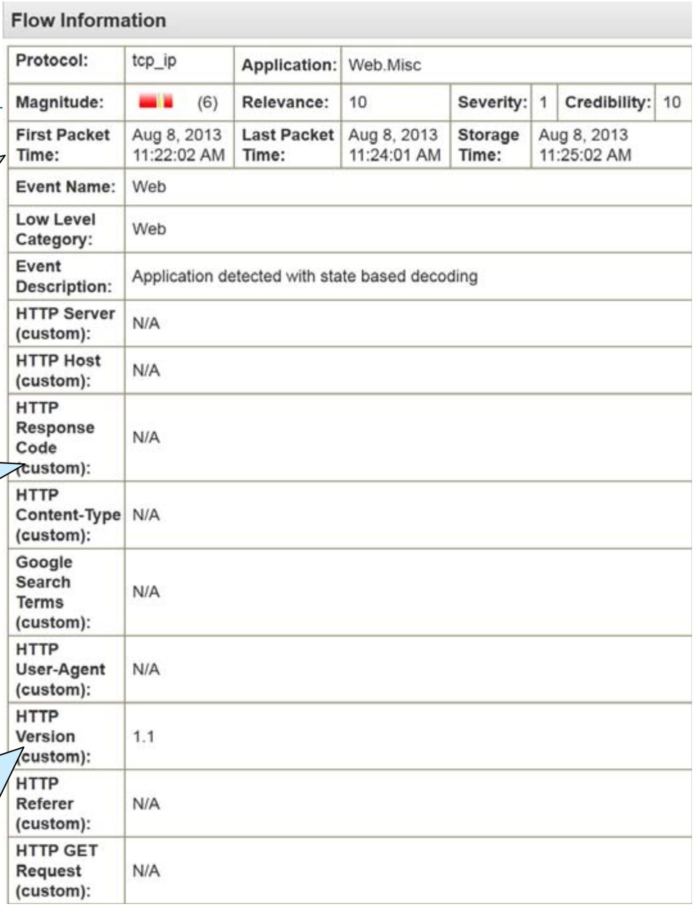
# Lesson 3  Navigating flow details



## Lesson:  Navigating flow details

A flow in QRadar SIEM provides much information about the network conversation it represents. In this lesson, you learn how to navigate the details of a flow, such as base, source, and destination information, and layer 7 payload.

# Base information



Flow Information

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Protocol: | tcp_ip | Application: | Web.Misc | | | | |
| Magnitude: | 🟥 (6) | Relevance: | 10 | Severity: | 1 | Credibility: | 10 |
| First Packet Time: | Aug 8, 2013 11:22:02 AM | Last Packet Time: | Aug 8, 2013 11:24:01 AM | Storage Time: | Aug 8, 2013 11:25:02 AM | | |
| Event Name: | Web | | | | | | |
| Low Level Category: | Web | | | | | | |
| Event Description: | Application detected with state based decoding | | | | | | |
| HTTP Server (custom): | N/A | | | | | | |
| HTTP Host (custom): | N/A | | | | | | |
| HTTP Response Code (custom): | N/A | | | | | | |
| HTTP Content-Type (custom): | N/A | | | | | | |
| Google Search Terms (custom): | N/A | | | | | | |
| HTTP User-Agent (custom): | N/A | | | | | | |
| HTTP Version (custom): | 1.1 | | | | | | |
| HTTP Referer (custom): | N/A | | | | | | |
| HTTP GET Request (custom): | N/A | | | | | | |

Flow base information is similar to event base information

QRadar SIEM tries to extract custom flow properties from the payload

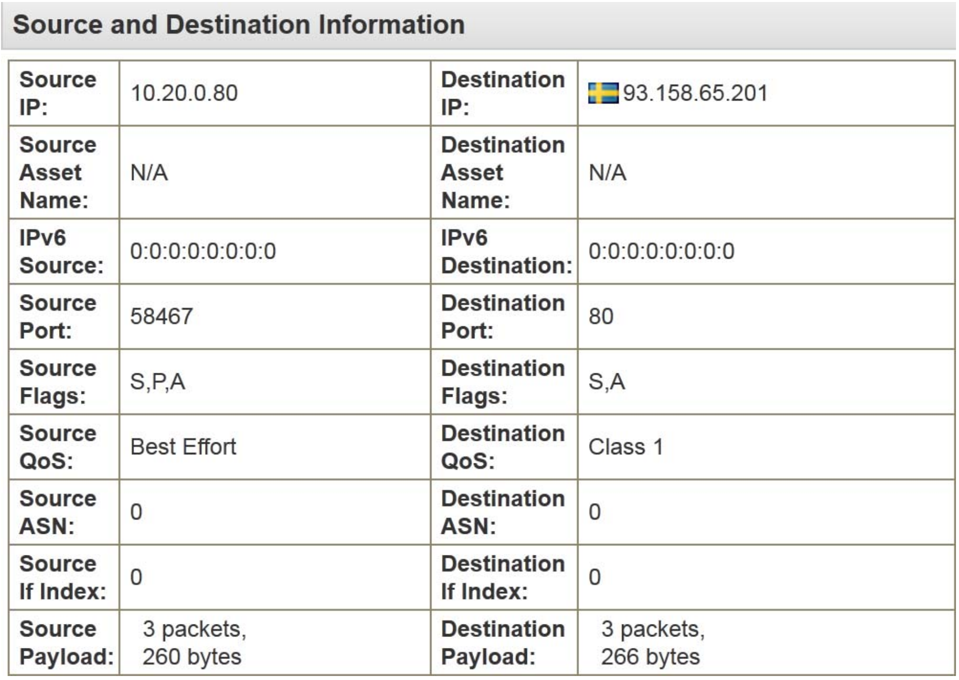
QRadar SIEM extracted only the HTTP version; QRadar SIEM administrators can increase the content capture length to provide more custom flow property data

*Base information*

In the example on the slide, the Event Description, **Application detected with state based decoding**, means that the state-based decoder QRadar SIEM uses determined the application of this flow.

# Source and destination information

QRadar SIEM provides network connection details about the flow



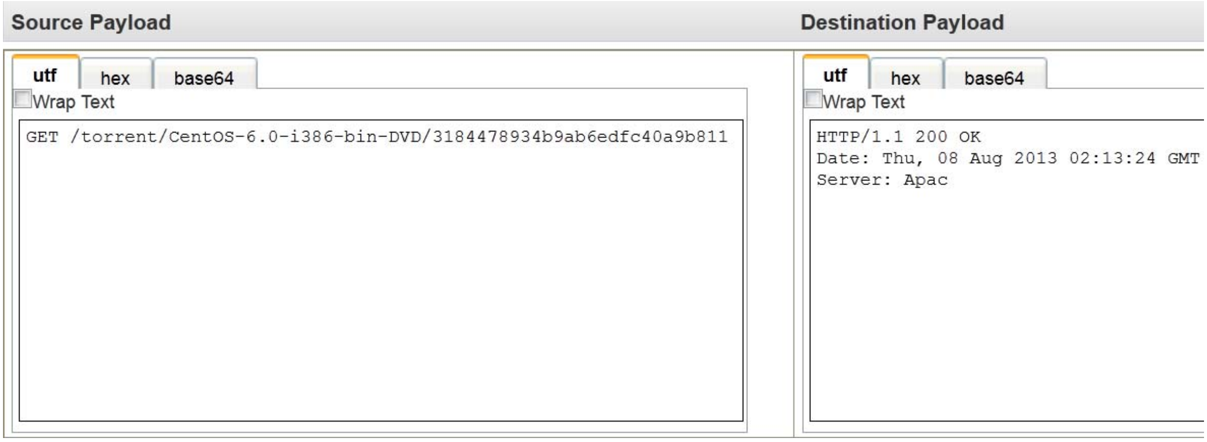
Source and Destination Information

| | | | |
|---|---|---|---|
| **Source IP:** | 10.20.0.80 | **Destination IP:** | 93.158.65.201 |
| **Source Asset Name:** | N/A | **Destination Asset Name:** | N/A |
| **IPv6 Source:** | 0:0:0:0:0:0:0:0 | **IPv6 Destination:** | 0:0:0:0:0:0:0:0 |
| **Source Port:** | 58467 | **Destination Port:** | 80 |
| **Source Flags:** | S,P,A | **Destination Flags:** | S,A |
| **Source QoS:** | Best Effort | **Destination QoS:** | Class 1 |
| **Source ASN:** | 0 | **Destination ASN:** | 0 |
| **Source If Index:** | 0 | **Destination If Index:** | 0 |
| **Source Payload:** | 3 packets,<br>260 bytes | **Destination Payload:** | 3 packets,<br>266 bytes |

*Source and destination information*

# Layer 7 payload

This example shows the layer 7 payloads for an HTTP GET request and response; both show only the first 64 bytes of payload by default



```
GET /torrent/CentOS-6.0-i386-bin-DVD/3184478934b9ab6edfc40a9b811
```

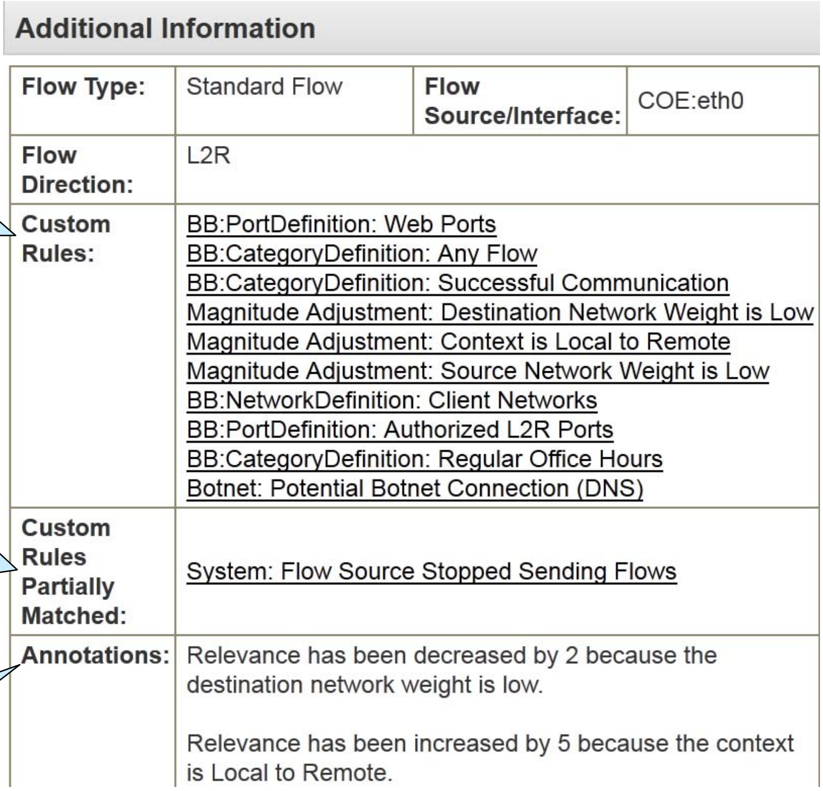
```
HTTP/1.1 200 OK
Date: Thu, 08 Aug 2013 02:13:24 GMT
Server: Apac
```

**Note:** QRadar SIEM administrators can increase the content capture length to provide more layer 7 payload

*Layer 7 payload*

A content capture length greater than 1024 bytes negatively impacts the performance of QRadar SIEM.

# Additional information



## Additional Information

| Flow Type: | Standard Flow | Flow Source/Interface: | COE:eth0 |
|---|---|---|---|
| Flow Direction: | L2R | | |
| Custom Rules: | BB:PortDefinition: Web Ports<br>BB:CategoryDefinition: Any Flow<br>BB:CategoryDefinition: Successful Communication<br>Magnitude Adjustment: Destination Network Weight is Low<br>Magnitude Adjustment: Context is Local to Remote<br>Magnitude Adjustment: Source Network Weight is Low<br>BB:NetworkDefinition: Client Networks<br>BB:PortDefinition: Authorized L2R Ports<br>BB:CategoryDefinition: Regular Office Hours<br>Botnet: Potential Botnet Connection (DNS) | | |
| Custom Rules Partially Matched: | System: Flow Source Stopped Sending Flows | | |
| Annotations: | Relevance has been decreased by 2 because the destination network weight is low.<br>Relevance has been increased by 5 because the context is Local to Remote. | | |

**Custom Rules:**
Rules fired for this flow

**Custom Rules Partially Matched:**
A threshold value of these rules was not met; otherwise, the rule matched

**Annotations:**
Added by rules

*Additional information*

The **Flow Direction** field can include the following values:

- **L2L**: Traffic from a local network to another local network
- **L2R**: Traffic from a local network to a remote network
- **R2L**: Traffic from a remote network to a local network
- **R2R**: Traffic from a remote network to another remote network

# Lesson 4 False positives overview

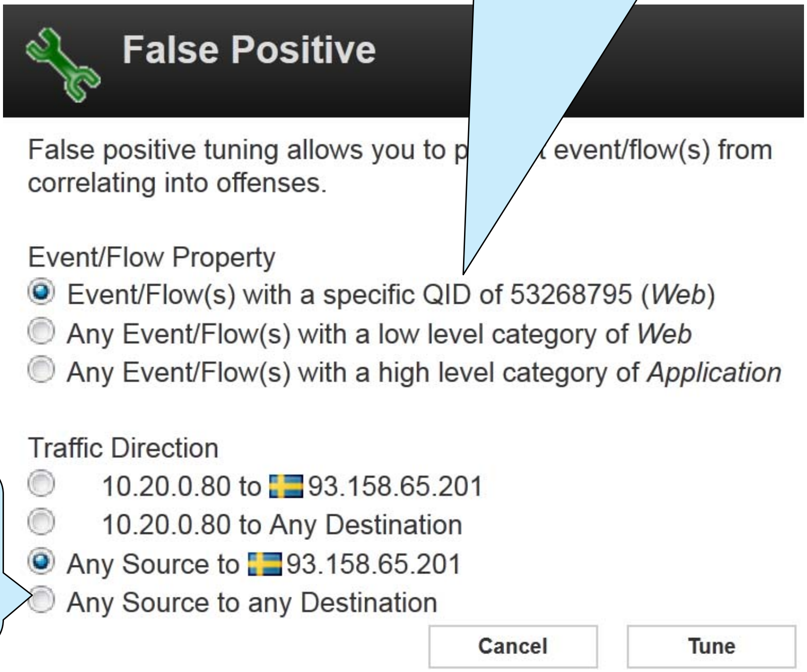
## Lesson: False positives overview

Each organization has legitimate network traffic that can trigger false positive flows and events. This traffic creates noise that makes it difficult to identify true security incidents. In this lesson, you learn how to tune a flow or event as false positive.

## Creating a false positive flow or event

- If an event or flow is legitimate, you can prevent it and similar events and flows from contributing to offenses
- In the top menu bar, click the **False Positive** icon

The QID uniquely identifies the kind of application data that the flow transports


**False Positive**

False positive tuning allows you to p t event/flow(s) from correlating into offenses.

Event/Flow Property

● Event/Flow(s) with a specific QID of 53268795 (*Web*)
○ Any Event/Flow(s) with a low level category of *Web*
○ Any Event/Flow(s) with a high level category of *Application*

Traffic Direction

○ 10.20.0.80 to 93.158.65.201
○ 10.20.0.80 to Any Destination
● Any Source to 93.158.65.201
○ Any Source to any Destination

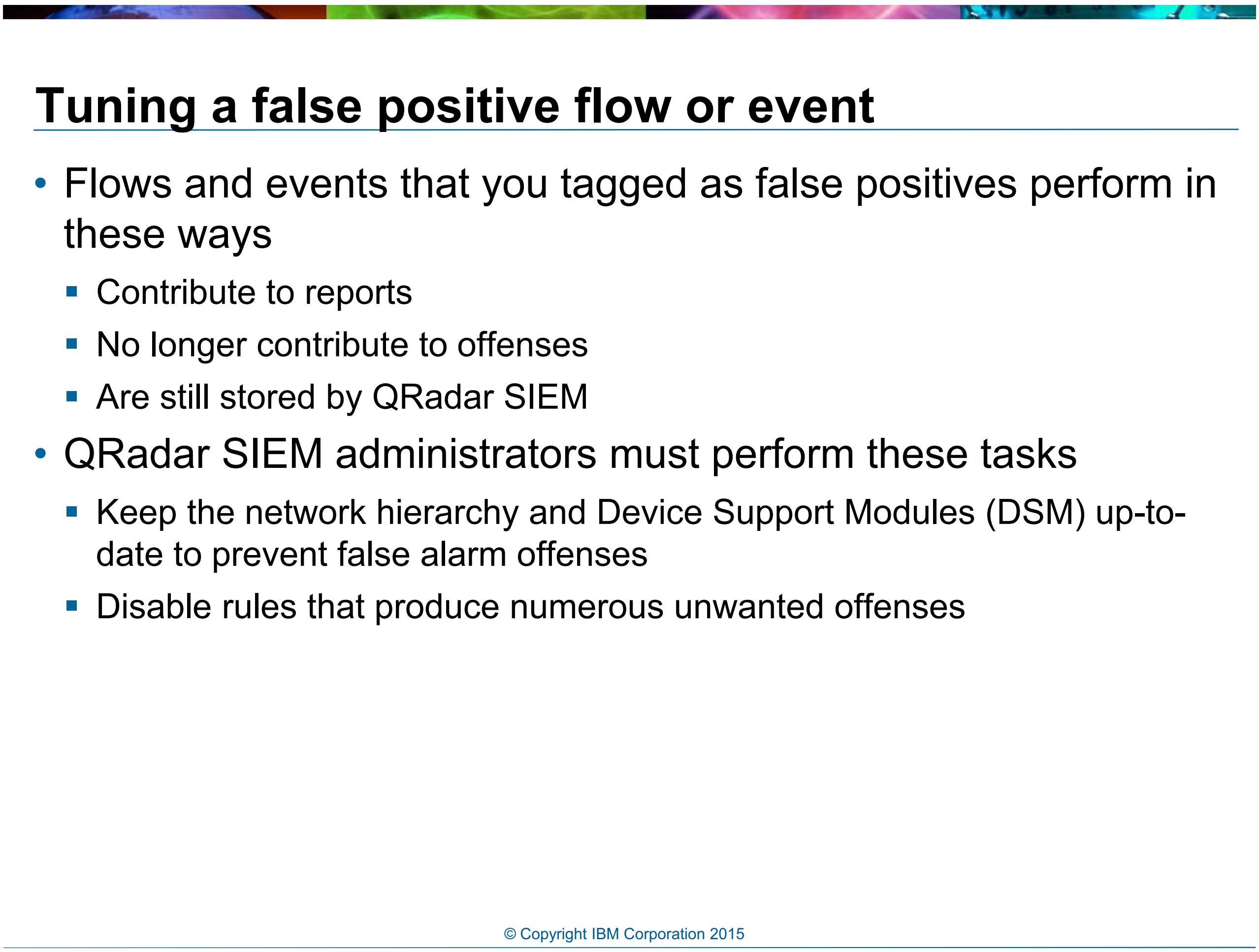
This option is rarely useful because it eliminates every occurrence of the above selection every time

*Creating a false positive flow or event*

The example on the slide removes any event and flow that includes the specified QID and targets the 93.158.65.201 IP address without regard for the origin.

For events, the QID uniquely identifies a specific action of a device. For example, firewall denies issued from different firewall models have different QIDs. For flows, the QID uniquely identifies which kind of application data is transported by the flow.

To edit a false positive, edit the **User-BB-FalsePositive: User Defined False Positives Tunings** building block. To locate this building block, navigate to **Rules** on the **Offenses** tab.



## Tuning a false positive flow or event

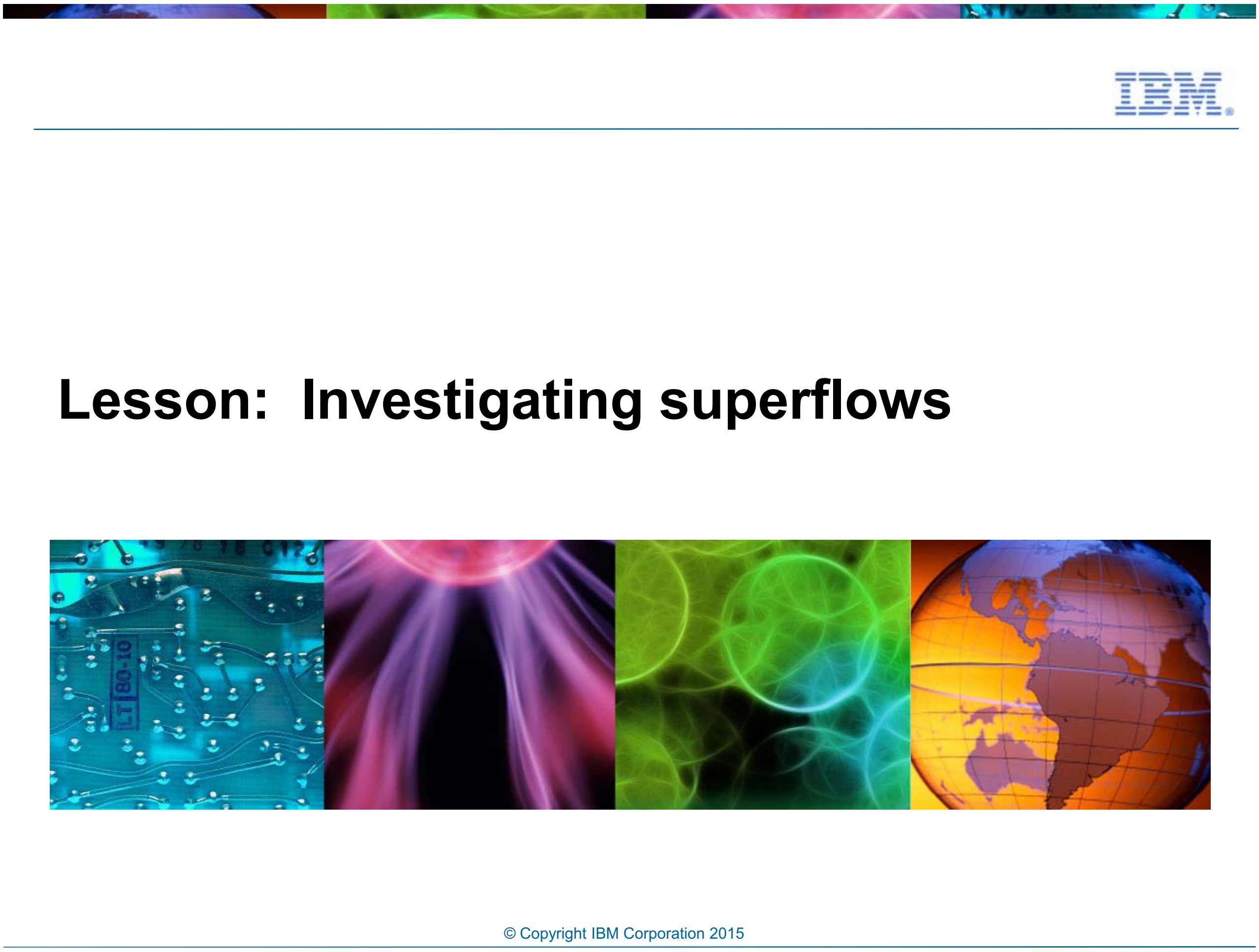
- Flows and events that you tagged as false positives perform in these ways
  - Contribute to reports
  - No longer contribute to offenses
  - Are still stored by QRadar SIEM
- QRadar SIEM administrators must perform these tasks
  - Keep the network hierarchy and Device Support Modules (DSM) up-to-date to prevent false alarm offenses
  - Disable rules that produce numerous unwanted offenses

*Tuning a false positive flow or event*

QRadar SIEM considers all networks in the network hierarchy local. You find the network hierarchy on the **Administration** tab.

By default, QRadar SIEM has many rules disabled. In a production environment, it can be necessary to enable some rules. In most deployments, a professional services consultant performs initial tuning for a new QRadar SIEM deployment.

# Lesson 5 Investigating superflows



## Lesson: Investigating superflows

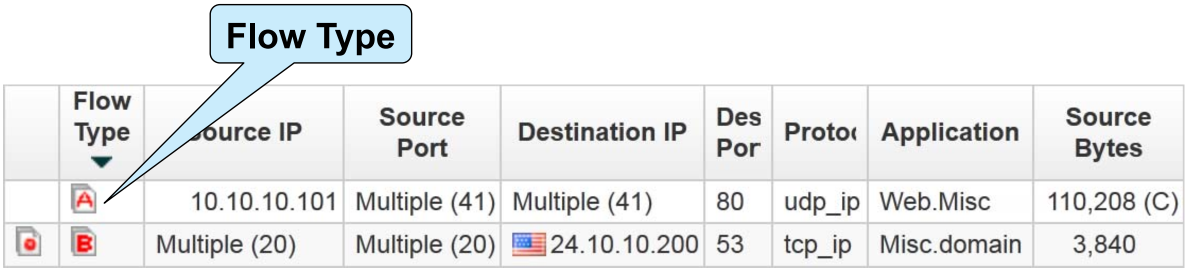
A superflow is a flow that is an aggregate of a number of flows that have a similar set of elements. In this lesson, you learn how to find the information stored in a superflow.

Reference: *QRadar SIEM Administration Guide* http://ibm.co/1wvpSEE

## About superflows

QRadar SIEM aggregates flows with common characteristics into superflows that indicate common attack types

- Type A: Network sweep
  **one source IP address > many destination IP addresses**
- Type B: Distributed denial of service (DDOS) attack
  **many source IP addresses > one destination IP address**
- Type C: Portscan
  **one source IP address > many ports on one destination IP address**



| | Flow Type | ource IP | Source Port | Destination IP | Des Por | Protoc | Application | Source Bytes |
|---|---|---|---|---|---|---|---|---|
| | A | 10.10.10.101 | Multiple (41) | Multiple (41) | 80 | udp_ip | Web.Misc | 110,208 (C) |
| | B | Multiple (20) | Multiple (20) | 24.10.10.200 | 53 | tcp_ip | Misc.domain | 3,840 |

*About superflows*

Following are some of the benefits of superflows:

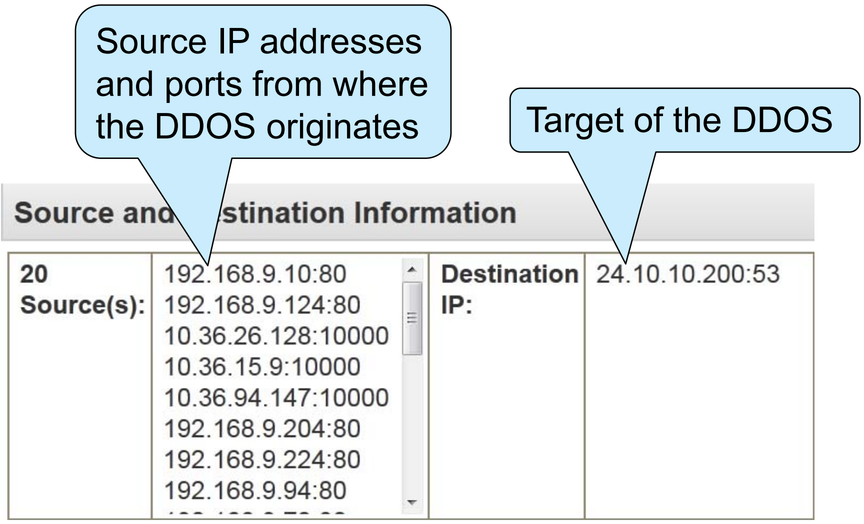
- Reduced traffic from QFlow collectors
- Store only a single flow to disk

QRadar SIEM administrators can enable or disable the creation of superflows in the QFlow configuration.

Refer to the *QRadar SIEM Administration Guide* (http://ibm.co/1wvpSEE) for the criteria flows must meet so that QRadar SIEM can aggregate them into superflows.

## Superflow source and destination information

- Navigate to the flow details to investigate a superflow further
- This example shows a Type B Superflow that indicates a DDOS



Source IP addresses and ports from where the DDOS originates

Target of the DDOS

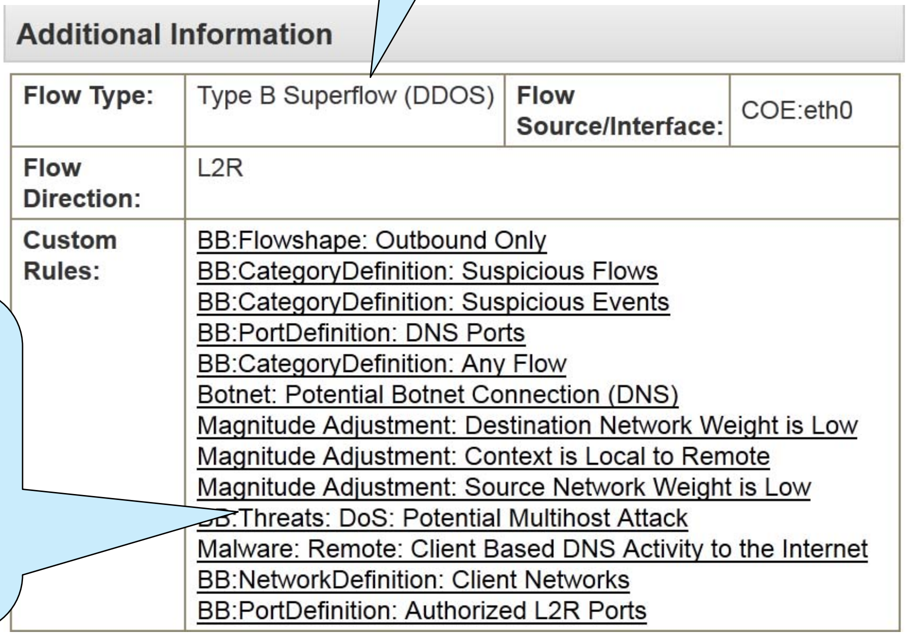
**Source and Destination Information**

| | | | |
|---|---|---|---|
| **20 Source(s):** | 192.168.9.10:80<br>192.168.9.124:80<br>10.36.26.128:10000<br>10.36.15.9:10000<br>10.36.94.147:10000<br>192.168.9.204:80<br>192.168.9.224:80<br>192.168.9.94:80 | **Destination IP:** | 24.10.10.200:53 |

*Superflow source and destination information*

# Superflow additional information

Flow Type



Additional Information

| | | | |
|---|---|---|---|
| **Flow Type:** | Type B Superflow (DDOS) | **Flow Source/Interface:** | COE:eth0 |
| **Flow Direction:** | L2R | | |
| **Custom Rules:** | BB:Flowshape: Outbound Only<br>BB:CategoryDefinition: Suspicious Flows<br>BB:CategoryDefinition: Suspicious Events<br>BB:PortDefinition: DNS Ports<br>BB:CategoryDefinition: Any Flow<br>Botnet: Potential Botnet Connection (DNS)<br>Magnitude Adjustment: Destination Network Weight is Low<br>Magnitude Adjustment: Context is Local to Remote<br>Magnitude Adjustment: Source Network Weight is Low<br>BB:Threats: DoS: Potential Multihost Attack<br>Malware: Remote: Client Based DNS Activity to the Internet<br>BB:NetworkDefinition: Client Networks<br>BB:PortDefinition: Authorized L2R Ports | | |

**Flow Type:**
The rules engine detected a denial of service (DoS), but QFlow collectors already aggregated the superflow

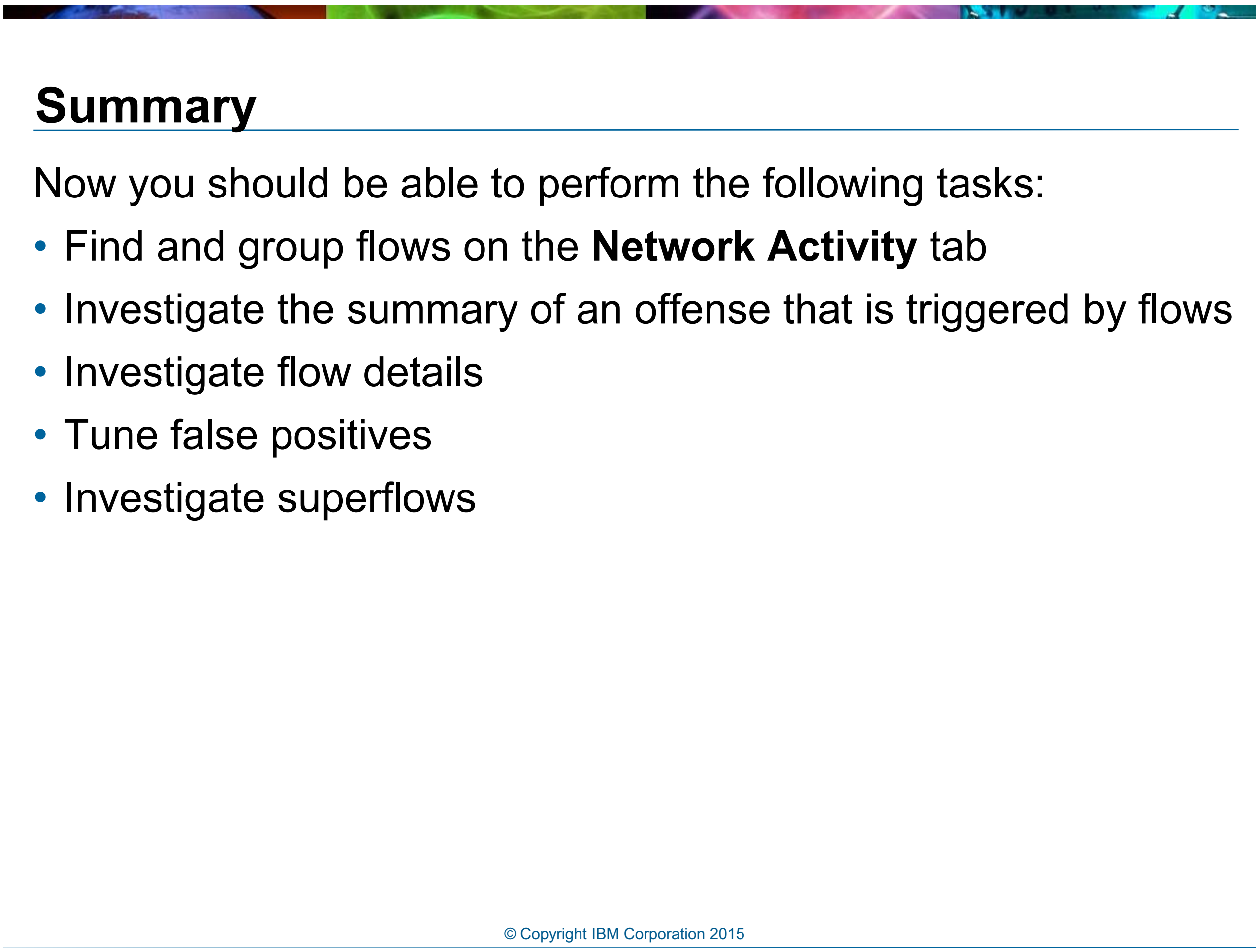
*Superflow additional information*

## Student exercises

Use the procedures in the *Student Exercises Guide* to investigate an offense that is triggered by flows

*Student exercises*

Perform the exercises for this unit.



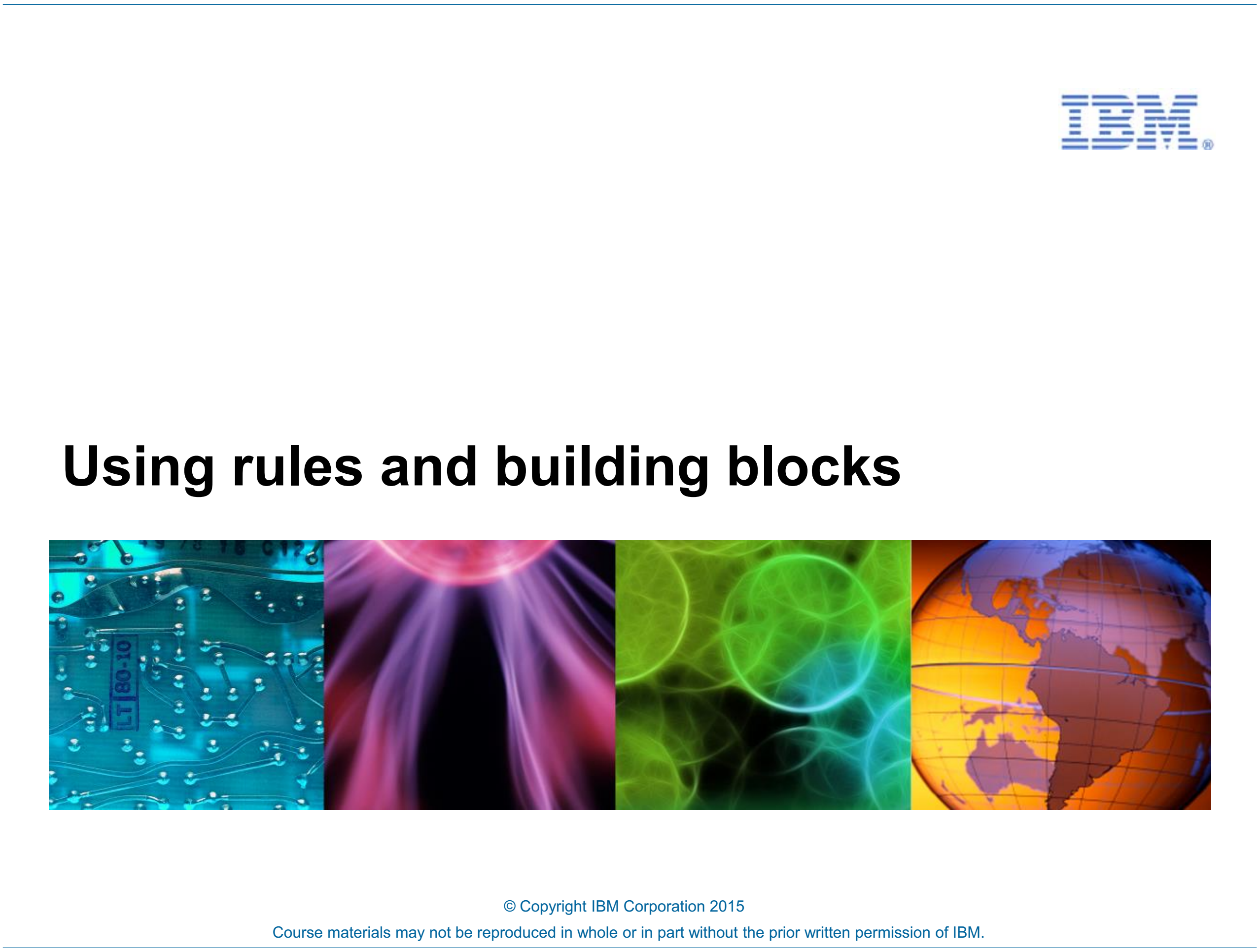
## Summary

Now you should be able to perform the following tasks:

- Find and group flows on the **Network Activity** tab
- Investigate the summary of an offense that is triggered by flows
- Investigate flow details
- Tune false positives
- Investigate superflows

*Summary*

# 8 Using rules and building blocks

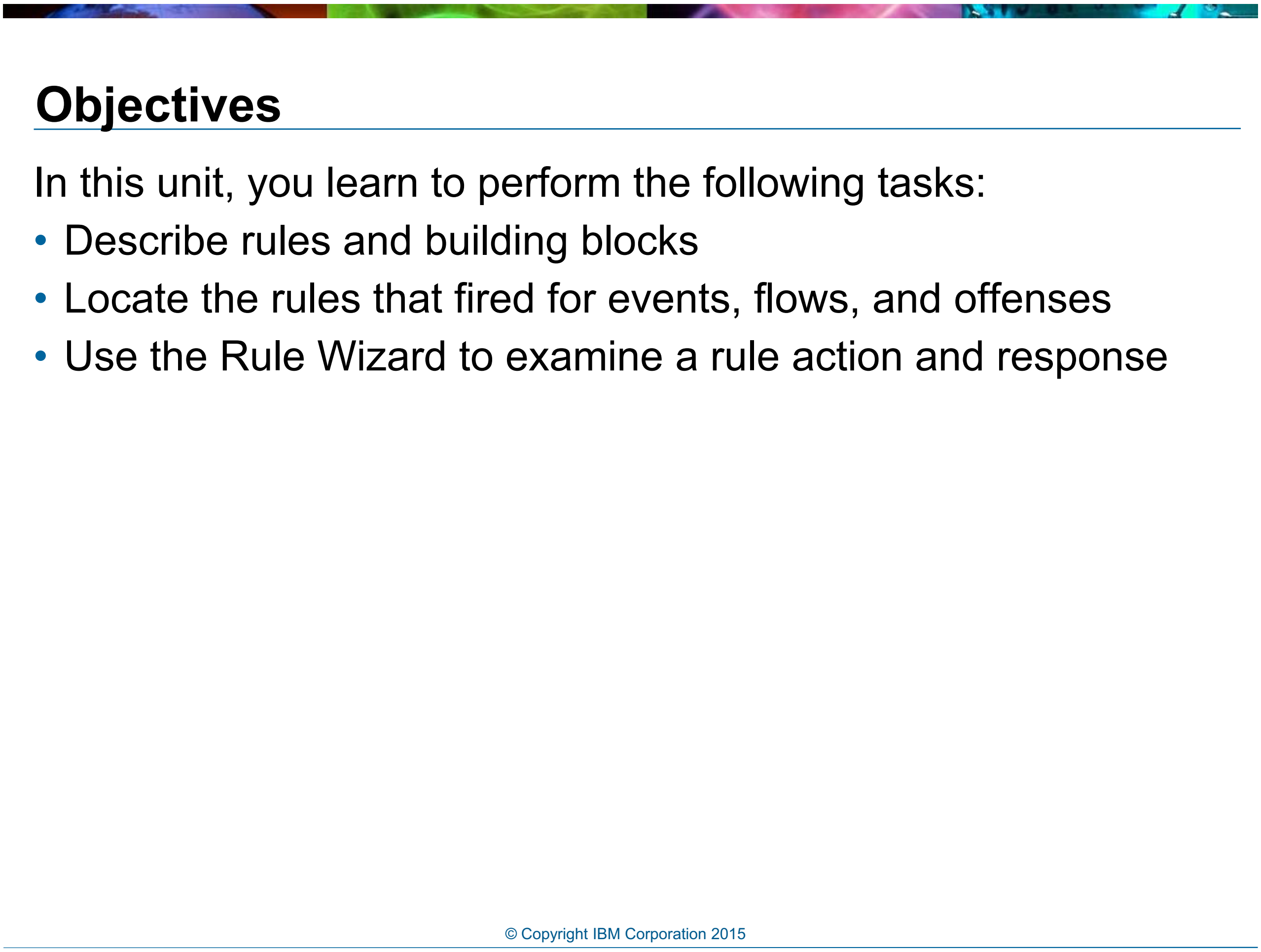


## Using rules and building blocks

Rules perform tests on the events, flows, and offenses in QRadar SIEM and respond if the test criteria is met. A building block is a rule without a response that is used as a common variable in multiple rules or to build complex rules. This unit teaches you how to find custom rules in the QRadar SIEM console and how to assign actions and responses to the rule. You also learn how to configure rules.

References:

- *QRadar SIEM Users Guide* http://ibm.co/1wvpSEE
- *QRadar SIEM Administration Guide* http://ibm.co/1wvpSEE



# Objectives

In this unit, you learn to perform the following tasks:

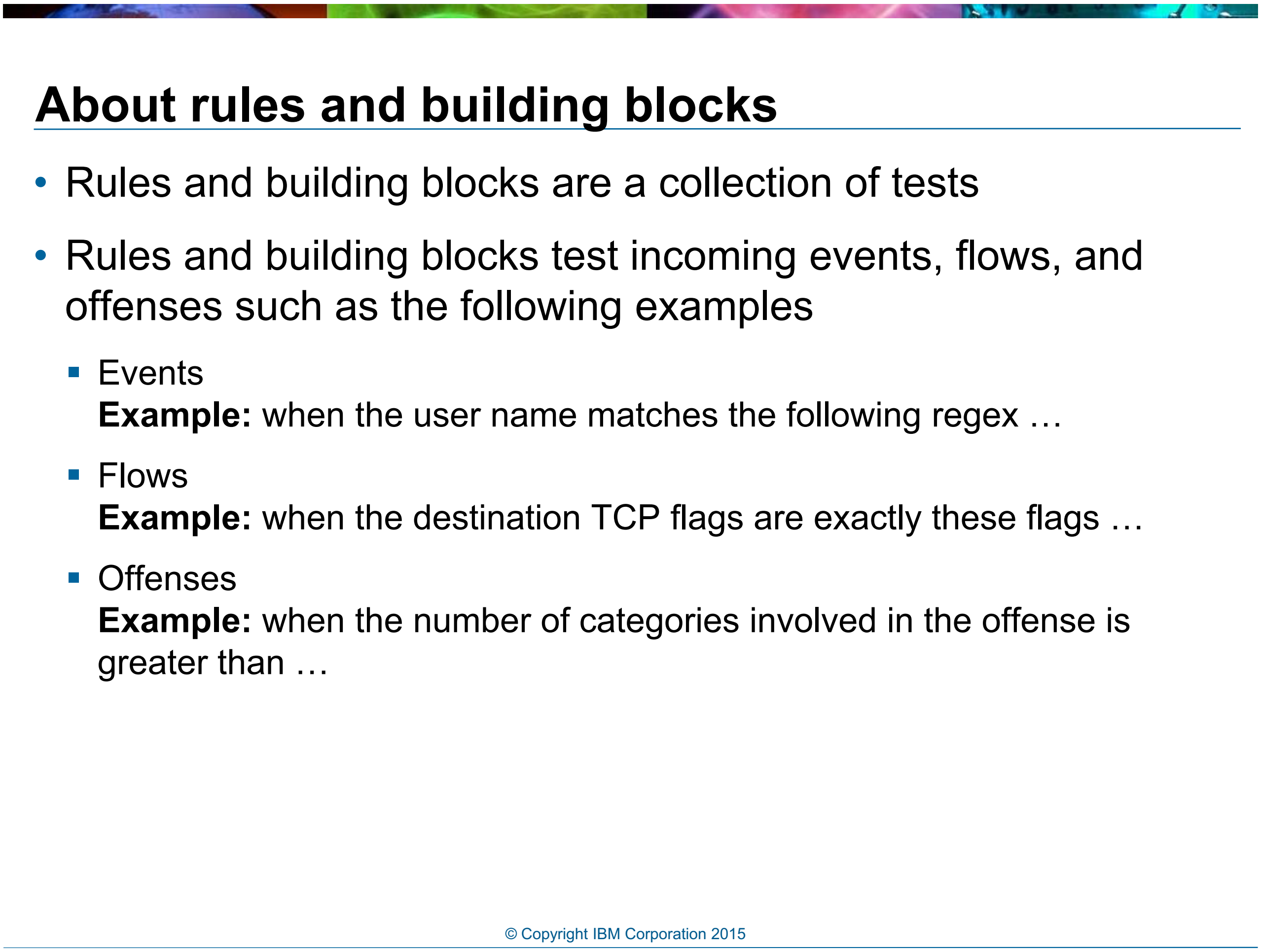
- Describe rules and building blocks
- Locate the rules that fired for events, flows, and offenses
- Use the Rule Wizard to examine a rule action and response

*Objectives*

# Lesson 1  Rules and build blocks overview

## Lesson:  Rules and building blocks overview

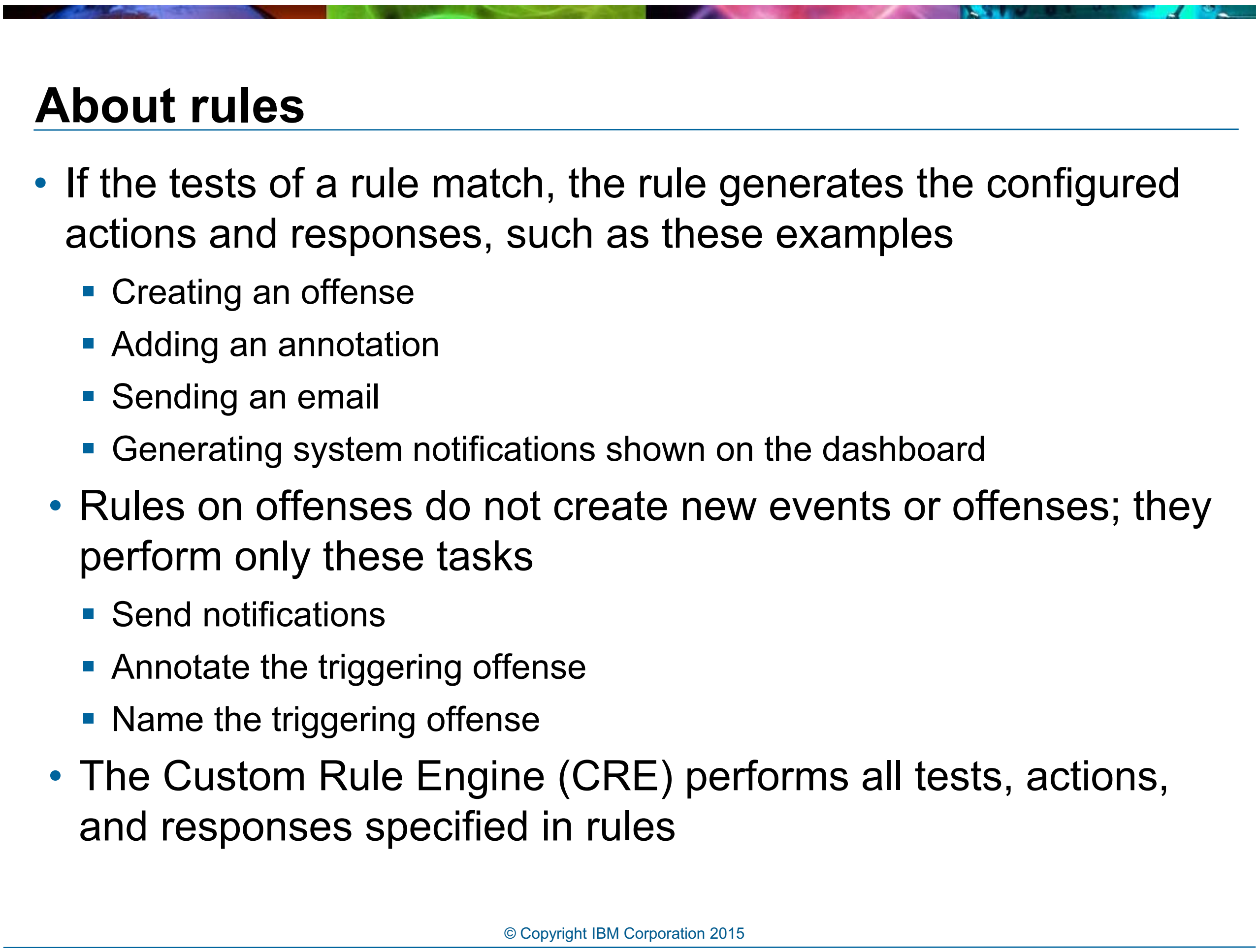
Rules perform tests on events, flows, and offenses and respond if the test criteria is met. A building block is a rule without a response and can be used as a variable in multiple rules. In this lesson, you learn about rules and building blocks.



## About rules and building blocks

- Rules and building blocks are a collection of tests
- Rules and building blocks test incoming events, flows, and offenses such as the following examples
  - Events
    **Example:** when the user name matches the following regex …
  - Flows
    **Example:** when the destination TCP flags are exactly these flags …
  - Offenses
    **Example:** when the number of categories involved in the offense is greater than …

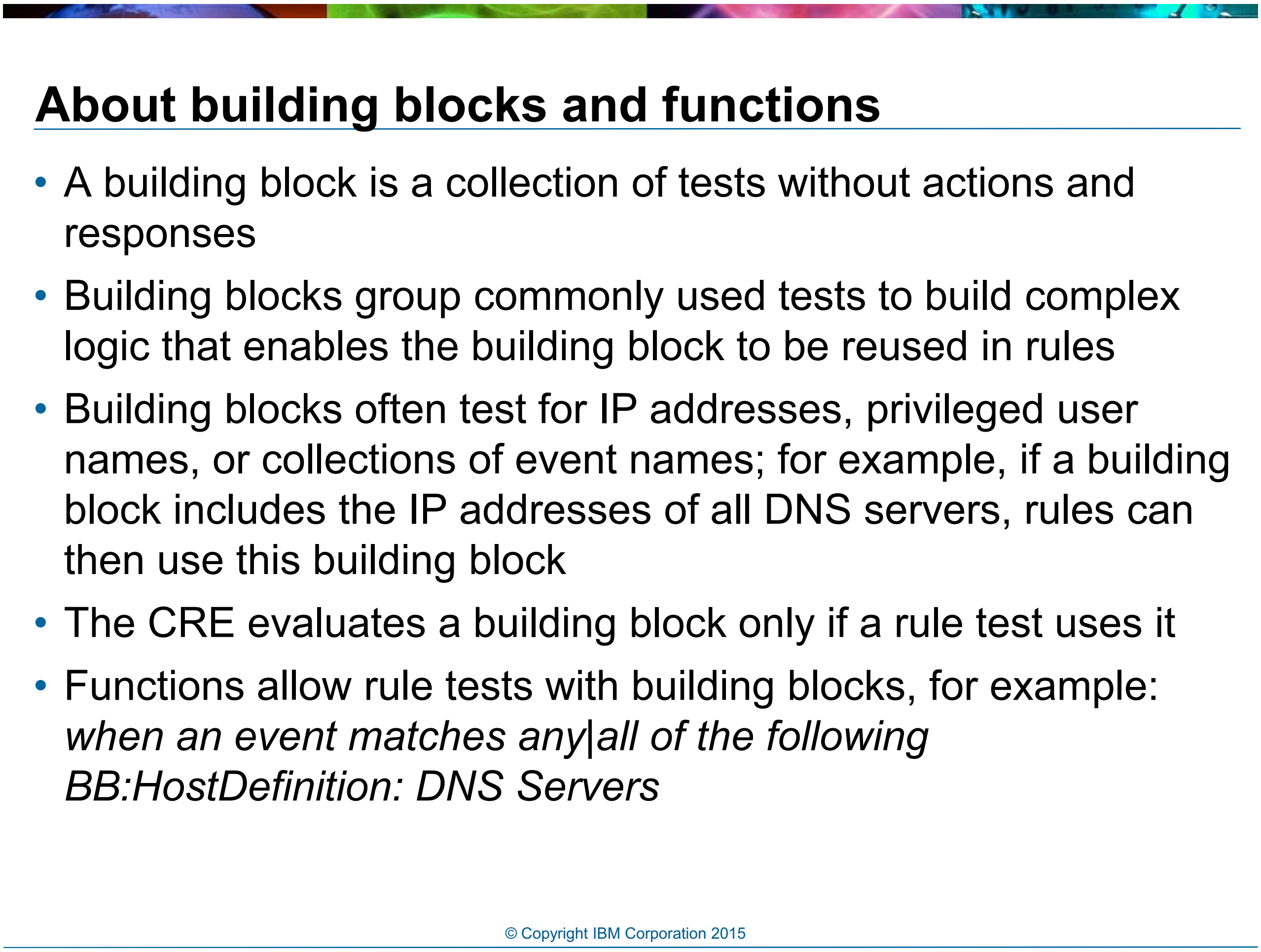
*About rules and building blocks*



## About rules

- If the tests of a rule match, the rule generates the configured actions and responses, such as these examples
  - Creating an offense
  - Adding an annotation
  - Sending an email
  - Generating system notifications shown on the dashboard
- Rules on offenses do not create new events or offenses; they perform only these tasks
  - Send notifications
  - Annotate the triggering offense
  - Name the triggering offense
- The Custom Rule Engine (CRE) performs all tests, actions, and responses specified in rules

*About rules*

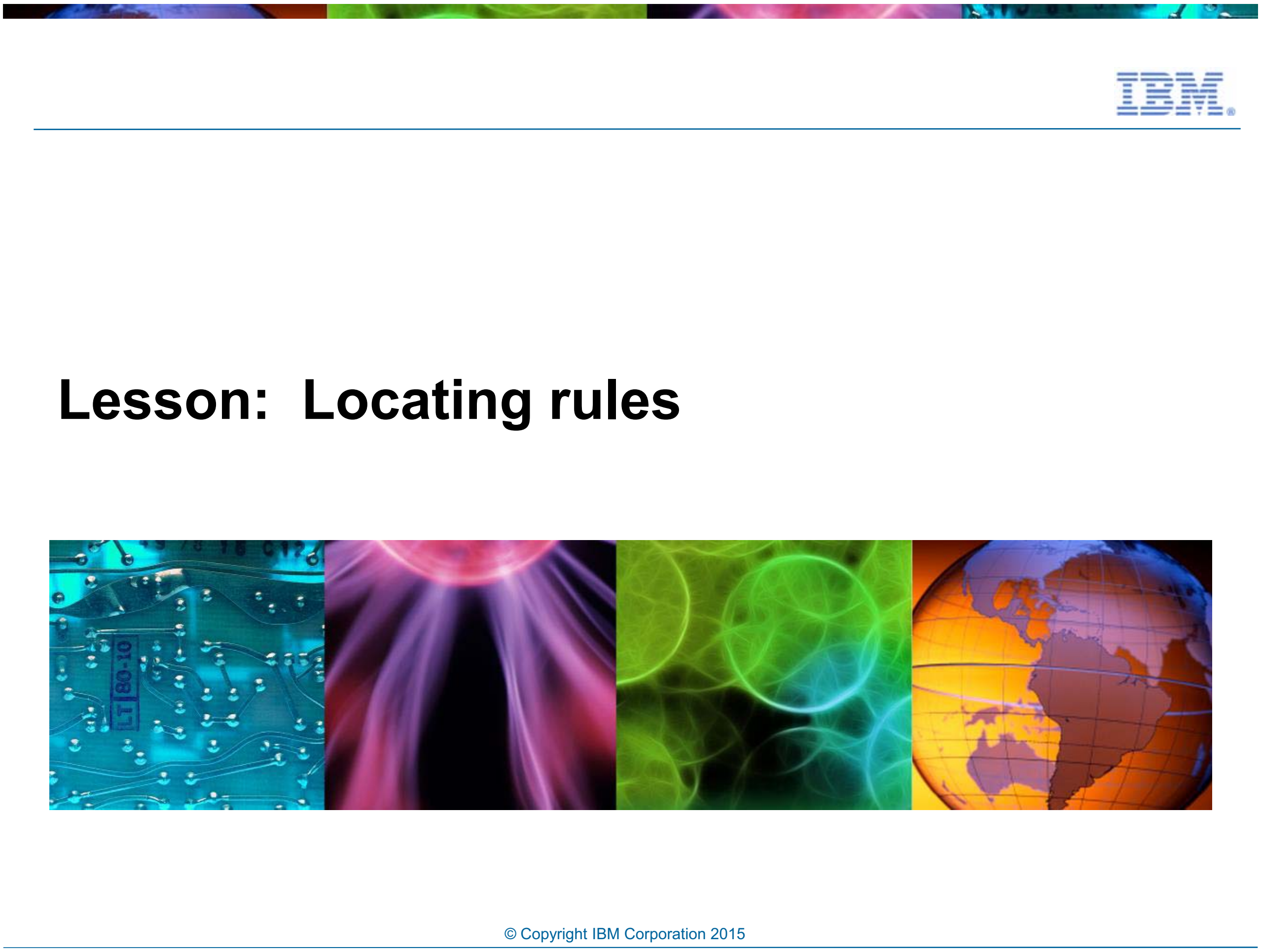


## About building blocks and functions

- A building block is a collection of tests without actions and responses
- Building blocks group commonly used tests to build complex logic that enables the building block to be reused in rules
- Building blocks often test for IP addresses, privileged user names, or collections of event names; for example, if a building block includes the IP addresses of all DNS servers, rules can then use this building block
- The CRE evaluates a building block only if a rule test uses it
- Functions allow rule tests with building blocks, for example: *when an event matches any|all of the following BB:HostDefinition: DNS Servers*

*About building blocks and functions*

# Lesson 2  Locating rules



## Lesson:  Locating rules

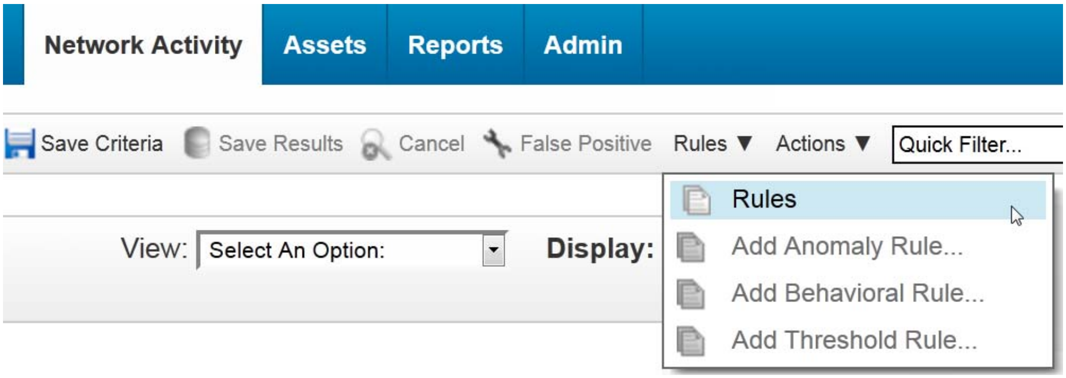
QRadar SIEM offers various options to navigate and list rules. In this lesson, you learn how to locate rules in general and find specific rules that fired for an event, flow, and offense.

References:

- *QRadar SIEM Users Guide* http://ibm.co/1wvpSEE
- *QRadar SIEM Administration Guide* http://ibm.co/1wvpSEE

# Navigating to rules

Select **Rules** by clicking either the **Log Activity** tab or **Network Activity** tab



*Navigating to rules*

The **Rules** list opens in a separate window.

This unit addresses only **custom rules**. They test the incoming events, flows, and offenses. QRadar SIEM includes four custom rule types:

1. Event rules that test only events
2. Flow rules that test only flows
3. Common rule that tests events and flows
4. Offense rule that tests only offenses

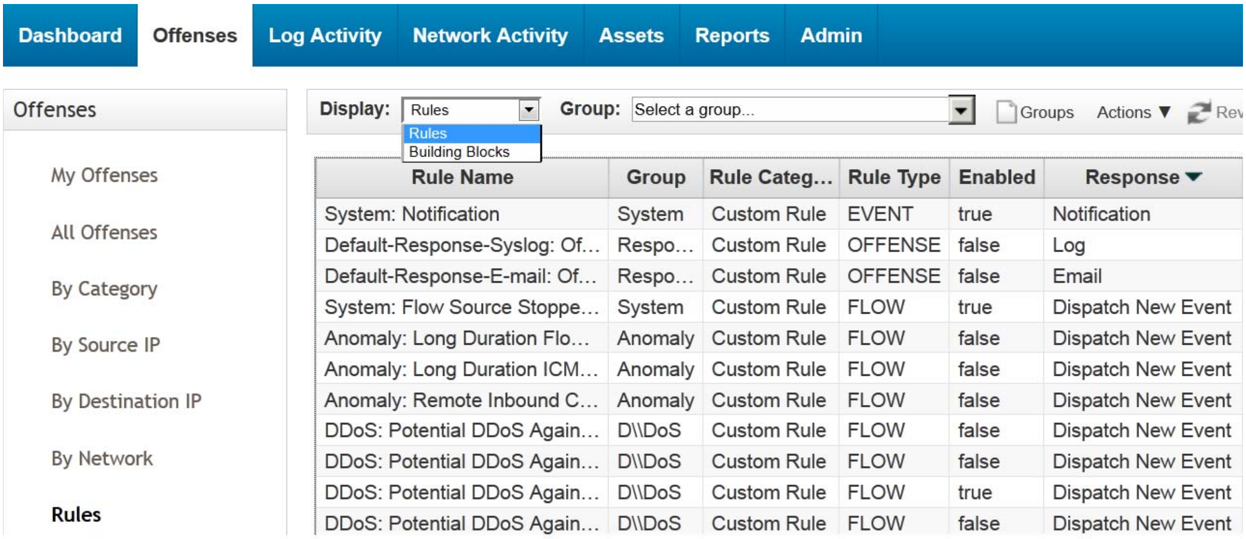
In addition, QRadar SIEM includes three **anomaly detection** rule types:

1. Anomaly detection rules that test the results of saved flow or event searches to detect when unusual traffic patterns occur in your network
2. Behavioral rules that test event and flow traffic according to seasonal traffic levels and trends
3. Threshold rules that test event and flow traffic for activity less than, equal to, or greater than a configured threshold or within a specified range

**Hint:** Refer to the *QRadar SIEM Users Guide* (http://ibm.co/1wvpSEE) for more information about anomaly detection rules.

# Navigating to rules (continued)

Select **Rules** in the **Display** list on the **Offenses** tab to navigate to all rules and building blocks



Display: Rules   Group: Select a group...

| Rule Name | Group | Rule Categ… | Rule Type | Enabled | Response ▼ |
|---|---|---|---|---|---|
| System: Notification | System | Custom Rule | EVENT | true | Notification |
| Default-Response-Syslog: Of… | Respo… | Custom Rule | OFFENSE | false | Log |
| Default-Response-E-mail: Of… | Respo… | Custom Rule | OFFENSE | false | Email |
| System: Flow Source Stoppe… | System | Custom Rule | FLOW | true | Dispatch New Event |
| Anomaly: Long Duration Flo… | Anomaly | Custom Rule | FLOW | false | Dispatch New Event |
| Anomaly: Long Duration ICM… | Anomaly | Custom Rule | FLOW | false | Dispatch New Event |
| Anomaly: Remote Inbound C… | Anomaly | Custom Rule | FLOW | false | Dispatch New Event |
| DDoS: Potential DDoS Again… | D\\DoS | Custom Rule | FLOW | false | Dispatch New Event |
| DDoS: Potential DDoS Again… | D\\DoS | Custom Rule | FLOW | false | Dispatch New Event |
| DDoS: Potential DDoS Again… | D\\DoS | Custom Rule | FLOW | true | Dispatch New Event |
| DDoS: Potential DDoS Again… | D\\DoS | Custom Rule | FLOW | false | Dispatch New Event |

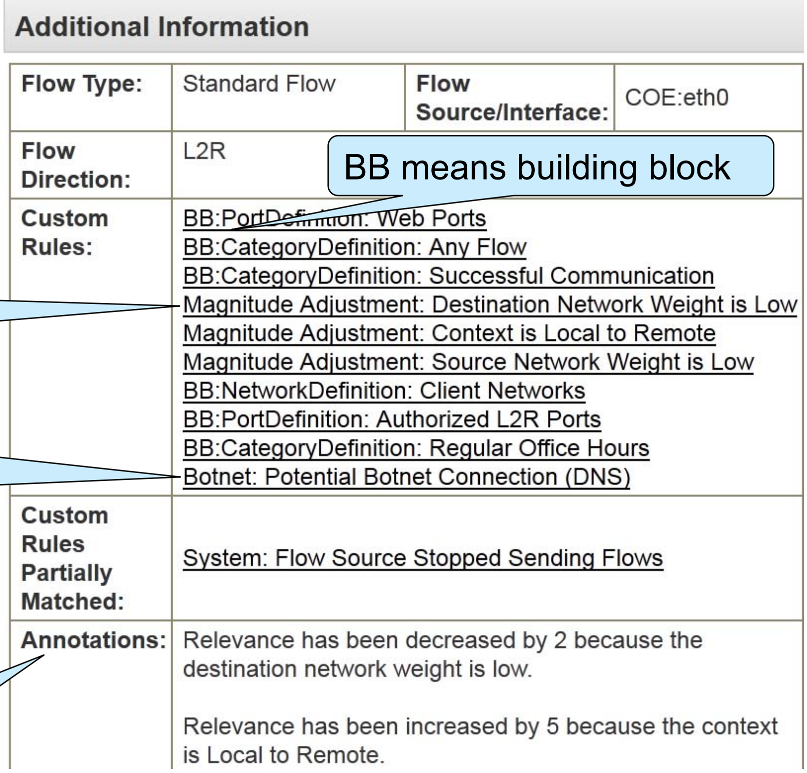
*Navigating to rules (continued)*

You can click the column headers to sort rules.

**Hint:** Refer to the *QRadar SIEM Administration Guide* (http://ibm.co/1wvpSEE) for a list of all rules and more information about managing rules.

# Finding the rules that fired for an event or flow

QRadar SIEM shows the rules and building blocks that fired for an event or flow on its details page



**Additional Information**

| | | | |
|---|---|---|---|
| **Flow Type:** | Standard Flow | **Flow Source/Interface:** | COE:eth0 |
| **Flow Direction:** | L2R | | |
| **Custom Rules:** | BB:PortDefinition: Web Ports<br>BB:CategoryDefinition: Any Flow<br>BB:CategoryDefinition: Successful Communication<br>Magnitude Adjustment: Destination Network Weight is Low<br>Magnitude Adjustment: Context is Local to Remote<br>Magnitude Adjustment: Source Network Weight is Low<br>BB:NetworkDefinition: Client Networks<br>BB:PortDefinition: Authorized L2R Ports<br>BB:CategoryDefinition: Regular Office Hours<br>Botnet: Potential Botnet Connection (DNS) | | |
| **Custom Rules Partially Matched:** | System: Flow Source Stopped Sending Flows | | |
| **Annotations:** | Relevance has been decreased by 2 because the destination network weight is low.<br>Relevance has been increased by 5 because the context is Local to Remote. | | |

BB means building block

This rule added the first annotation below

This rule created the offense this flow contributes to

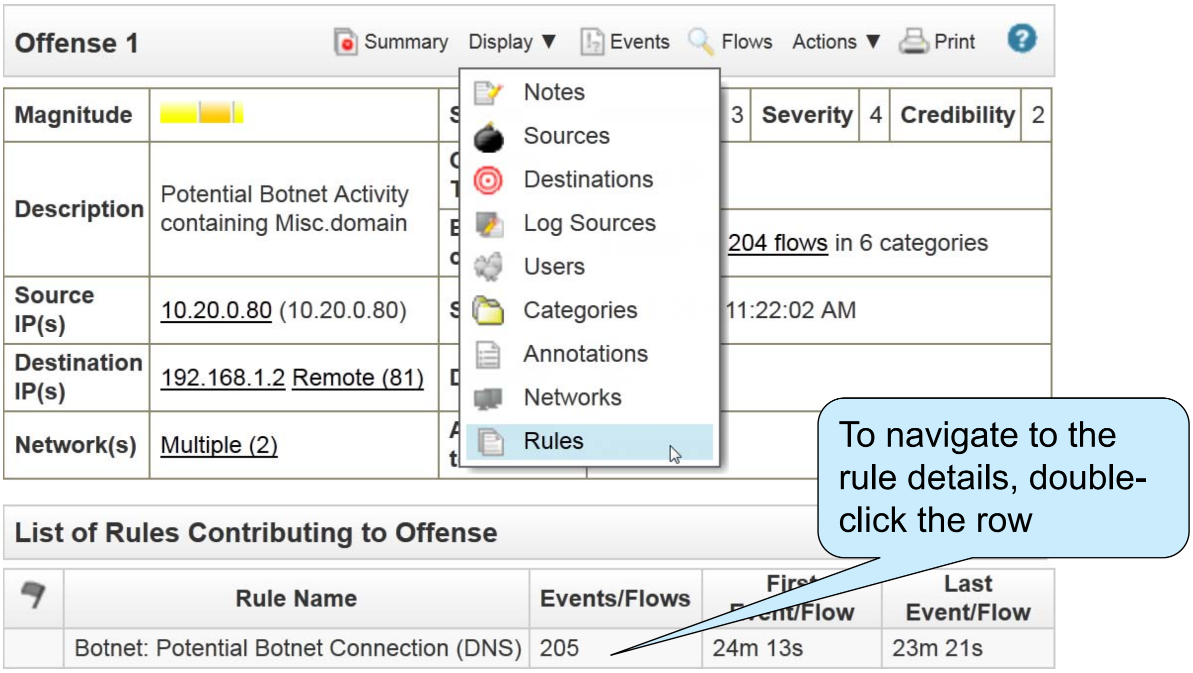
The rules listed above added the annotations

*Finding the rules that fired for an event or flow*

In the example on the slide, **Botnet: Potential Botnet Connection (DNS)** created the offense. The other rules (Magnitude Adjustment) adjusted only the magnitude, and building blocks do not trigger offenses.

# Finding the rules that triggered an offense

Select **Rules** in the **Display** menu of the Offense Summary to navigate to the rules that triggered the offense



| | |
|---|---|
| Magnitude | |
| Description | Potential Botnet Activity containing Misc.domain |
| Source IP(s) | 10.20.0.80 (10.20.0.80) |
| Destination IP(s) | 192.168.1.2 Remote (81) |
| Network(s) | Multiple (2) |

3 Severity 4 Credibility 2

204 flows in 6 categories

11:22:02 AM

List of Rules Contributing to Offense

| | Rule Name | Events/Flows | First Event/Flow | Last Event/Flow |
|---|---|---|---|---|
| | Botnet: Potential Botnet Connection (DNS) | 205 | 24m 13s | 23m 21s |

To navigate to the rule details, double-click the row

*Finding the rules that triggered an offense*

Using the navigation path on the slide, QRadar SIEM displays only rules and does not display the building blocks. To view and manage rules, the user must have the **View Custom Rules** or **Maintain Custom Rules** role permissions.

# Lesson 3 Using rule definitions during an investigation

## Lesson: Using rule definitions during an investigation

As part of an offense investigation, you might need to find out in detail why rules triggered an offense. The Rule Wizard allows you to view and modify tests, actions, and responses of rules. In this lesson, you learn how to examine a rule in the Rule Wizard.

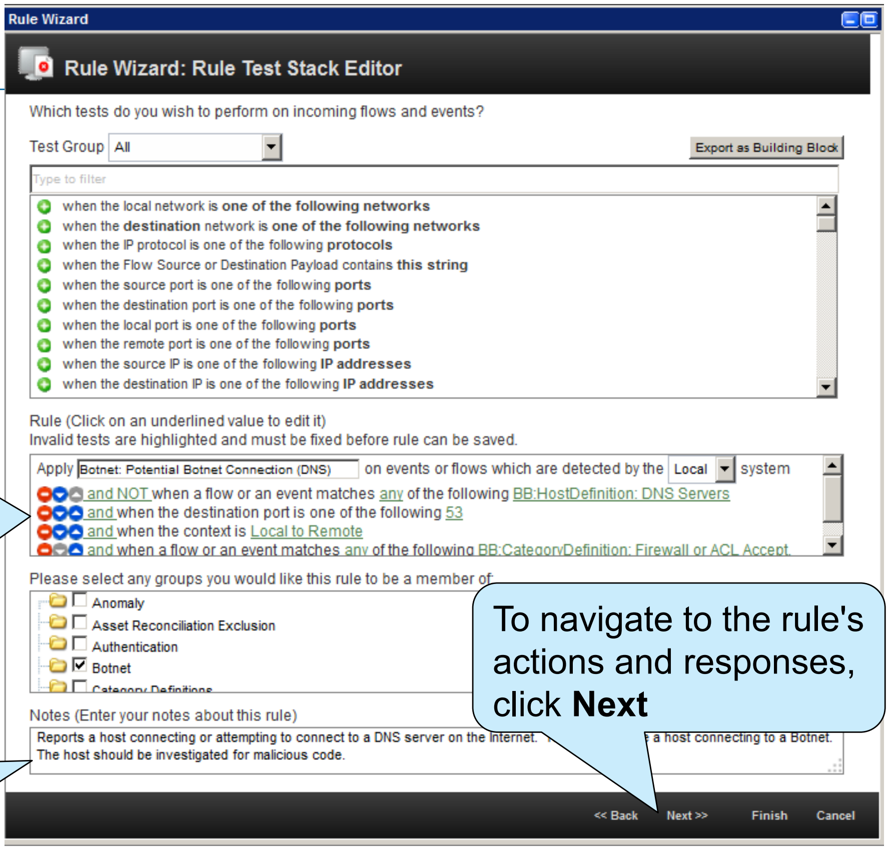
Reference: *QRadar SIEM Administration Guide* http://ibm.co/1wvpSEE

# Rule Wizard demonstration

*Rule Wizard demonstration*

## Rule Wizard

To find out in detail why a rule fired, investigate the rule


Rule Wizard

Rule Wizard: Rule Test Stack Editor

Which tests do you wish to perform on incoming flows and events?

Test Group All

Export as Building Block

Type to filter

- when the local network is **one of the following networks**
- when the **destination** network is **one of the following networks**
- when the IP protocol is one of the following **protocols**
- when the Flow Source or Destination Payload contains **this string**
- when the source port is one of the following **ports**
- when the destination port is one of the following **ports**
- when the local port is one of the following **ports**
- when the remote port is one of the following **ports**
- when the source IP is one of the following **IP addresses**
- when the destination IP is one of the following **IP addresses**

Rule (Click on an underlined value to edit it)
Invalid tests are highlighted and must be fixed before rule can be saved.

Apply Botnet: Potential Botnet Connection (DNS) on events or flows which are detected by the Local system
and NOT when a flow or an event matches any of the following BB:HostDefinition: DNS Servers
and when the destination port is one of the following 53
and when the context is Local to Remote
and when a flow or an event matches any of the following BB:CategoryDefinition: Firewall or ACL Accept

Please select any groups you would like this rule to be a member of:

- □ Anomaly
- □ Asset Reconciliation Exclusion
- □ Authentication
- ☑ Botnet
- □ Category Definitions

Notes (Enter your notes about this rule)

Reports a host connecting or attempting to connect to a DNS server on the Internet. … a host connecting to a Botnet. The host should be investigated for malicious code.

Learn from the rule's tests that it detects flows contacting remote DNS servers

Learn about the rule's purpose and tests

To navigate to the rule's actions and responses, click **Next**

*Rule Wizard*

If you have the **Maintain Custom Rules** permission, QRadar SIEM opens the Rule Test Stack Editor to edit the rule as displayed on the slide. If you have the **View Custom Rules** permission, but not the **Maintain Custom Rules** permission, QRadar SIEM displays the rule summary as read only.

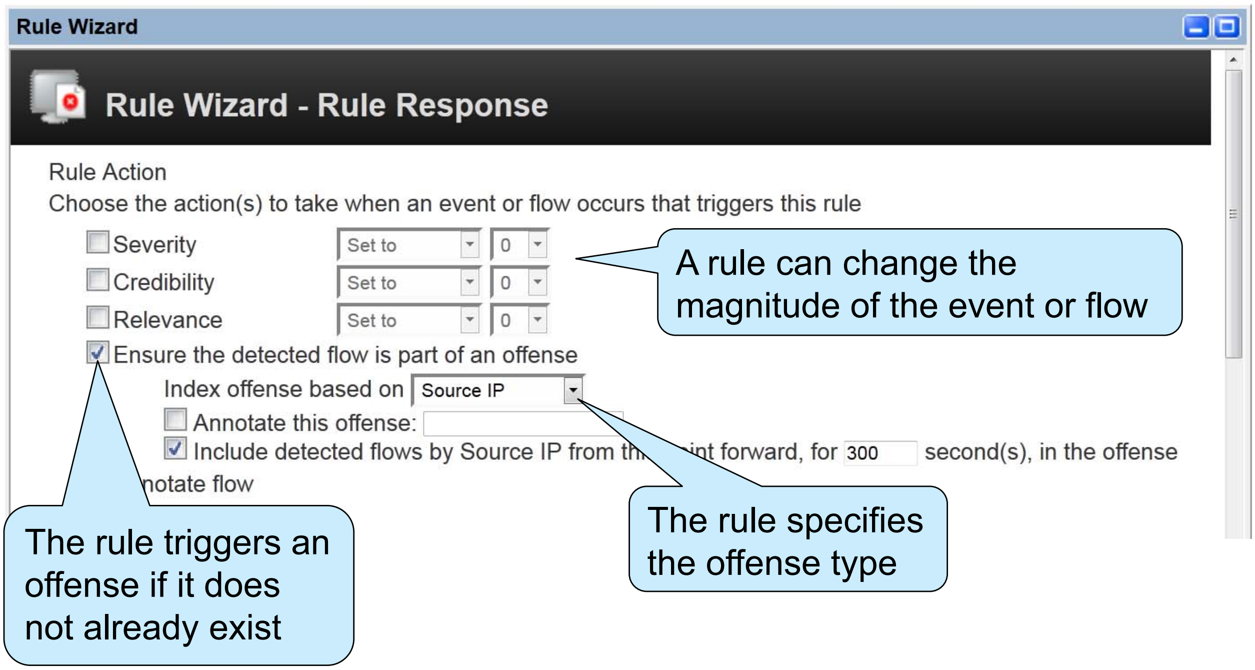
To add or remove a test:

- Click the green **+** to add the test.
- Click the red **–** to remove the test.

**Hint:** Refer to the *QRadar SIEM Administration Guide* (http://ibm.co/1wvpSEE) for more information about developing rules.

# Rule actions

## When a rule fires, QRadar SIEM executes its actions



Rule Action
Choose the action(s) to take when an event or flow occurs that triggers this rule

- □ Severity Set to 0
- □ Credibility Set to 0
- □ Relevance Set to 0
- ☑ Ensure the detected flow is part of an offense
  - Index offense based on Source IP
  - □ Annotate this offense:
  - ☑ Include detected flows by Source IP from th int forward, for 300 second(s), in the offense

notate flow

A rule can change the magnitude of the event or flow

The rule triggers an offense if it does not already exist

The rule specifies the offense type

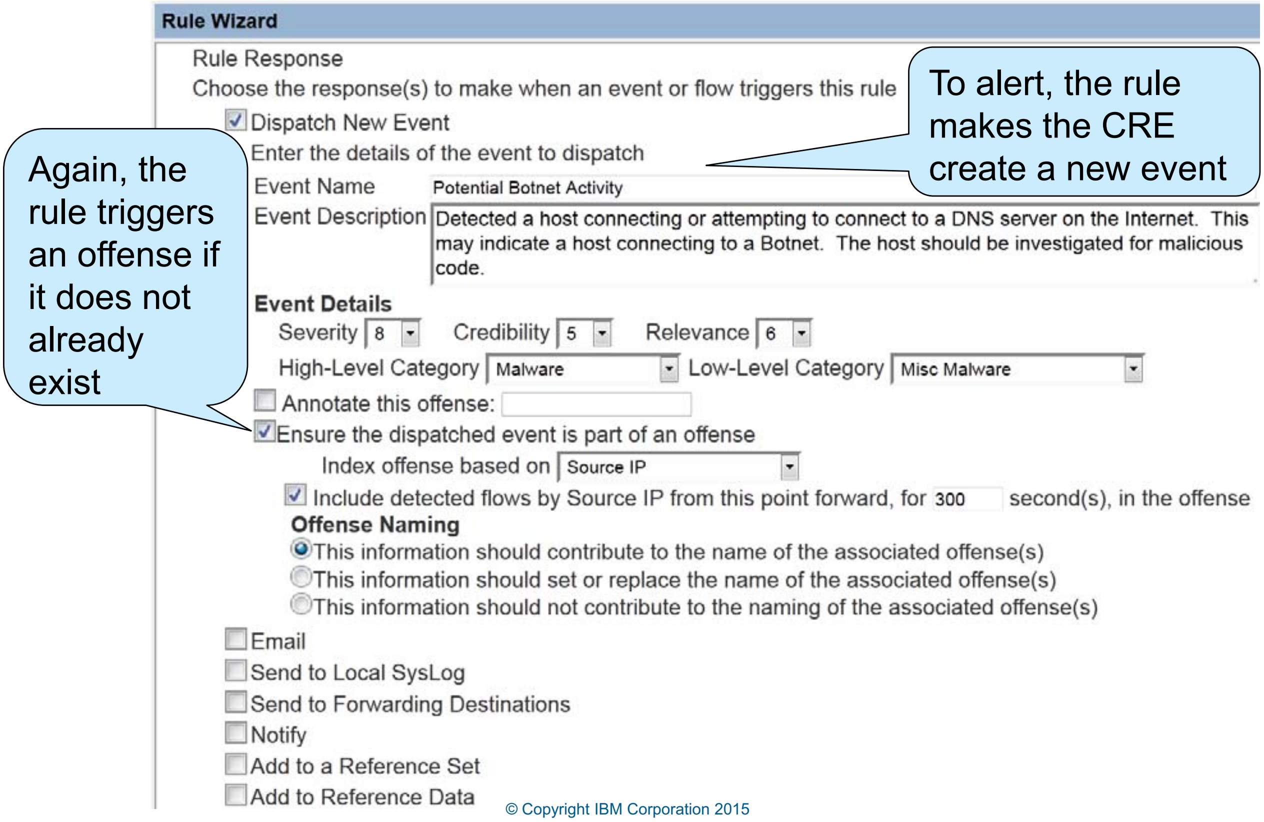
*Rule actions*

The rule can also annotate the offense or flow.

Some of the rules that come with QRadar SIEM do not have defined actions and responses. QRadar SIEM still tags the event or flow as meeting the test criteria specified in the rule. This information can be used later in searches, reports, and other rules. Following are some examples of how this information could be used:

- Anomaly: Single IP with Multiple MAC Addresses
- Policy: Host has SANS Top 20 Vulnerability
- Recon: Single Merged Recon Events Remote Scanner
- System: Host Based Failures
- System: Critical System Events

# Rule response



Rule Wizard

Rule Response

Choose the response(s) to make when an event or flow triggers this rule

☑ Dispatch New Event

Enter the details of the event to dispatch

Event Name: Potential Botnet Activity

Event Description: Detected a host connecting or attempting to connect to a DNS server on the Internet. This may indicate a host connecting to a Botnet. The host should be investigated for malicious code.

**Event Details**

Severity: 8 · Credibility: 5 · Relevance: 6

High-Level Category: Malware · Low-Level Category: Misc Malware

□ Annotate this offense:

☑ Ensure the dispatched event is part of an offense

Index offense based on: Source IP

☑ Include detected flows by Source IP from this point forward, for 300 second(s), in the offense

**Offense Naming**

● This information should contribute to the name of the associated offense(s)

○ This information should set or replace the name of the associated offense(s)

○ This information should not contribute to the naming of the associated offense(s)

□ Email

□ Send to Local SysLog

□ Send to Forwarding Destinations

□ Notify

□ Add to a Reference Set

□ Add to Reference Data

To alert, the rule makes the CRE create a new event

Again, the rule triggers an offense if it does not already exist

*Rule response*

The Custom Rule Engine (CRE) is the log source of the new event because the CRE creates all events that are triggered by rules.

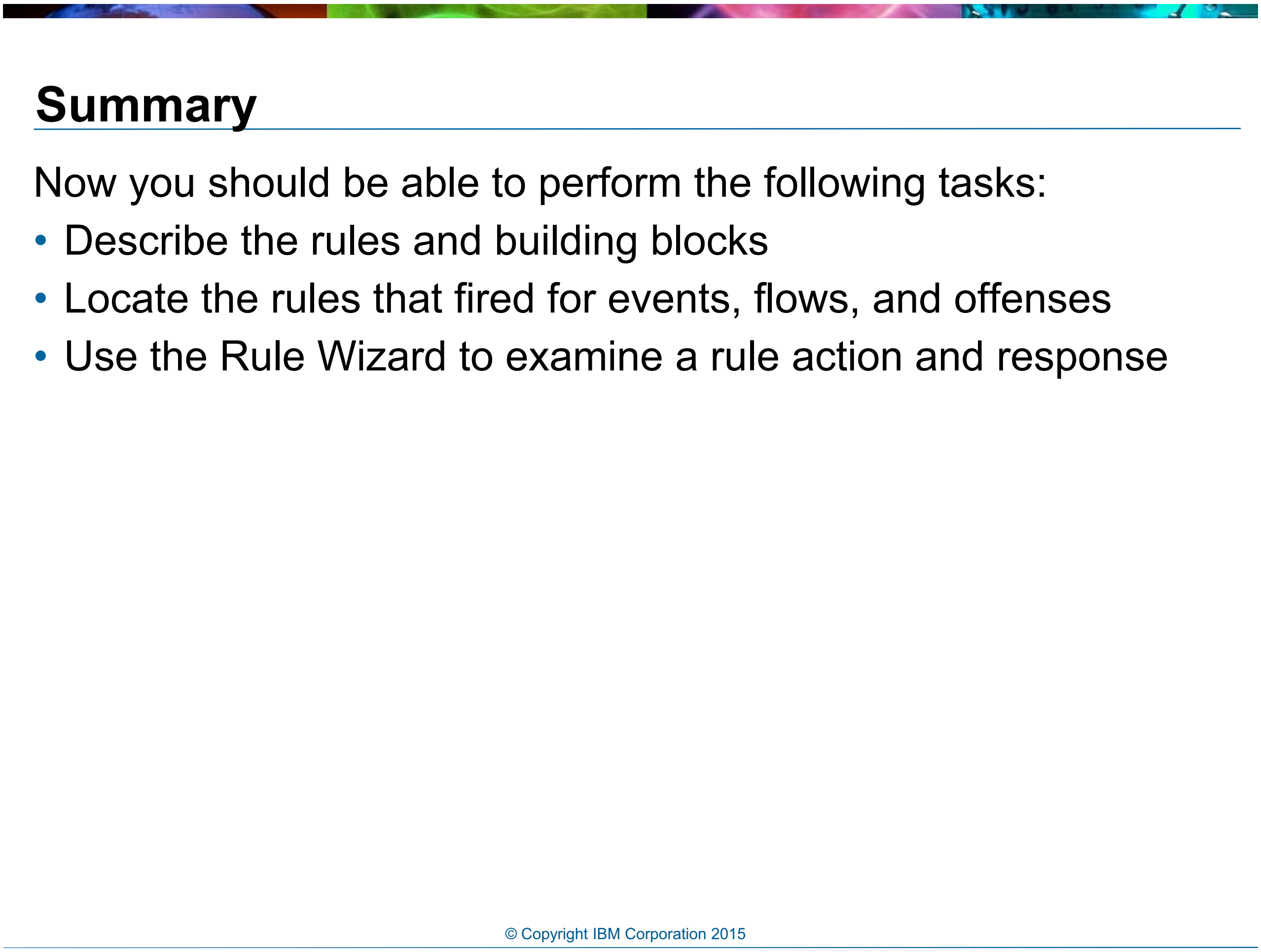
## Student exercises

Use the procedures in the *Student Exercises Guide* to perform the following tasks

- Create an event rule
- Analyze the rule that contributed to the Local DNS Scanner offense
- Work with rule parameters
- Delete changes made to a rule
- Search for a rule

*Student exercises*

Perform the exercises for this unit.



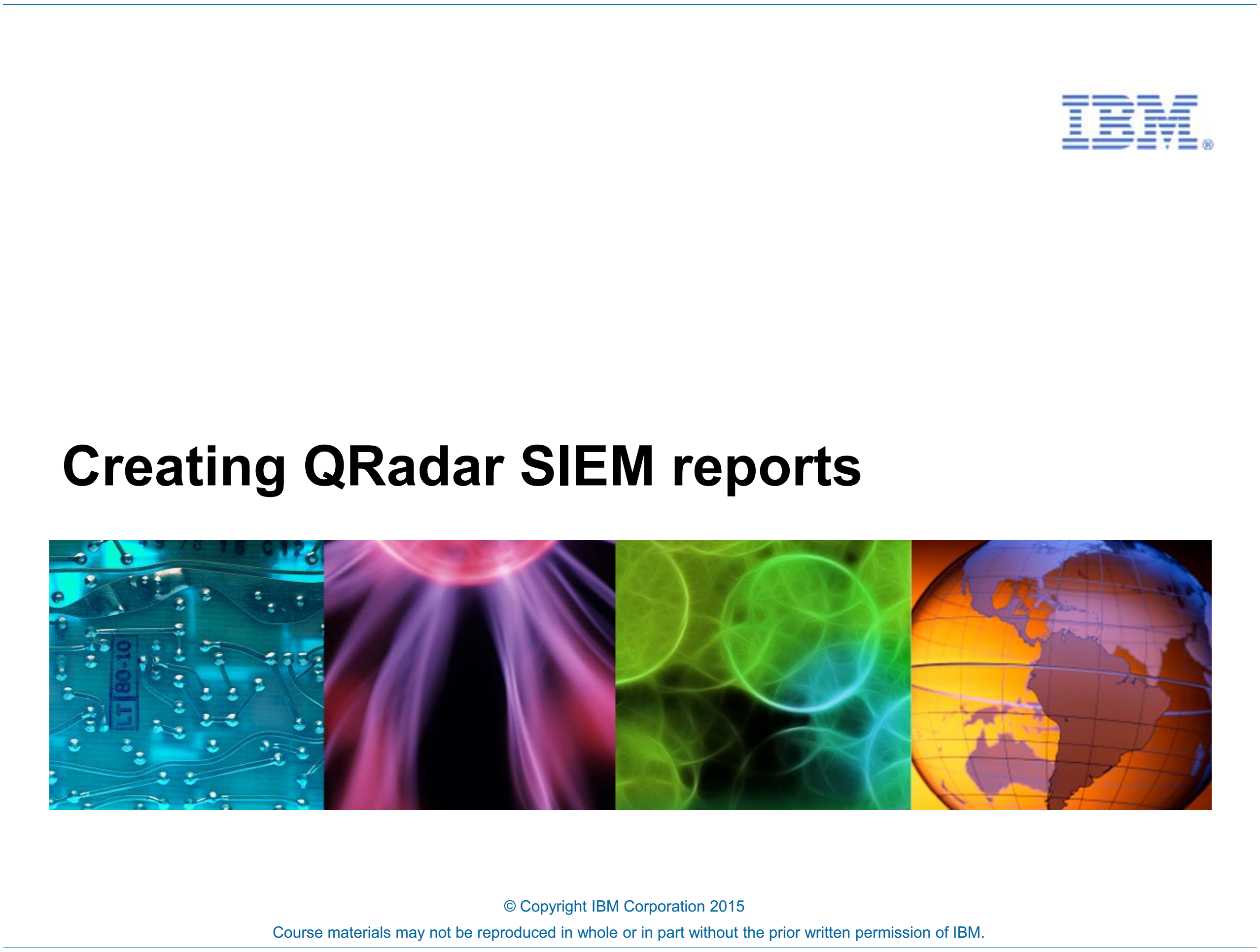
## Summary

Now you should be able to perform the following tasks:

- Describe the rules and building blocks
- Locate the rules that fired for events, flows, and offenses
- Use the Rule Wizard to examine a rule action and response

*Summary*

# 9 Creating QRadar SIEM reports



## Creating QRadar SIEM reports

Reports allow you to examine trends and statistical views on your network for various purposes, in particular to meet compliance requirements. This unit teaches you how to generate a report using a predefined template and create a report template.

Reference: *QRadar SIEM Users Guide* http://ibm.co/1wvpSEE

# Objectives

In this unit, you learn to perform the following tasks:

- Navigate and use the **Reports** tab
- Generate and view a report
- Use the Report Wizard to create a custom report template

*Objectives*

# Lesson 1 Navigating the Reports tab

## Lesson: Navigating the Reports tab

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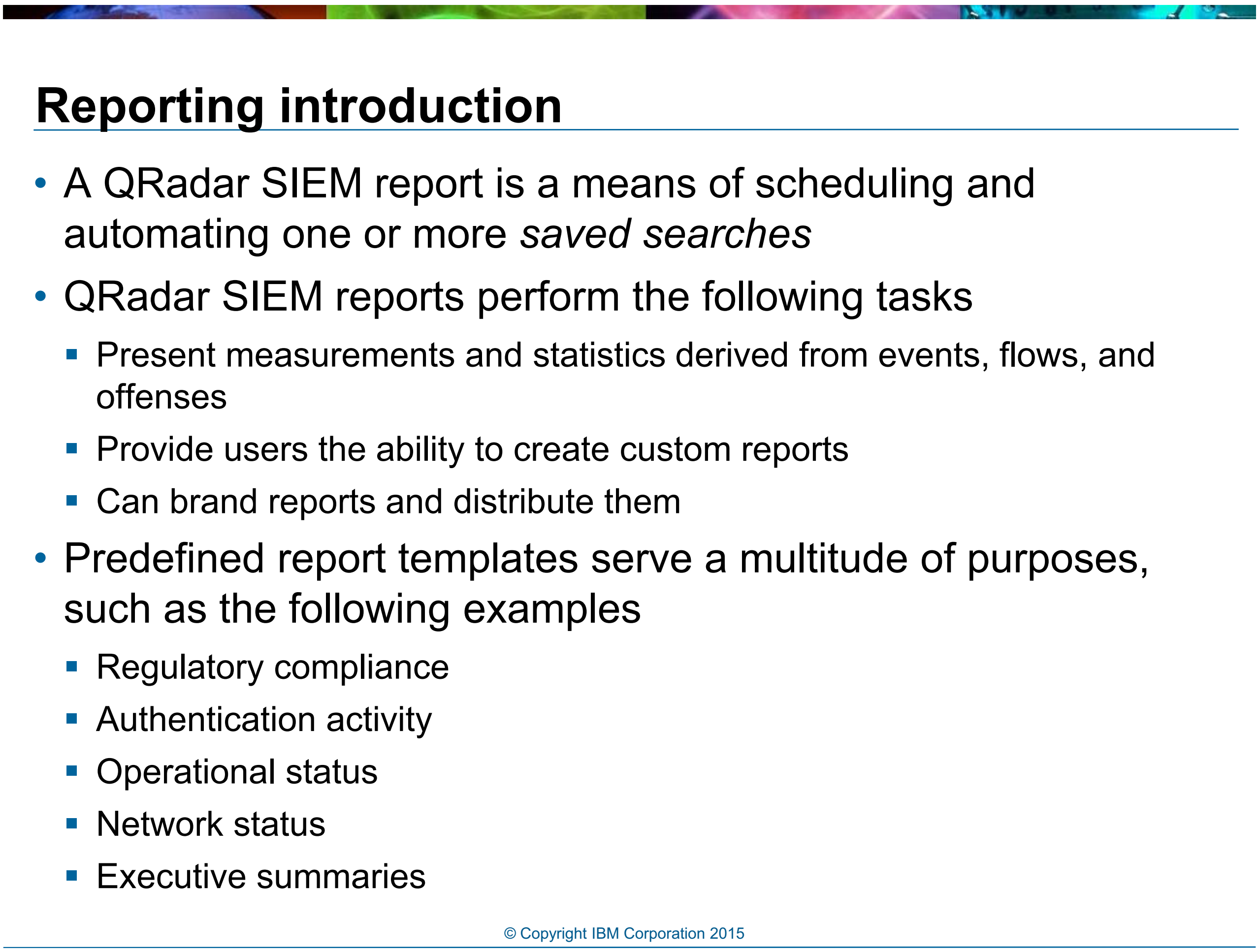
QRadar SIEM provides over one thousand templates you can use to generate reports. In this lesson, you learn how to access the report templates and generate a report.

Reference: *QRadar SIEM Users Guide* http://ibm.co/1wvpSEE



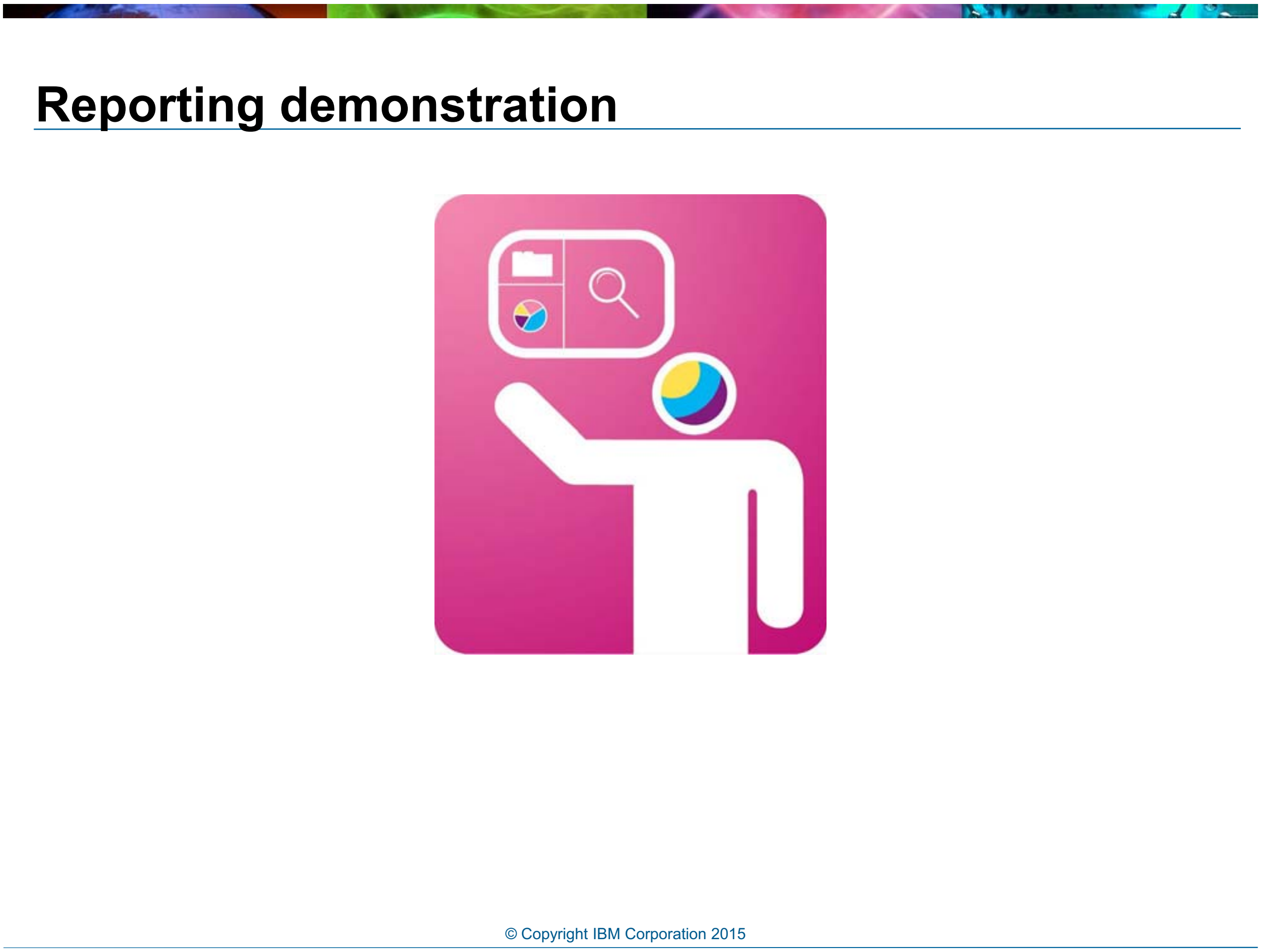
# Reporting introduction

- A QRadar SIEM report is a means of scheduling and automating one or more *saved searches*
- QRadar SIEM reports perform the following tasks
  - Present measurements and statistics derived from events, flows, and offenses
  - Provide users the ability to create custom reports
  - Can brand reports and distribute them
- Predefined report templates serve a multitude of purposes, such as the following examples
  - Regulatory compliance
  - Authentication activity
  - Operational status
  - Network status
  - Executive summaries

*Reporting introduction*

QRadar SIEM supports the following regulatory schemas:

- **HIPAA**: Health Insurance Portability and Accountability Act
- **COBIT**: Control Objectives for Information and Related Technology
- **SOX**: Sarbanes-Oxley Public Company Accounting Reform and Investor Protection Act
- **PCI**: Visa Payment Card Industry Data Security Standard
- **GLBA**: Gramm-Leach-Bliley Privacy Act
- **FISMA**: Federal Information Security Management Act
- **NERC**: The North American Electric Reliability Council
- **GSX**: Government Secure Extranet

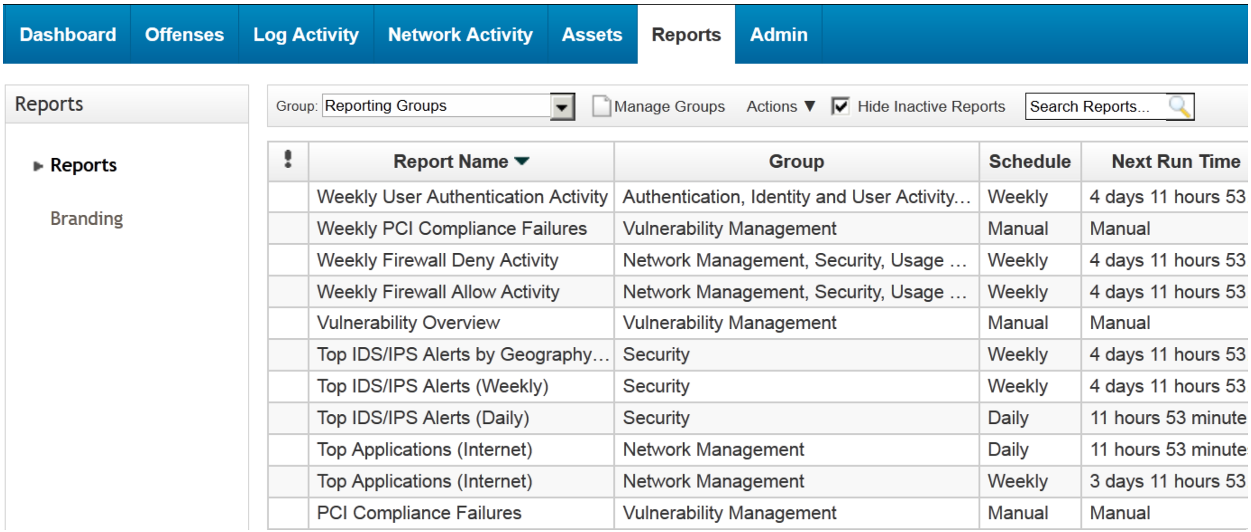


# Reporting demonstration

*Reporting demonstration*

# Reports tab

You can search and sort report templates in a similar way as events and flows



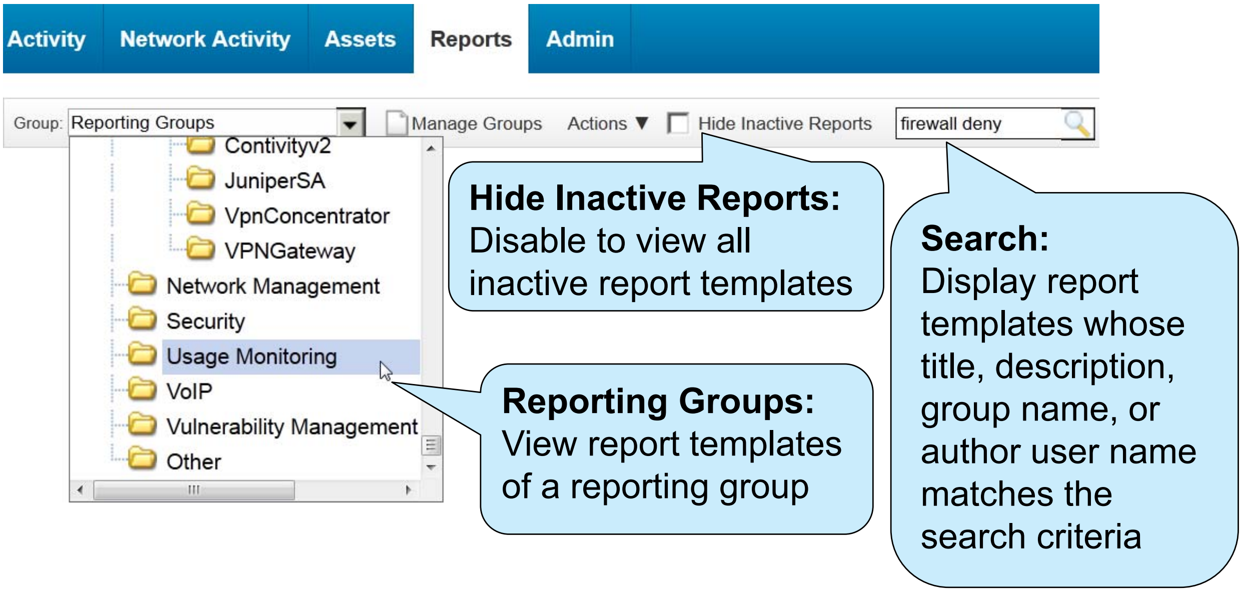
| ! | Report Name ▼ | Group | Schedule | Next Run Time |
|---|---|---|---|---|
| | Weekly User Authentication Activity | Authentication, Identity and User Activity... | Weekly | 4 days 11 hours 53 |
| | Weekly PCI Compliance Failures | Vulnerability Management | Manual | Manual |
| | Weekly Firewall Deny Activity | Network Management, Security, Usage ... | Weekly | 4 days 11 hours 53 |
| | Weekly Firewall Allow Activity | Network Management, Security, Usage ... | Weekly | 4 days 11 hours 53 |
| | Vulnerability Overview | Vulnerability Management | Manual | Manual |
| | Top IDS/IPS Alerts by Geography... | Security | Weekly | 4 days 11 hours 53 |
| | Top IDS/IPS Alerts (Weekly) | Security | Weekly | 4 days 11 hours 53 |
| | Top IDS/IPS Alerts (Daily) | Security | Daily | 11 hours 53 minute |
| | Top Applications (Internet) | Network Management | Daily | 11 hours 53 minute |
| | Top Applications (Internet) | Network Management | Weekly | 3 days 11 hours 53 |
| | PCI Compliance Failures | Vulnerability Management | Manual | Manual |

*Reports tab*

Select **Branding** in the left column to upload logos for your reports. Once a logo is uploaded, users can use the log when creating or editing report templates.

# Finding a report

QRadar SIEM includes more than 1500 report templates; before you create a new template, check the predefined templates



**Hide Inactive Reports:** Disable to view all inactive report templates

**Reporting Groups:** View report templates of a reporting group

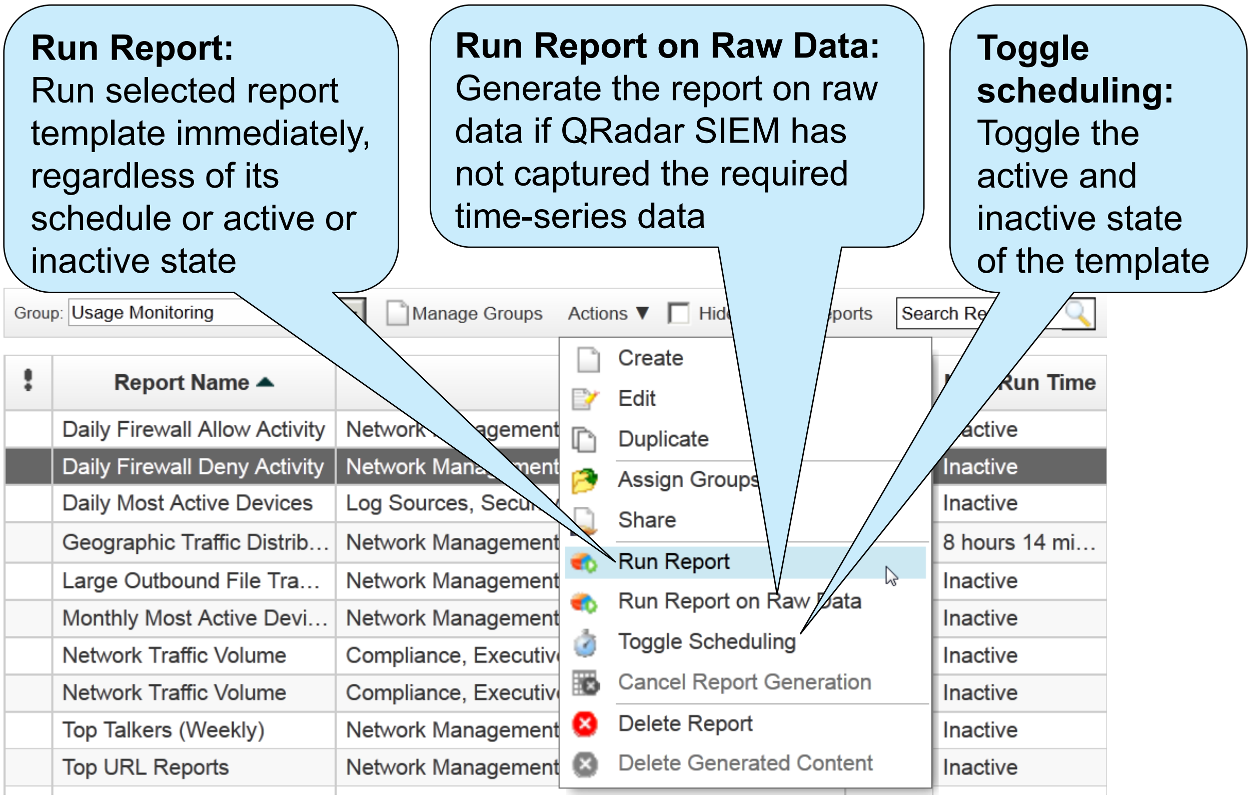
**Search:** Display report templates whose title, description, group name, or author user name matches the search criteria

*Finding a report*

**Inactive reports**: QRadar SIEM does not automatically generate reports for inactive templates.

**Active reports**: QRadar SIEM generates reports for active templates automatically according to the schedule, unless the schedule is set to manual. QRadar SIEM lists active templates with a manual schedule if the **Hide Inactive Reports** check box is enabled.

# Running a report



**Run Report:** Run selected report template immediately, regardless of its schedule or active or inactive state

**Run Report on Raw Data:** Generate the report on raw data if QRadar SIEM has not captured the required time-series data

**Toggle scheduling:** Toggle the active and inactive state of the template

| ! | Report Name ▲ | | Run Time |
|---|---|---|---|
| | Daily Firewall Allow Activity | Network agement | active |
| | Daily Firewall Deny Activity | Network Mana ment | Inactive |
| | Daily Most Active Devices | Log Sources, Secu | Inactive |
| | Geographic Traffic Distrib… | Network Management | 8 hours 14 mi… |
| | Large Outbound File Tra… | Network Management | Inactive |
| | Monthly Most Active Devi… | Network Management | Inactive |
| | Network Traffic Volume | Compliance, Executiv | Inactive |
| | Network Traffic Volume | Compliance, Executiv | Inactive |
| | Top Talkers (Weekly) | Network Management | Inactive |
| | Top URL Reports | Network Management | Inactive |

*Running a report*

The left-most column with the exclamation point includes an error icon when a report fails to generate.

## About the Run Report option

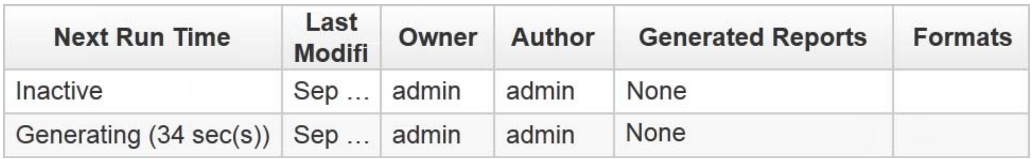
Reports scheduled to run daily, weekly, and monthly use accumulated time-series data. When a report is scheduled or created, the time-series data accumulations begins:

- If no accumulated data is available when the report runs, the generated report displays the message that accumulated data is not available.
- Hourly reports use accumulated time-series data if it is available. If accumulated time-series data is not available, an hourly report automatically uses raw data to generate the report.
- Manually scheduled reports use accumulated data if it is available; however, they do not start the time-series data accumulation process.

## About the Run Report on Raw Data option

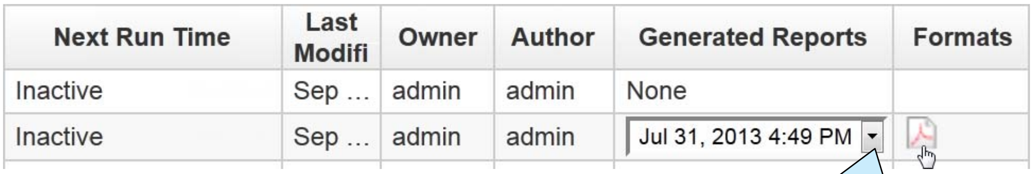
You can choose this option if QRadar SIEM has not accumulated time-series data for your required reporting period. When a report runs on raw data, QRadar SIEM queries the data in its datastore to generate the report. Running a report on raw data takes a longer time to process than running a report on accumulated time-series data.

# Selecting the generated report



| Next Run Time | Last Modifi | Owner | Author | Generated Reports | Formats |
|---|---|---|---|---|---|
| Inactive | Sep … | admin | admin | None | |
| Generating (34 sec(s)) | Sep … | admin | admin | None | |

Estimated 34 seconds until the report is generated



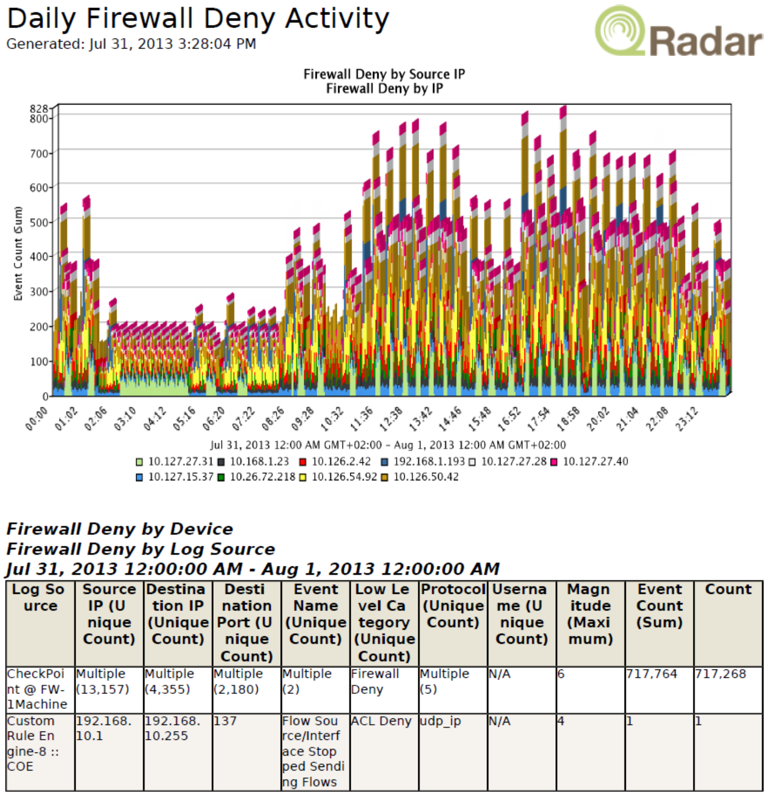
| Next Run Time | Last Modifi | Owner | Author | Generated Reports | Formats |
|---|---|---|---|---|---|
| Inactive | Sep … | admin | admin | None | |
| Inactive | Sep … | admin | admin | Jul 31, 2013 4:49 PM | |

Select a generated report from the list and click the format icon to view it

*Selecting the generated report*

QRadar SIEM generates reports one at a time. When you generate a report while another one report is generating, your report displays **Queued** in the Next Run Time column.

# Viewing a report



Daily Firewall Deny Activity

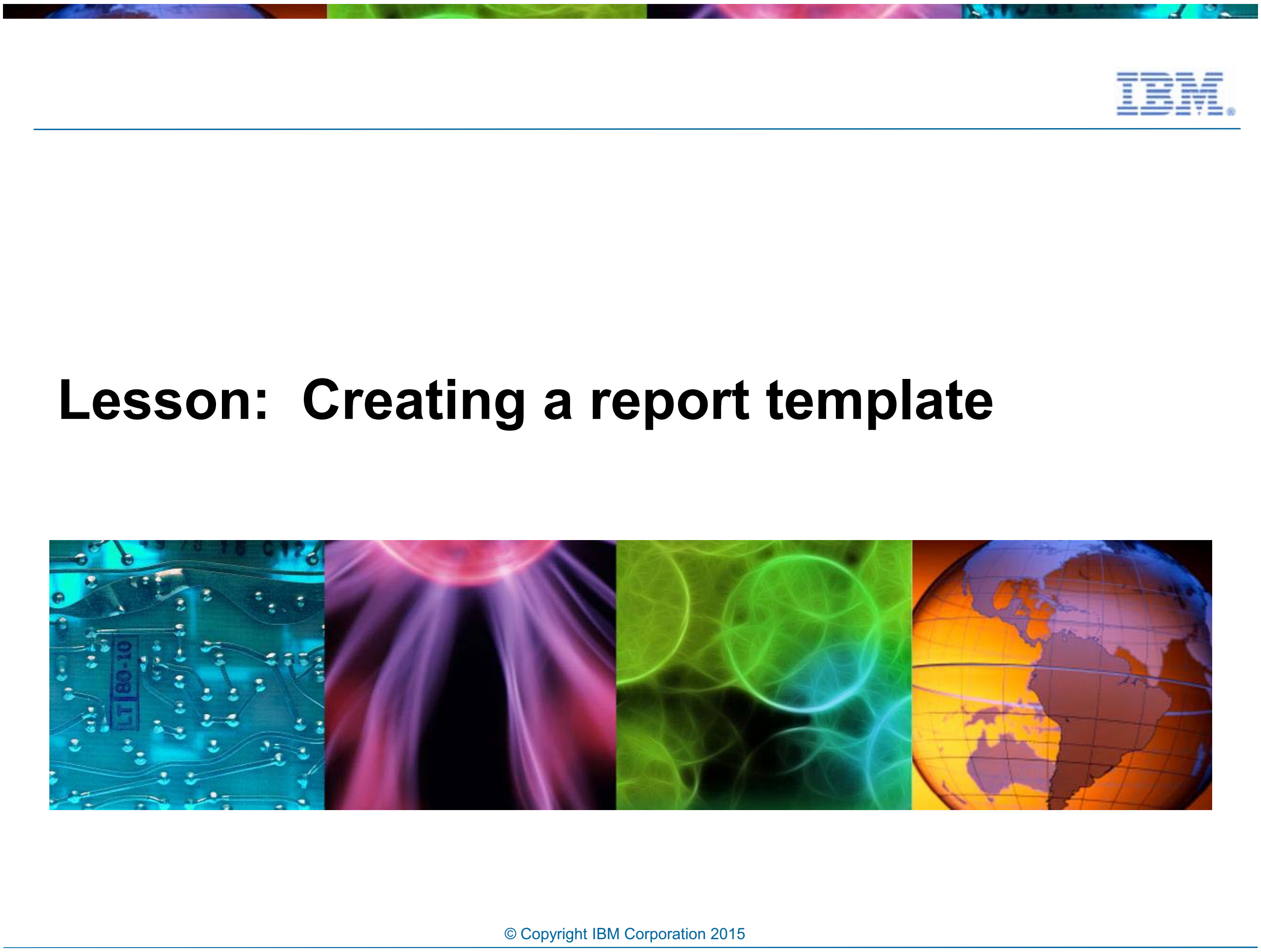
Generated: Jul 31, 2013 3:28:04 PM

***Firewall Deny by Device***
***Firewall Deny by Log Source***
***Jul 31, 2013 12:00:00 AM - Aug 1, 2013 12:00:00 AM***

| Log Source | Source IP (Unique Count) | Destination IP (Unique Count) | Destination Port (Unique Count) | Event Name (Unique Count) | Low Level Category (Unique Count) | Protocol (Unique Count) | Username (Unique Count) | Magnitude (Maximum) | Event Count (Sum) | Count |
|---|---|---|---|---|---|---|---|---|---|---|
| CheckPoint @ FW-1Machine | Multiple (13,157) | Multiple (4,355) | Multiple (2,180) | Multiple (2) | Firewall Deny | Multiple (5) | N/A | 6 | 717,764 | 717,268 |
| Custom Rule Engine-8 :: COE | 192.168.10.1 | 192.168.10.255 | 137 | Flow Source/Interface Stopped Sending Flows | ACL Deny | udp_ip | N/A | 4 | 1 | 1 |

*Viewing a report*

# Lesson 2  Creating a report template



## Lesson:  Creating a report template

If the default QRadar SIEM report templates do not meet your specific needs, you can create and save a customized report template. In this lesson, you learn how to use the Report Wizard to create a new report template and generate the report.

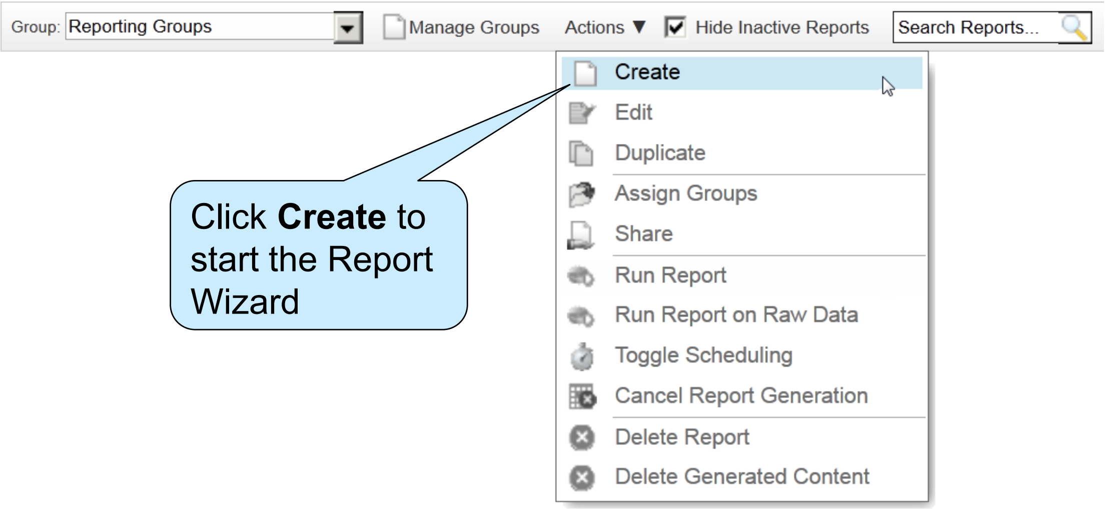
Reference: *QRadar SIEM Users Guide* http://ibm.co/1wvpSEE

# Reporting demonstration

*Reporting demonstration*

# Creating a new report template

To watch specific firewall activity in a daily report, create a custom report template

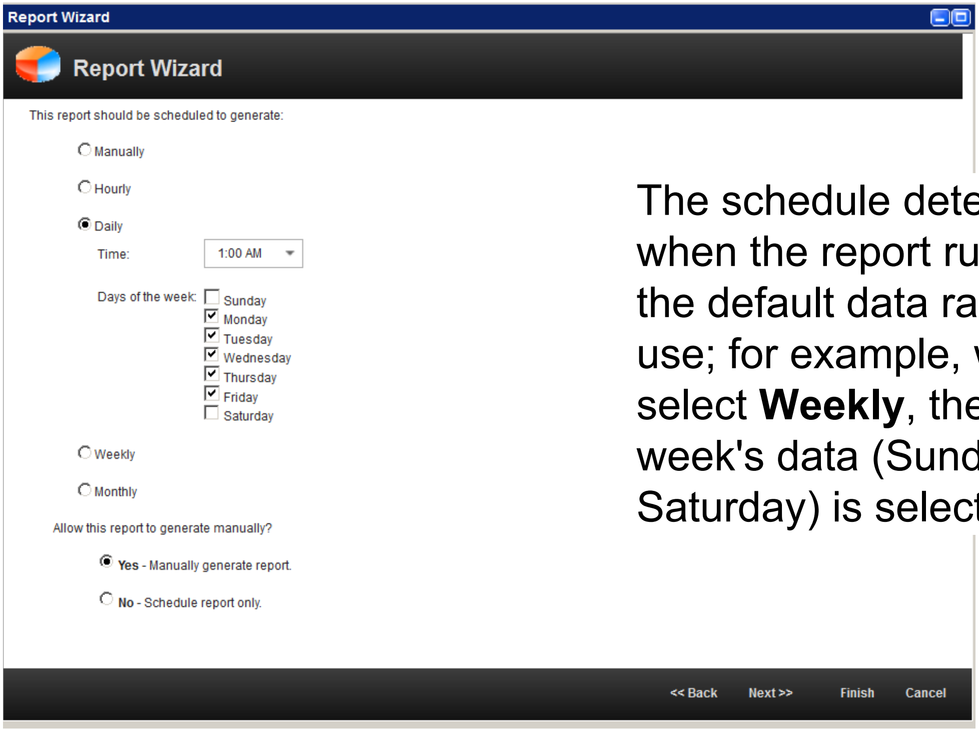


Click **Create** to start the Report Wizard

*Creating a new report template*

Click **Create** or **Edit** to open the Report Wizard.

# Choosing a schedule



This report should be scheduled to generate:

○ Manually

○ Hourly

● Daily

Time: 1:00 AM

Days of the week: ☐ Sunday<br>☑ Monday<br>☑ Tuesday<br>☑ Wednesday<br>☑ Thursday<br>☑ Friday<br>☐ Saturday

○ Weekly

○ Monthly

Allow this report to generate manually?

● **Yes** - Manually generate report.

○ **No** - Schedule report only.

The schedule determines when the report runs and the default data range to use; for example, when you select **Weekly**, the previous week's data (Sunday-Saturday) is selected

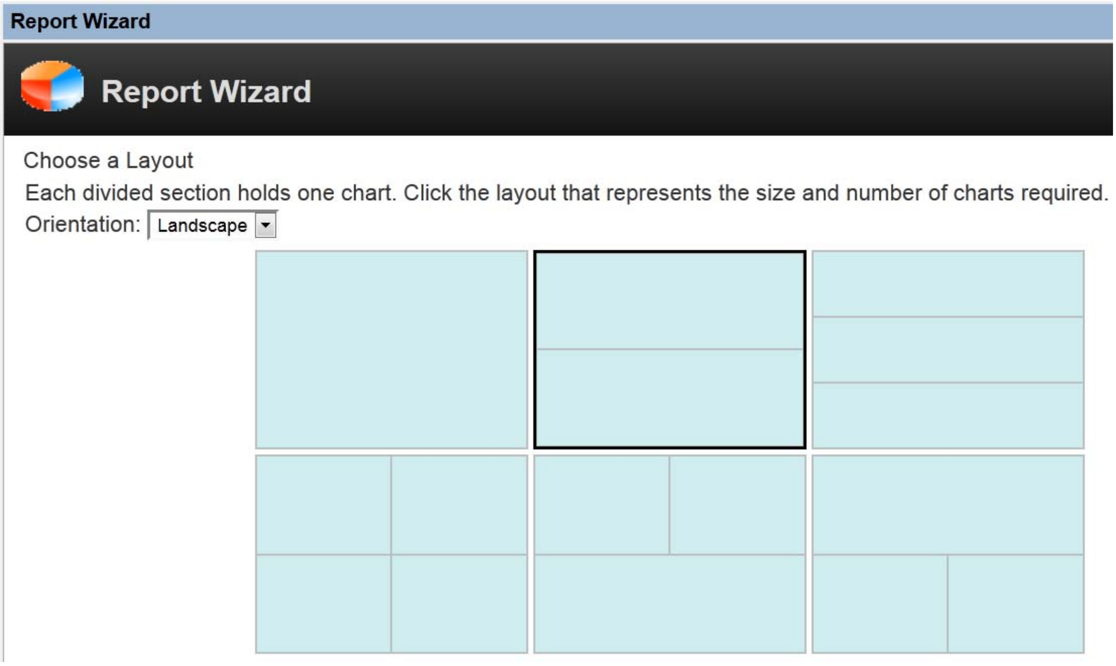
*Choosing a schedule*

Use the following options to schedule the report:

- **Manually**: QRadar SIEM generates the report only when a user initiates.
- **Hourly**: Schedules the report to generate at the end of each hour using the data from the previous hour.
- **Daily**: Schedules the report to generate daily using the data from the previous day.
- **Weekly**: Schedules the report to generate weekly using the data from the previous week.
- **Monthly**: Schedules the report to generate monthly using the data from the previous month.

# Choosing a layout

QRadar SIEM uses containers to segregate report pages so that different data sets can show on the same report page



Report Wizard

Report Wizard

Choose a Layout

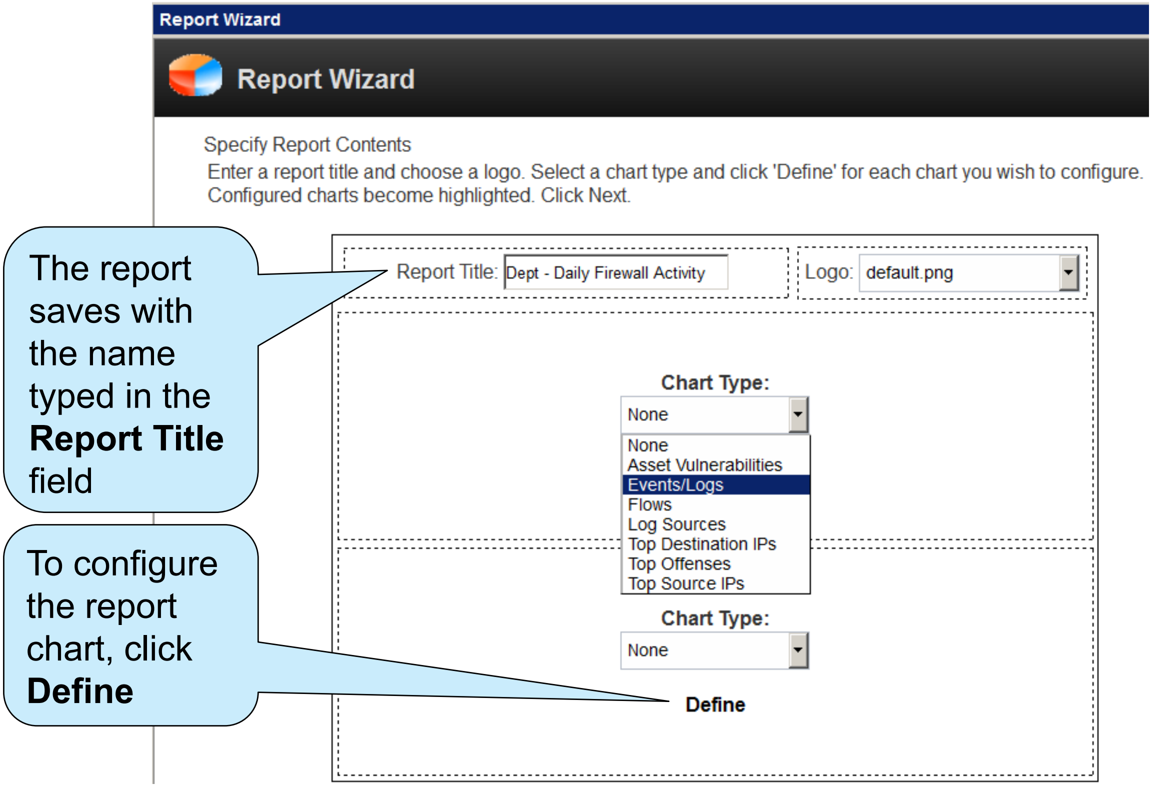
Each divided section holds one chart. Click the layout that represents the size and number of charts required.

Orientation: Landscape

*Choosing a layout*

**Hint:** When you select the layout of a report, consider the type of report you want to create. For example, do not choose a small chart container for graph content that displays a large number of objects. Each graph includes a legend and a list of networks from which the content is derived. Choose a container large enough to hold the data.

# Defining report contents



Report Wizard

Report Wizard

Specify Report Contents

Enter a report title and choose a logo. Select a chart type and click 'Define' for each chart you wish to configure. Configured charts become highlighted. Click Next.

Report Title: Dept - Daily Firewall Activity

Logo: default.png

Chart Type: None

Chart Type: None

The report saves with the name typed in the **Report Title** field

To configure the report chart, click **Define**

*Defining report contents*

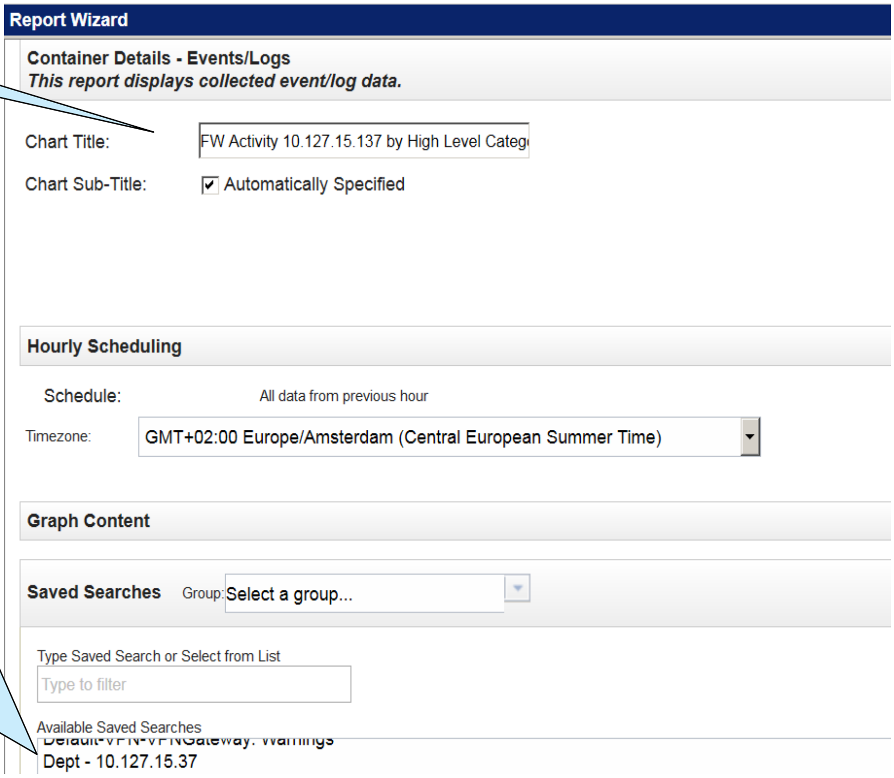
On the **Reports** tab under **Branding**, QRadar SIEM administrators can upload logos. All uploaded logos are available from the **Logo** list.

Some of the chart types include the following charts:

- **Asset Vulnerabilities**: Displays vulnerability data for defined assets in your deployment
- **Top Destination IPs**: Displays the top targeted IP addresses
- **Top Offenses**: Displays the top threat types to the managed network
- **Top Source IPs**: Displays the top IP addresses that attack any defined network or asset

# Configuring the upper chart

Enter chart title



**Report Wizard**

**Container Details - Events/Logs**
***This report displays collected event/log data.***

Chart Title: FW Activity 10.127.15.137 by High Level Categ

Chart Sub-Title: ☑ Automatically Specified

**Hourly Scheduling**

Schedule: All data from previous hour

Timezone: GMT+02:00 Europe/Amsterdam (Central European Summer Time)

**Graph Content**

**Saved Searches** Group: Select a group...

Type Saved Search or Select from List

Type to filter

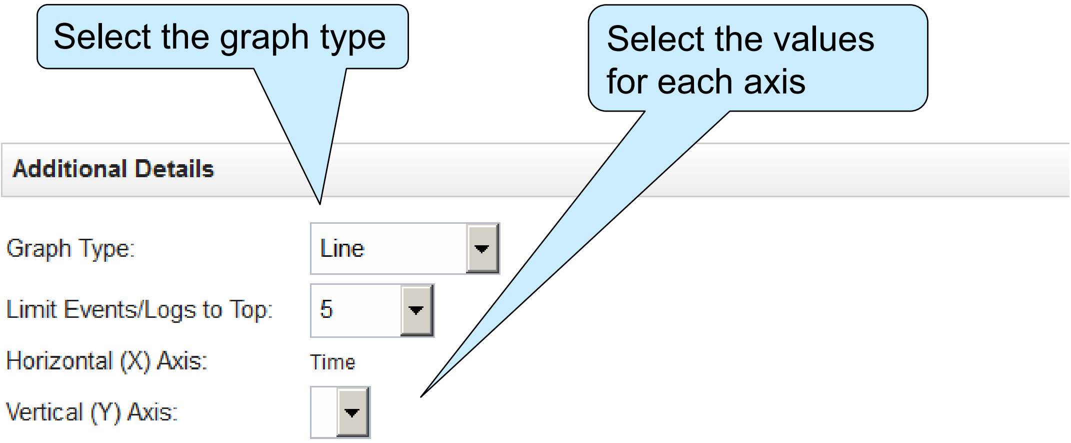
Available Saved Searches

Default-VPN-VPNGateway: Warnings
Dept - 10.127.15.37

Select the previously saved search to report firewall activity of the suspicious scanning system

*Configuring the upper chart*

# Configuring the upper chart (continued)



Select the graph type

Select the values for each axis

**Additional Details**

Graph Type: Line

Limit Events/Logs to Top: 5

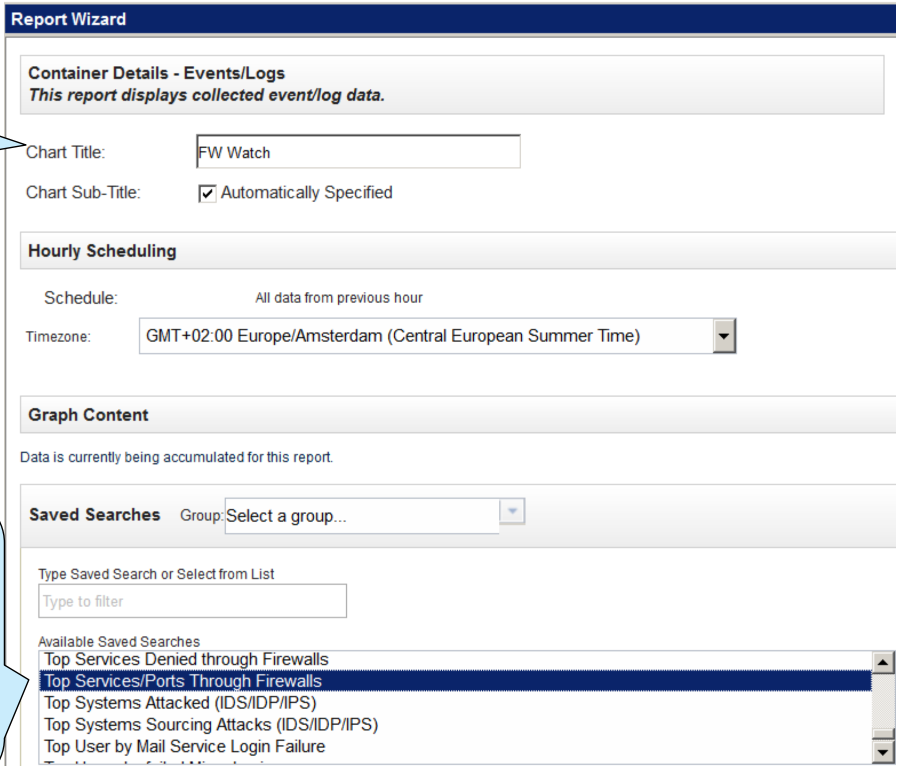
Horizontal (X) Axis: Time

Vertical (Y) Axis:

*Configuring the upper chart (continued)*

# Configuring the lower chart

Define a chart for firewall activity



**Report Wizard**

**Container Details - Events/Logs**
***This report displays collected event/log data.***

Chart Title: FW Watch

Chart Sub-Title: ☑ Automatically Specified

**Hourly Scheduling**

Schedule: All data from previous hour

Timezone: GMT+02:00 Europe/Amsterdam (Central European Summer Time)

**Graph Content**

Data is currently being accumulated for this report.

**Saved Searches** Group: Select a group...

Type Saved Search or Select from List

Type to filter

Available Saved Searches

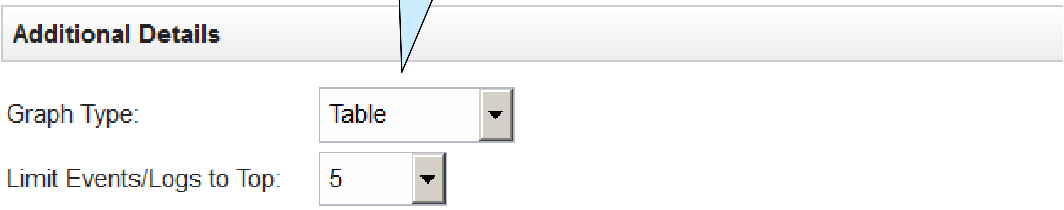
- Top Services Denied through Firewalls
- Top Services/Ports Through Firewalls
- Top Systems Attacked (IDS/IDP/IPS)
- Top Systems Sourcing Attacks (IDS/IDP/IPS)
- Top User by Mail Service Login Failure

Select a predefined search to report the top services and port numbers of traffic through firewalls

*Configuring the lower chart*

# Configuring the lower chart (continued)

Select graph type **Table** to list the reported data in a table



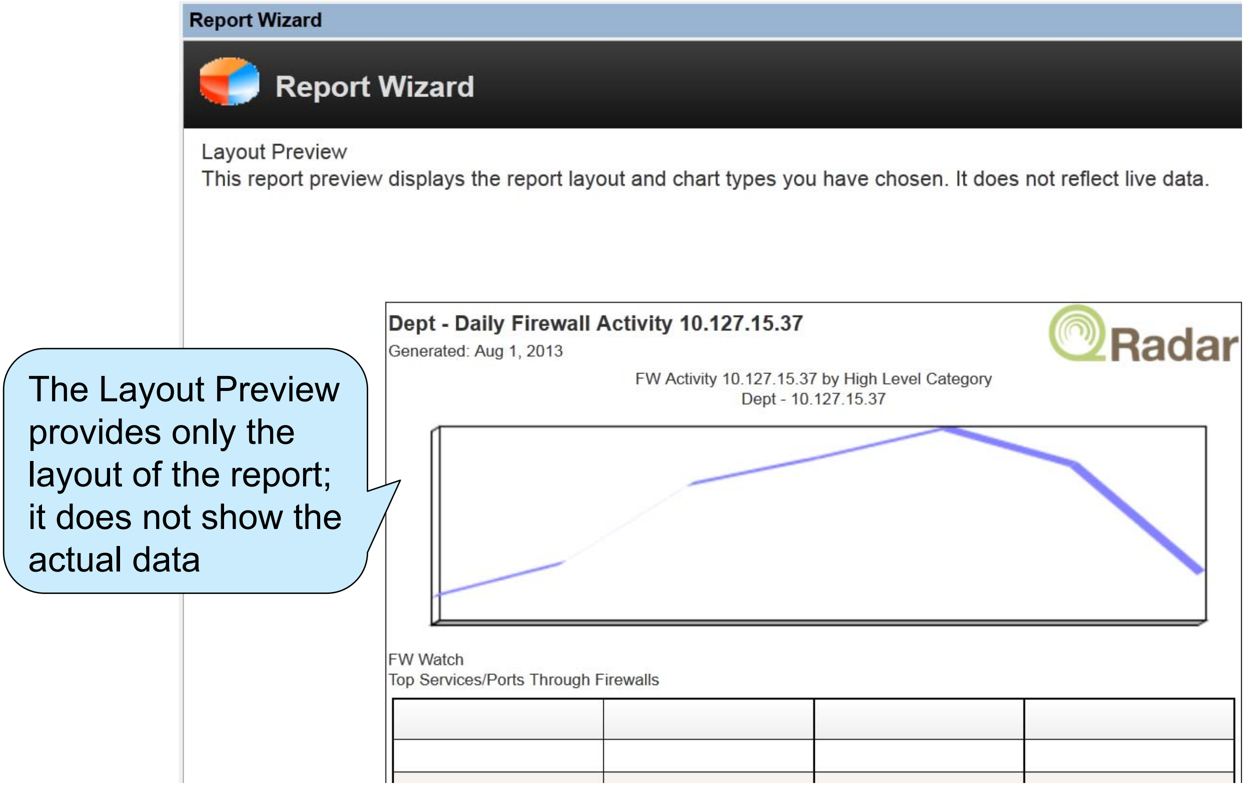
**Additional Details**

Graph Type: Table

Limit Events/Logs to Top: 5

*Configuring the lower chart (continued)*

# Verifying the layout preview



Report Wizard

Report Wizard

Layout Preview
This report preview displays the report layout and chart types you have chosen. It does not reflect live data.

Dept - Daily Firewall Activity 10.127.15.37
Generated: Aug 1, 2013

FW Activity 10.127.15.37 by High Level Category
Dept - 10.127.15.37

FW Watch
Top Services/Ports Through Firewalls

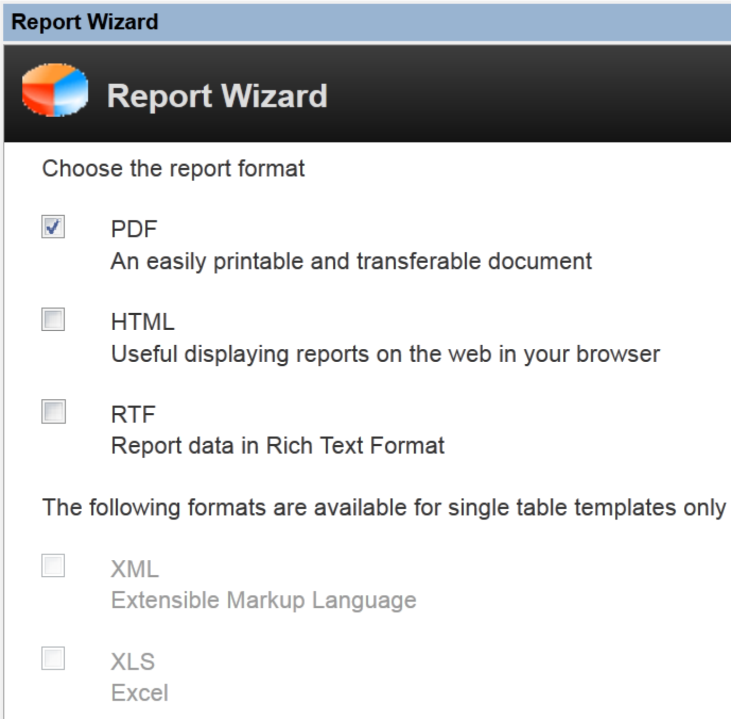
The Layout Preview provides only the layout of the report; it does not show the actual data

*Verifying the layout preview*

**Note:** Reports can take a long time to generate. Therefore, the preview helps you configure the layout correctly before running a potentially large amount of real data for a long time.

# Choosing a format

You can select any or all of the available formats for reports



Choose the report format

☑ PDF
An easily printable and transferable document

□ HTML
Useful displaying reports on the web in your browser

□ RTF
Report data in Rich Text Format

The following formats are available for single table templates only

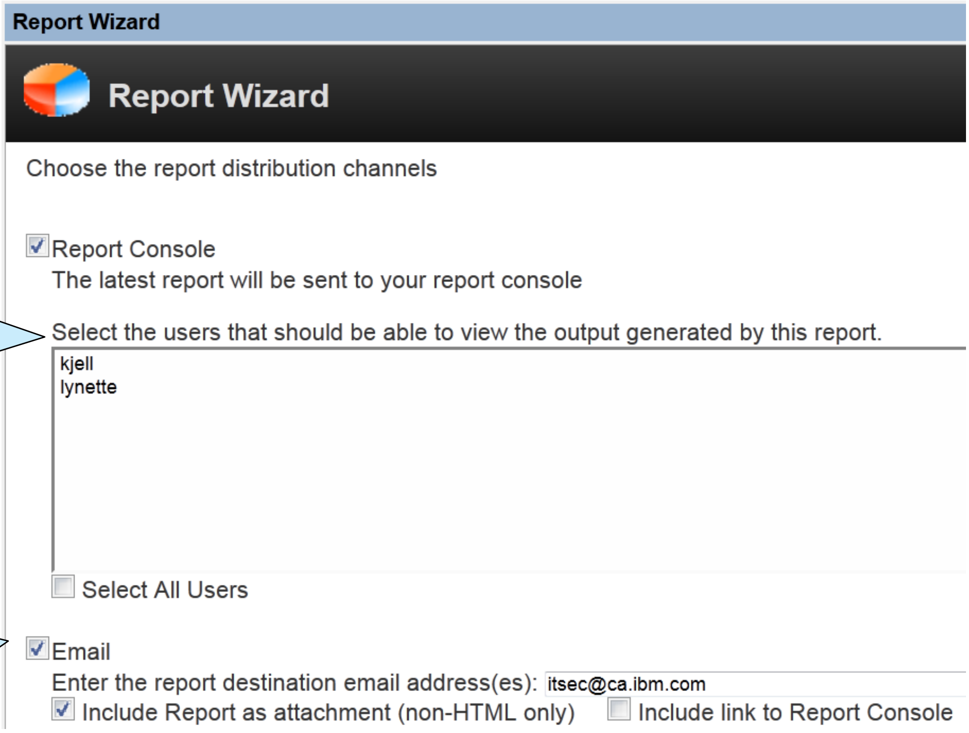
□ XML
Extensible Markup Language

□ XLS
Excel

*Choosing a format*

You will most likely use the PDF format for most of your reports, but you can also generate reports in HTML and RTF format. XML and RTF facilitate further processing and the extraction of report data.

# Distributing the report



Report Wizard

Report Wizard

Choose the report distribution channels

☑ Report Console
The latest report will be sent to your report console

Select the users that should be able to view the output generated by this report.

kjell
lynette

□ Select All Users

☑ Email
Enter the report destination email address(es): itsec@ca.ibm.com
☑ Include Report as attachment (non-HTML only)  □ Include link to Report Console

Allow users to view the generated report

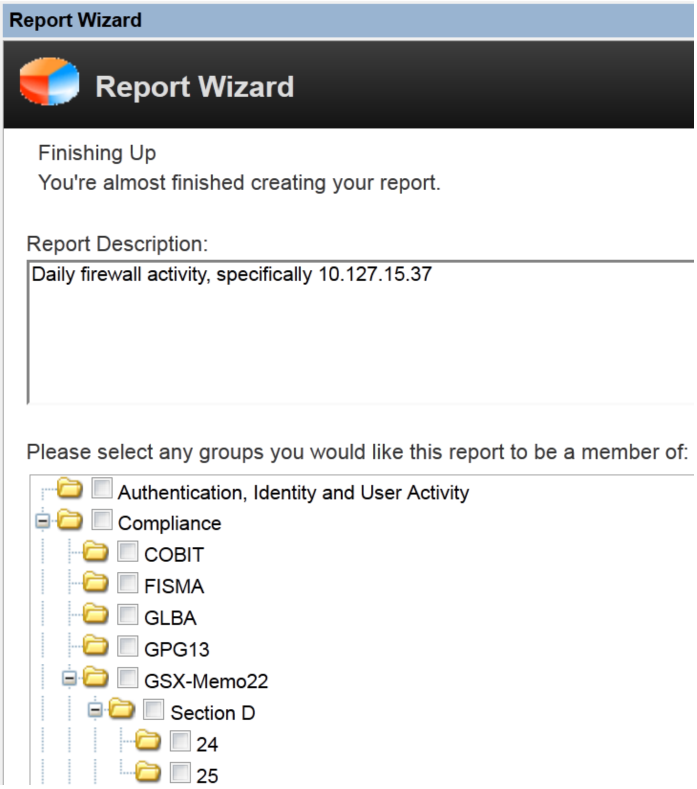
Distribute the report by email

*Distributing the report*

**Note:** You can distribute the report to multiple email addresses. Use commas to separate email addresses listed in the **Enter the report destination email address(es)** field.

# Adding a description and assigning the group

- You can organize reports by groups much like rules and log sources
- You can use reporting groups to sort report templates by purpose, such as a specific regulatory or executive requirement


Report Wizard

Report Wizard

Finishing Up
You're almost finished creating your report.

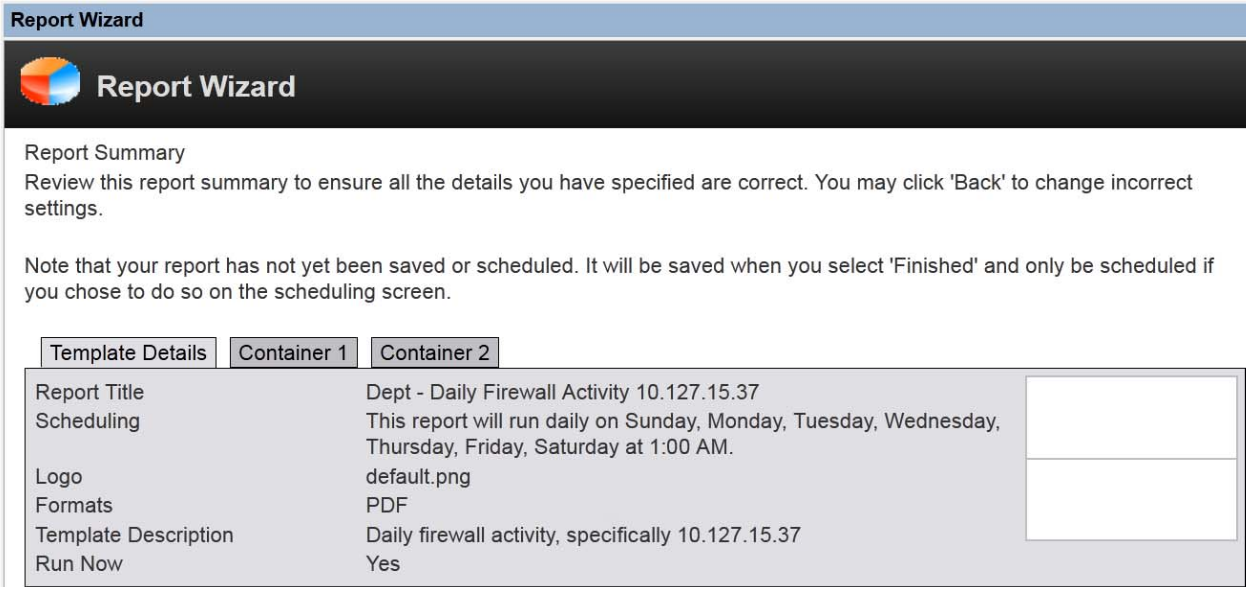
Report Description:
Daily firewall activity, specifically 10.127.15.37

Please select any groups you would like this report to be a member of:

- □ Authentication, Identity and User Activity
- □ Compliance
  - □ COBIT
  - □ FISMA
  - □ GLBA
  - □ GPG13
  - □ GSX-Memo22
    - □ Section D
      - □ 24
      - □ 25

*Adding a description and assigning the group*

# Verifying the report summary



Report Wizard

Report Summary

Review this report summary to ensure all the details you have specified are correct. You may click 'Back' to change incorrect settings.

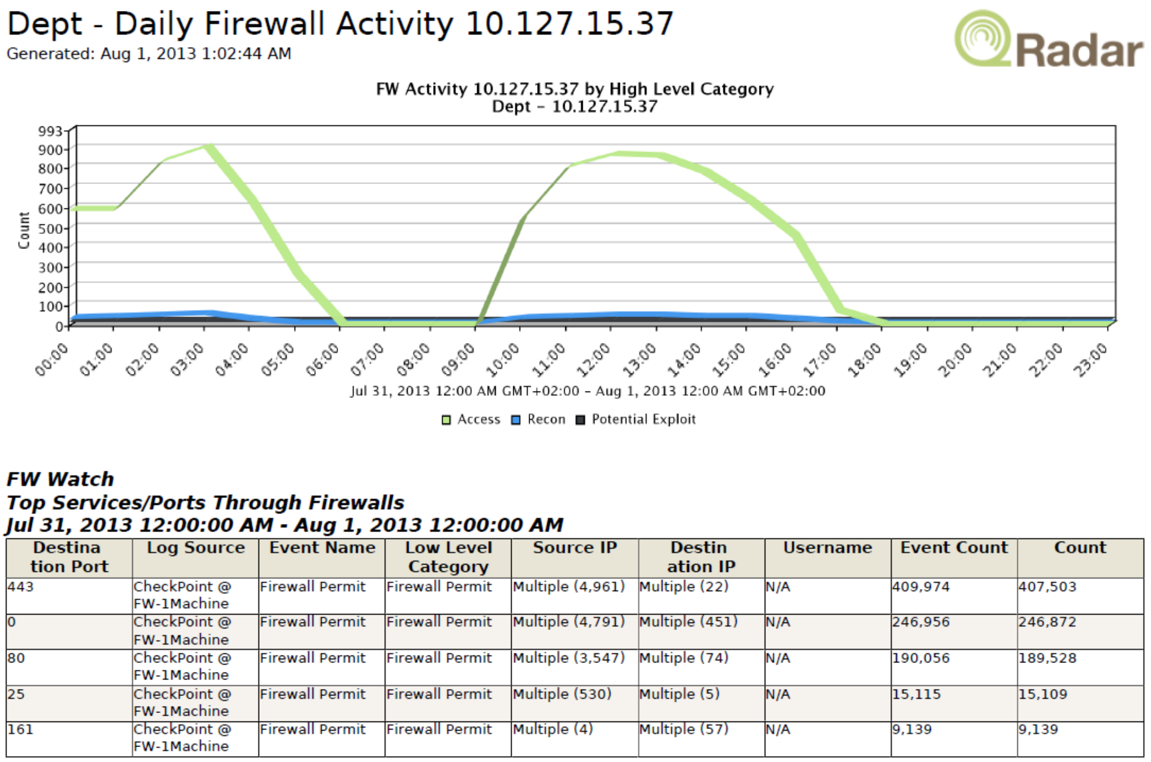
Note that your report has not yet been saved or scheduled. It will be saved when you select 'Finished' and only be scheduled if you chose to do so on the scheduling screen.

| | |
|---|---|
| Report Title | Dept - Daily Firewall Activity 10.127.15.37 |
| Scheduling | This report will run daily on Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday at 1:00 AM. |
| Logo | default.png |
| Formats | PDF |
| Template Description | Daily firewall activity, specifically 10.127.15.37 |
| Run Now | Yes |

Review the report settings

*Verifying the report summary*

# Viewing the generated report



Dept - Daily Firewall Activity 10.127.15.37

Generated: Aug 1, 2013 1:02:44 AM

***FW Watch***
***Top Services/Ports Through Firewalls***
***Jul 31, 2013 12:00:00 AM - Aug 1, 2013 12:00:00 AM***

| Destination Port | Log Source | Event Name | Low Level Category | Source IP | Destination IP | Username | Event Count | Count |
|---|---|---|---|---|---|---|---|---|
| 443 | CheckPoint @ FW-1Machine | Firewall Permit | Firewall Permit | Multiple (4,961) | Multiple (22) | N/A | 409,974 | 407,503 |
| 0 | CheckPoint @ FW-1Machine | Firewall Permit | Firewall Permit | Multiple (4,791) | Multiple (451) | N/A | 246,956 | 246,872 |
| 80 | CheckPoint @ FW-1Machine | Firewall Permit | Firewall Permit | Multiple (3,547) | Multiple (74) | N/A | 190,056 | 189,528 |
| 25 | CheckPoint @ FW-1Machine | Firewall Permit | Firewall Permit | Multiple (530) | Multiple (5) | N/A | 15,115 | 15,109 |
| 161 | CheckPoint @ FW-1Machine | Firewall Permit | Firewall Permit | Multiple (4) | Multiple (57) | N/A | 9,139 | 9,139 |

*Viewing the generated report*

The example report on the slide is useful for security analysts who investigate or watch activities. The upper chart displays firewall denies from the local system 10.127.15.37. The lower table displays firewall permits from remote sources to all local systems.

The lower table provides you with an overview of the services and ports used remotely through your firewall. The destination port is 0 for layer 3 protocol traffic such as ICMP. If you were analyzing this report, notice that the lower table displays firewall permits from remote sources to the SNMP port 161. Perhaps this is legitimate traffic from a system management provider to port 161 on some internal systems. As an analyst, this type of information is something to verify.

You can also create or activate reports for regulatory compliance and system performance.

## Best practices when creating reports

- For comparison and review, present network traffic charts and event tables together
- Consider the purpose of the report and choose the least number of page containers that is necessary to communicate the data
- Do not choose a small page division for a graph that might contain a large number of objects
- Executive summary reports use one-page or two-page divisions to simplify the report focus

*Best practices when creating reports*

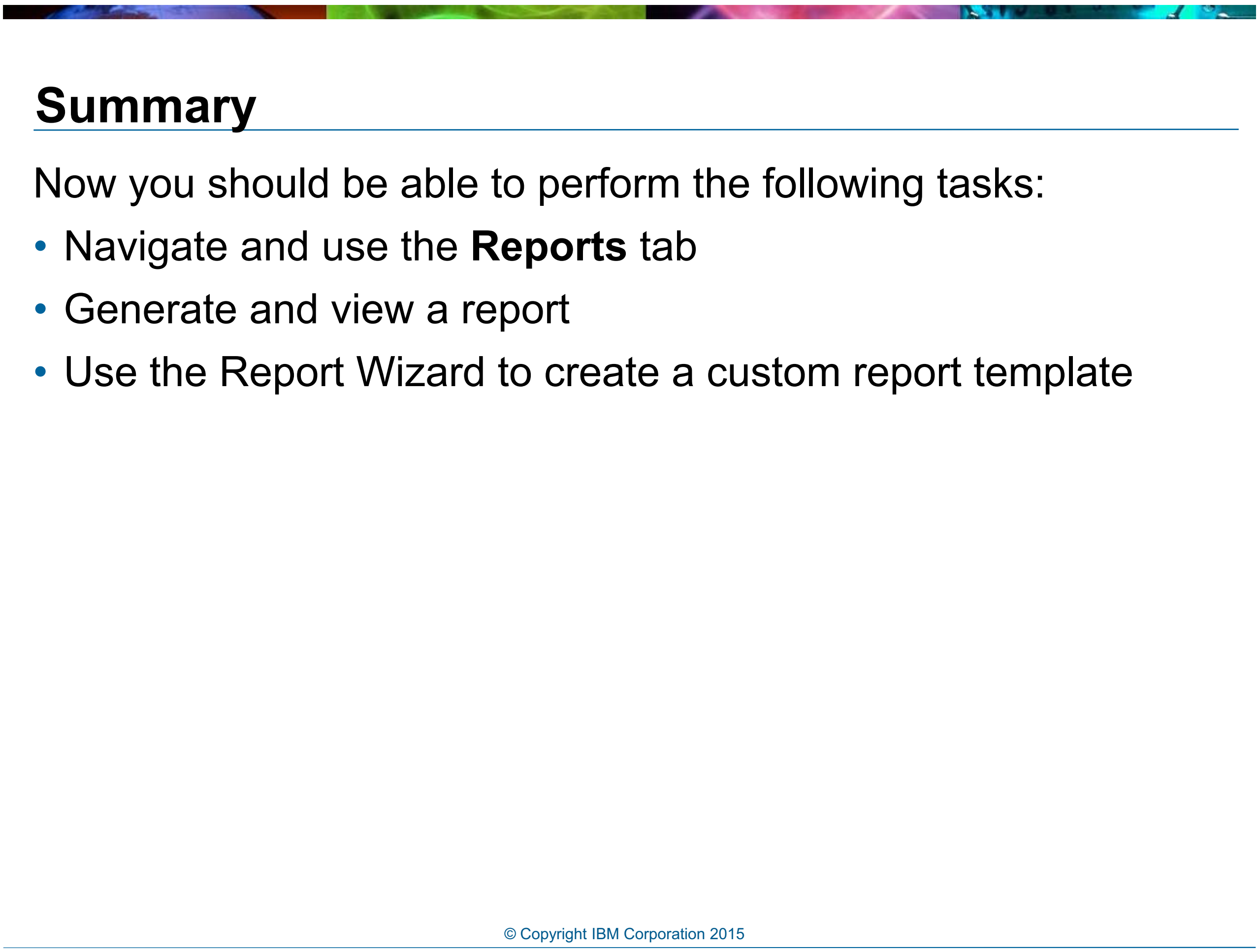
## Student exercises

Use the procedures in the *Student Exercises Guide* to perform the following tasks

- View an existing report
- Create a new event report
- Create new search and report

*Student exercises*

Perform the exercises for this unit.



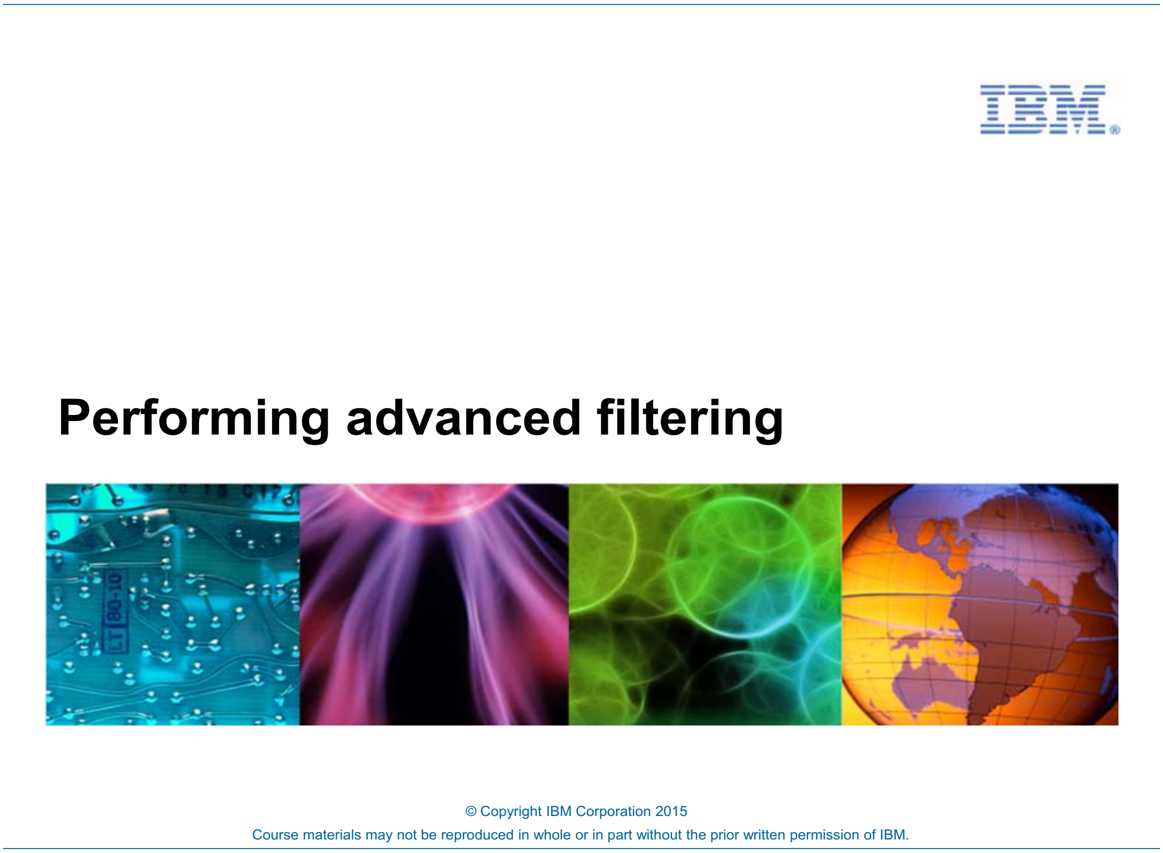
## Summary

Now you should be able to perform the following tasks:

- Navigate and use the **Reports** tab
- Generate and view a report
- Use the Report Wizard to create a custom report template

*Summary*

# 10 Performing advanced filtering

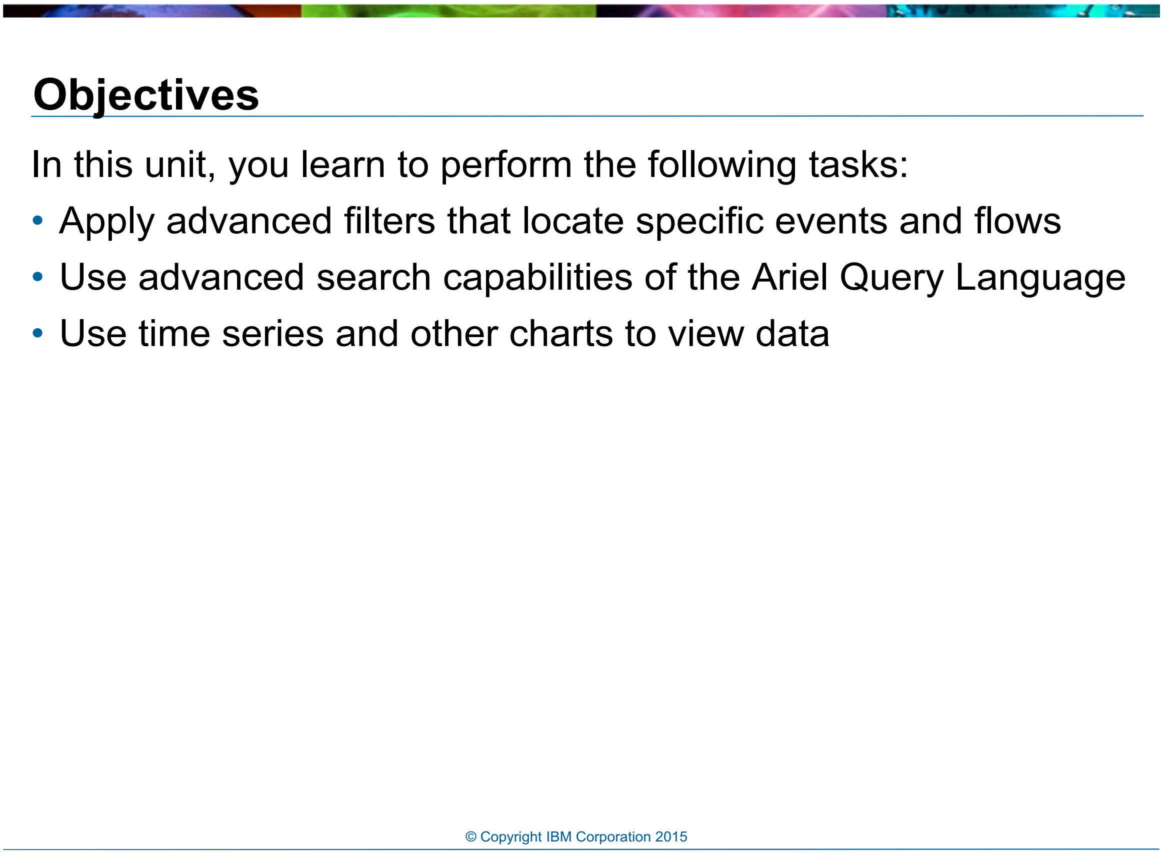


## Performing advanced filtering

QRadar SIEM provides several filters that you can apply to identify suspicious or non-standard behavior. Bar, pie, table, and time-series charts visualize security data. This unit teaches you how to use charts and apply advanced filters to examine specific activities in your environment.

Reference: *QRadar SIEM Users Guide* http://ibm.co/1wvpSEE

This unit has no student exercises.



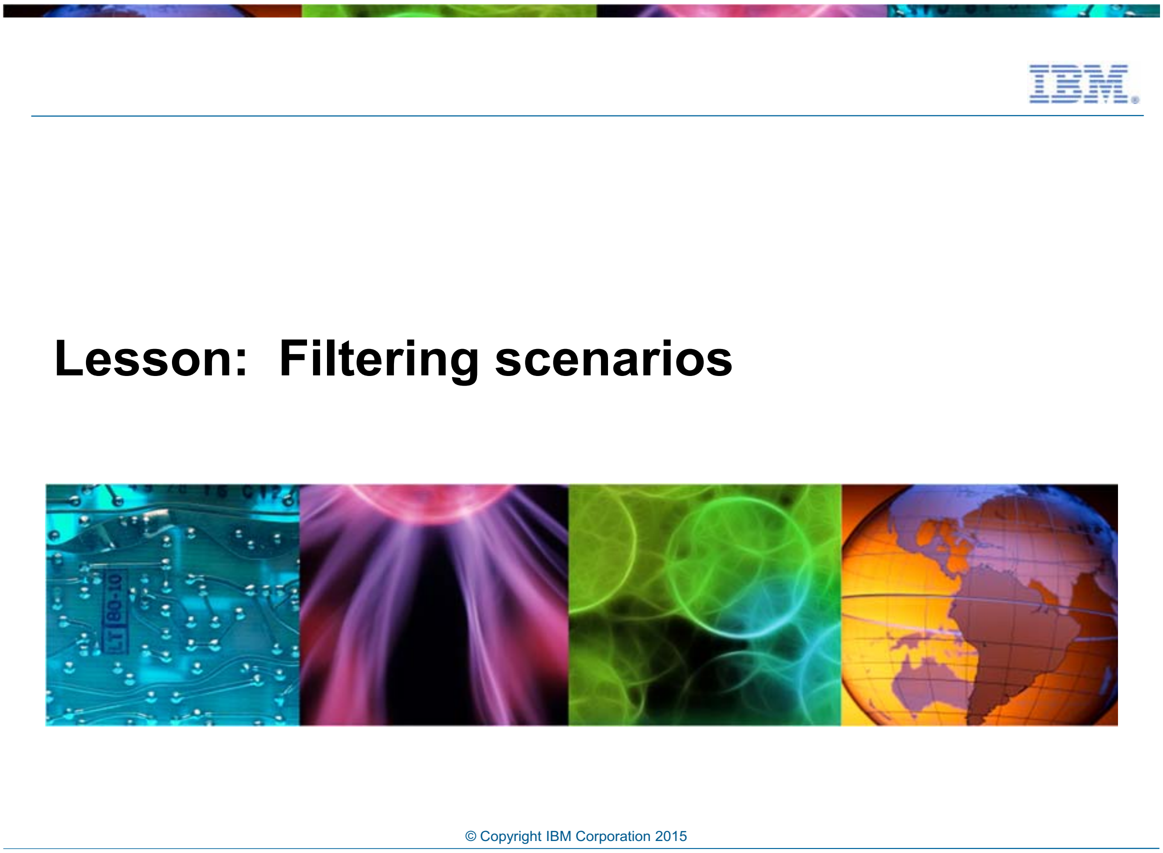
# Objectives

In this unit, you learn to perform the following tasks:

- Apply advanced filters that locate specific events and flows
- Use advanced search capabilities of the Ariel Query Language
- Use time series and other charts to view data

*Objectives*

# Lesson 1  Filtering scenarios



## Lesson:  Filtering scenarios

The events and flows collected by QRadar SIEM provide a great deal of information about the activities in your environment. In this lesson, you learn how to apply advanced filters to look for specific activities.

Reference: *QRadar SIEM Users Guide* http://ibm.co/1wvpSEE

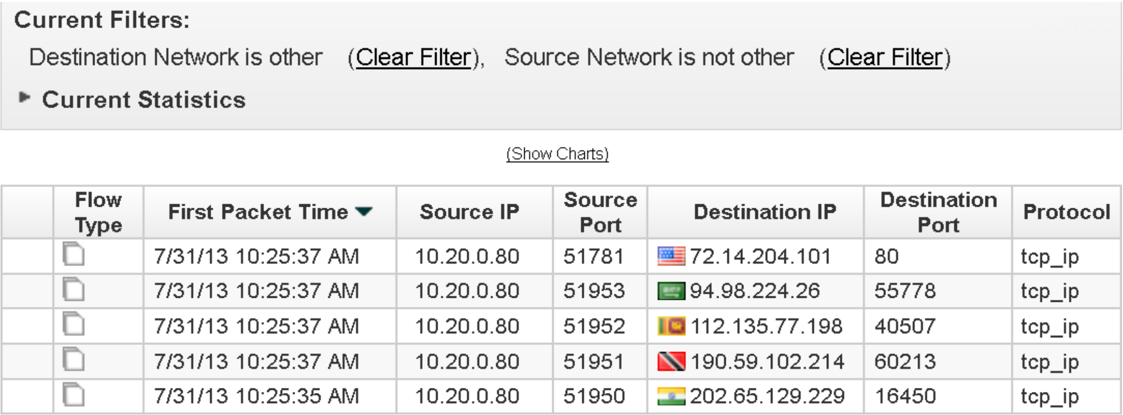
## Filtering demonstration

This demonstration illustrates the scenarios described in this lesson

*Filtering demonstration*

## Flows to external destinations

- Flows originate in the local network and connect to an external network
- Filters
  - **Source Network is not other**
  - **Destination Network is other**



**Current Filters:**

Destination Network is other (Clear Filter), Source Network is not other (Clear Filter)

▸ **Current Statistics**

(Show Charts)

| | Flow Type | First Packet Time ▼ | Source IP | Source Port | Destination IP | Destination Port | Protocol |
|---|---|---|---|---|---|---|---|
| | | 7/31/13 10:25:37 AM | 10.20.0.80 | 51781 | 72.14.204.101 | 80 | tcp_ip |
| | | 7/31/13 10:25:37 AM | 10.20.0.80 | 51953 | 94.98.224.26 | 55778 | tcp_ip |
| | | 7/31/13 10:25:37 AM | 10.20.0.80 | 51952 | 112.135.77.198 | 40507 | tcp_ip |
| | | 7/31/13 10:25:37 AM | 10.20.0.80 | 51951 | 190.59.102.214 | 60213 | tcp_ip |
| | | 7/31/13 10:25:35 AM | 10.20.0.80 | 51950 | 202.65.129.229 | 16450 | tcp_ip |

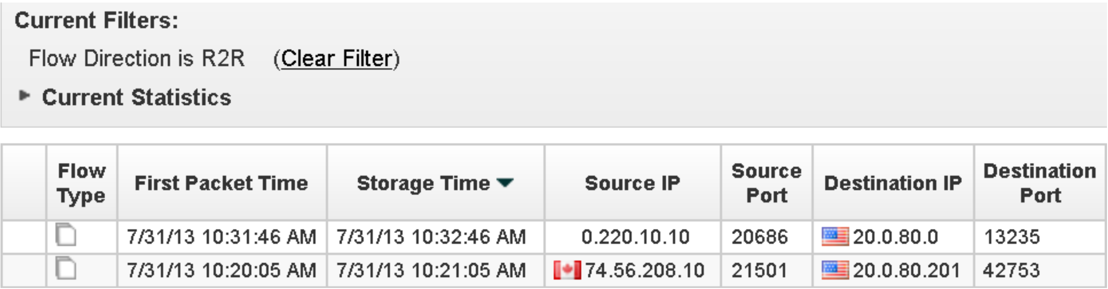
*Flows to external destinations*

**Note:** You get the same results by using the **L2R** Flow Direction filter.

# Remote to Remote flows

- Flows originate in the local network and connect to an external network
- Filter

  **Flow Direction is R2R**



**Current Filters:**

Flow Direction is R2R (Clear Filter)

▸ **Current Statistics**

| | Flow Type | First Packet Time | Storage Time ▾ | Source IP | Source Port | Destination IP | Destination Port |
|---|---|---|---|---|---|---|---|
| | 🗋 | 7/31/13 10:31:46 AM | 7/31/13 10:32:46 AM | 0.220.10.10 | 20686 | 20.0.80.0 | 13235 |
| | 🗋 | 7/31/13 10:20:05 AM | 7/31/13 10:21:05 AM | 74.56.208.10 | 21501 | 20.0.80.201 | 42753 |

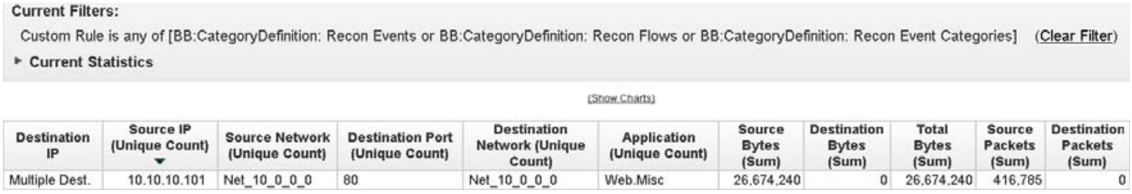
**Note:** In a properly configured network, you do not see R2R flows

*Remote to Remote flows*

## Scanning activity

- Filtering rules help locate inappropriate traffic such as scanning activity
- Filter

  **Custom Rule is any of:**
  **BB:Category Definition: Recon Events**, or
  **BB:Category Definition: Recon Flows**, or
  **BB:Category Definition: Recon Event Categories**



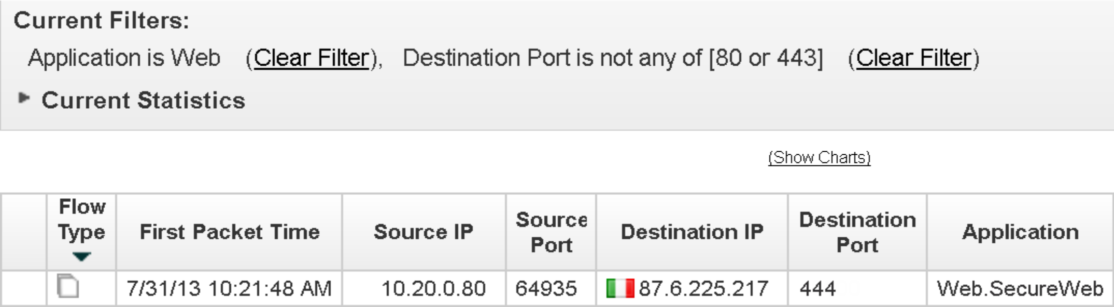
**Current Filters:**
Custom Rule is any of [BB:CategoryDefinition: Recon Events or BB:CategoryDefinition: Recon Flows or BB:CategoryDefinition: Recon Event Categories] (Clear Filter)
▸ **Current Statistics**

| Destination IP | Source IP (Unique Count) | Source Network (Unique Count) | Destination Port (Unique Count) | Destination Network (Unique Count) | Application (Unique Count) | Source Bytes (Sum) | Destination Bytes (Sum) | Total Bytes (Sum) | Source Packets (Sum) | Destination Packets (Sum) |
|---|---|---|---|---|---|---|---|---|---|---|
| Multiple Dest. | 10.10.10.101 | Net_10_0_0_0 | 80 | Net_10_0_0_0 | Web.Misc | 26,674,240 | 0 | 26,674,240 | 416,785 | 0 |

*Scanning activity*

## Applications not running on the correct port

- Filters can identify applications running on nonstandard ports
- Filters
  - **Application is Web**
  - **Destination Port is not any of 80, 443**



**Current Filters:**

Application is Web (Clear Filter), Destination Port is not any of [80 or 443] (Clear Filter)

▸ **Current Statistics**

(Show Charts)

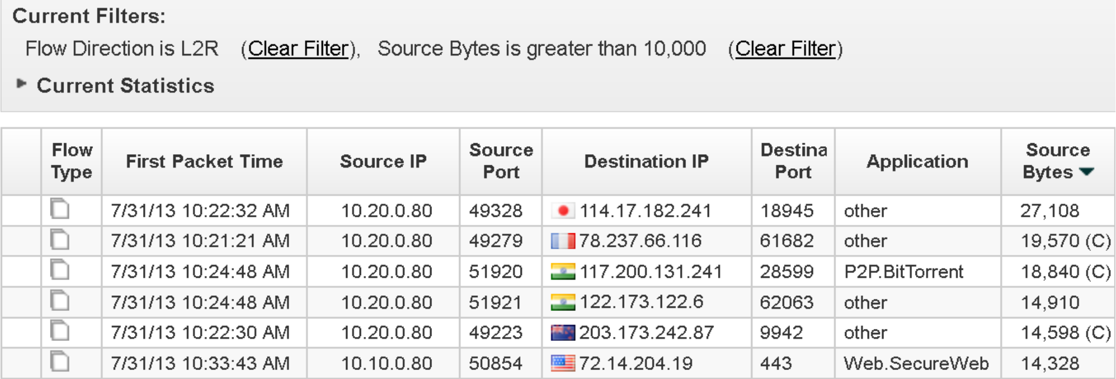
| | Flow Type | First Packet Time | Source IP | Source Port | Destination IP | Destination Port | Application |
|---|---|---|---|---|---|---|---|
| | ☐ | 7/31/13 10:21:48 AM | 10.20.0.80 | 64935 | 87.6.225.217 | 444 | Web.SecureWeb |

**Note:** Use a similar filter to identify nonweb flows, such as botnet traffic, on port 80

*Applications not running on the correct port*

## Data loss

- Filters can identify large amounts of data leaving the network
- Filters
  - **Flow Direction is L2R**
  - **Source Bytes greater than <*threshold*>**



**Current Filters:**

Flow Direction is L2R (Clear Filter), Source Bytes is greater than 10,000 (Clear Filter)

▸ **Current Statistics**

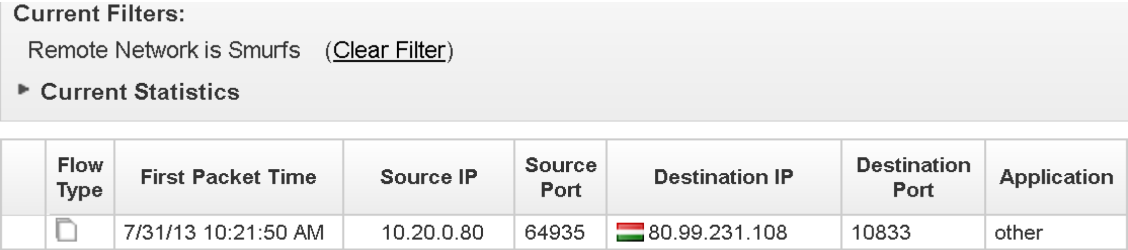
| | Flow Type | First Packet Time | Source IP | Source Port | Destination IP | Destina Port | Application | Source Bytes ▼ |
|---|---|---|---|---|---|---|---|---|
| | □ | 7/31/13 10:22:32 AM | 10.20.0.80 | 49328 | 114.17.182.241 | 18945 | other | 27,108 |
| | □ | 7/31/13 10:21:21 AM | 10.20.0.80 | 49279 | 78.237.66.116 | 61682 | other | 19,570 (C) |
| | □ | 7/31/13 10:24:48 AM | 10.20.0.80 | 51920 | 117.200.131.241 | 28599 | P2P.BitTorrent | 18,840 (C) |
| | □ | 7/31/13 10:24:48 AM | 10.20.0.80 | 51921 | 122.173.122.6 | 62063 | other | 14,910 |
| | □ | 7/31/13 10:22:30 AM | 10.20.0.80 | 49223 | 203.173.242.87 | 9942 | other | 14,598 (C) |
| | □ | 7/31/13 10:33:43 AM | 10.10.0.80 | 50854 | 72.14.204.19 | 443 | Web.SecureWeb | 14,328 |

**Note:** Choose an appropriate threshold value for your environment

*Data loss*

# Flows to suspect Internet addresses

- Filters can identify flows to suspect Internet addresses
- Filters
  - **Remote Network**
  - **Remote Service**



**Current Filters:**

Remote Network is Smurfs (Clear Filter)

▸ **Current Statistics**

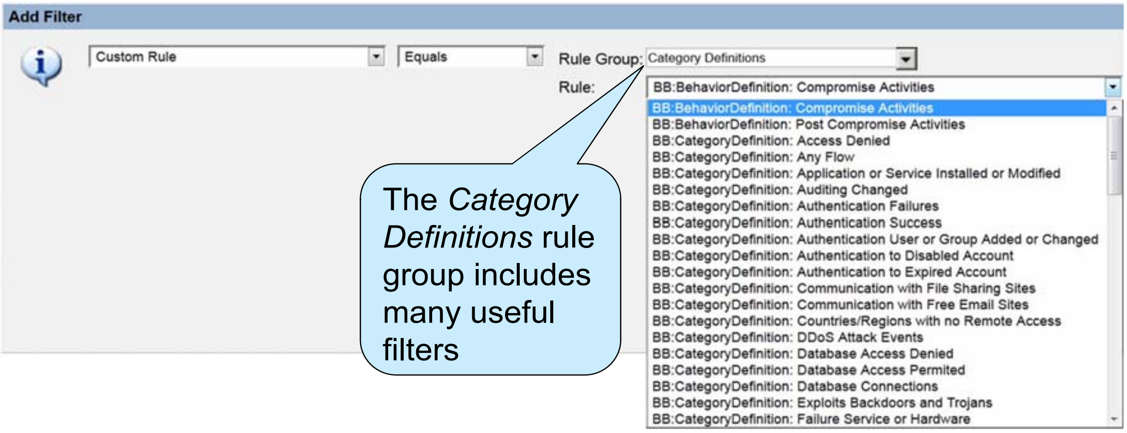
| | Flow Type | First Packet Time | Source IP | Source Port | Destination IP | Destination Port | Application |
|---|---|---|---|---|---|---|---|
| | □ | 7/31/13 10:21:50 AM | 10.20.0.80 | 64935 | 80.99.231.108 | 10833 | other |

**Note**: Using the **Remote Networks** and **Remote Services** filters, QRadar SIEM administrators can identify customers and trusted networks and malware sources

*Flows to suspect Internet addresses*

## Filtering on custom rules and building blocks

- When events or flows match a custom rule or building block, they are tagged with that rule
- You can filter on these tagged events and flows; such filters are useful for creating reports



Add Filter

Custom Rule | Equals | Rule Group: Category Definitions

Rule: BB:BehaviorDefinition: Compromise Activities

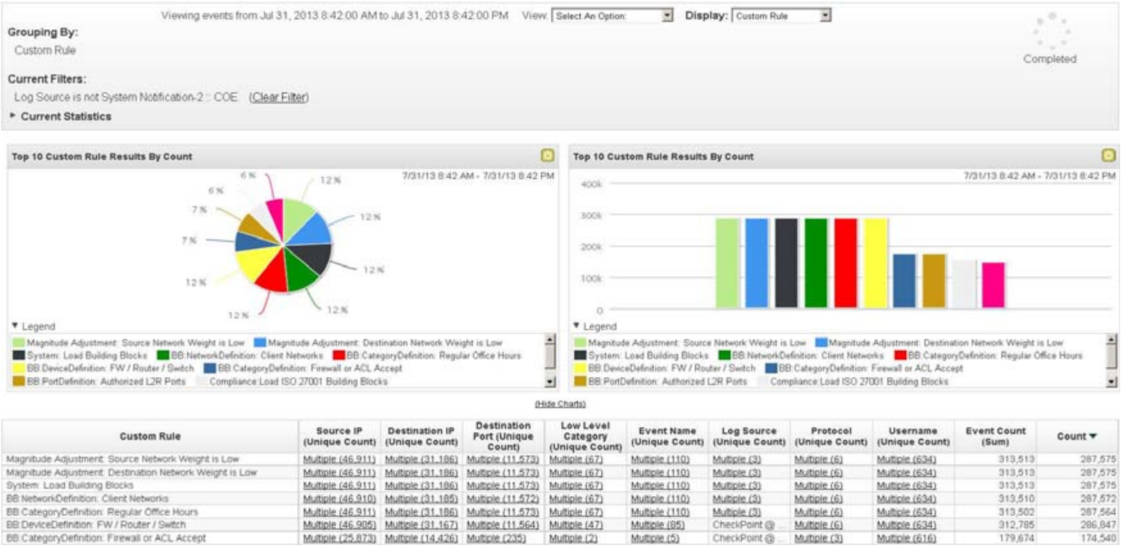
BB:BehaviorDefinition: Compromise Activities
BB:BehaviorDefinition: Post Compromise Activities
BB:CategoryDefinition: Access Denied
BB:CategoryDefinition: Any Flow
BB:CategoryDefinition: Application or Service Installed or Modified
BB:CategoryDefinition: Auditing Changed
BB:CategoryDefinition: Authentication Failures
BB:CategoryDefinition: Authentication Success
BB:CategoryDefinition: Authentication User or Group Added or Changed
BB:CategoryDefinition: Authentication to Disabled Account
BB:CategoryDefinition: Authentication to Expired Account
BB:CategoryDefinition: Communication with File Sharing Sites
BB:CategoryDefinition: Communication with Free Email Sites
BB:CategoryDefinition: Countries/Regions with no Remote Access
BB:CategoryDefinition: DDoS Attack Events
BB:CategoryDefinition: Database Access Denied
BB:CategoryDefinition: Database Access Permited
BB:CategoryDefinition: Database Connections
BB:CategoryDefinition: Exploits Backdoors and Trojans
BB:CategoryDefinition: Failure Service or Hardware

The *Category Definitions* rule group includes many useful filters

*Filtering on custom rules and building blocks*

# Grouping by custom rules

Group events and flows by custom rules; this feature is useful when you investigate offenses


Top 10 Custom Rule Results By Count
7/31/13 8:42 AM - 7/31/13 8:42 PM
6 %
6 %
7 %
7 %
12 %
12 %
12 %
12 %
12 %
12 %
Top 10 Custom Rule Results By Count
7/31/13 8:42 AM - 7/31/13 8:42 PM
400k
300k
200k
100k
0
▾ Legend
🟩 Magnitude Adjustment: Source Network Weight is Low
🟦 Magnitude Adjustment: Destination Network Weight is Low
⬛ System: Load Building Blocks
🟩 BB:NetworkDefinition: Client Networks
🟥 BB:CategoryDefinition: Regular Office Hours
🟨 BB:DeviceDefinition: FW / Router / Switch
🟦 BB:CategoryDefinition: Firewall or ACL Accept
🟫 BB:PortDefinition: Authorized L2R Ports
⬜ Compliance:Load ISO 27001 Building Blocks
(Hide Charts)

Viewing events from Jul 31, 2013 8:42:00 AM to Jul 31, 2013 8:42:00 PM View: Select An Option: Display: Custom Rule

Grouping By:
Custom Rule

Completed

Current Filters:
Log Source is not System Notification-2 :: COE (Clear Filter)

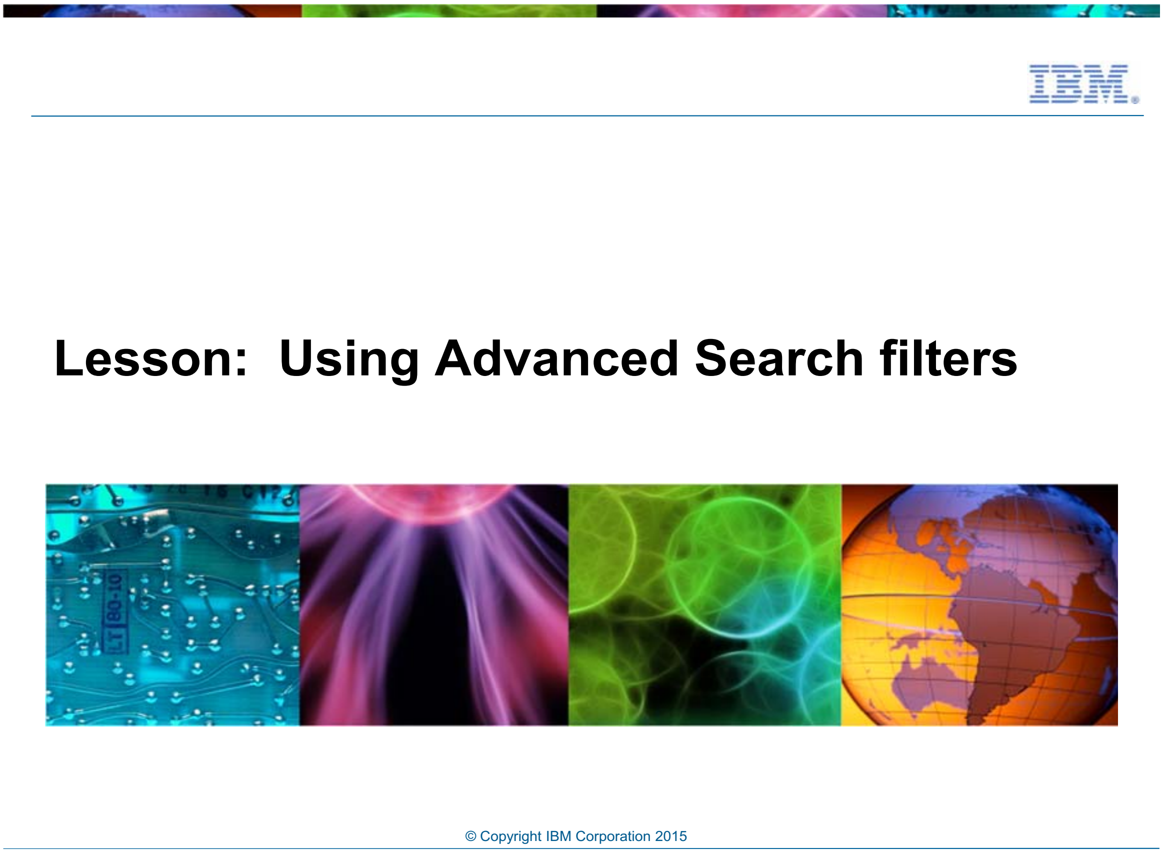
▸ Current Statistics

| Custom Rule | Source IP (Unique Count) | Destination IP (Unique Count) | Destination Port (Unique Count) | Low Level Category (Unique Count) | Event Name (Unique Count) | Log Source (Unique Count) | Protocol (Unique Count) | Username (Unique Count) | Event Count (Sum) | Count ▾ |
|---|---|---|---|---|---|---|---|---|---|---|
| Magnitude Adjustment: Source Network Weight is Low | Multiple (46,911) | Multiple (31,186) | Multiple (11,573) | Multiple (67) | Multiple (110) | Multiple (3) | Multiple (6) | Multiple (634) | 313,513 | 287,575 |
| Magnitude Adjustment: Destination Network Weight is Low | Multiple (46,911) | Multiple (31,186) | Multiple (11,573) | Multiple (67) | Multiple (110) | Multiple (3) | Multiple (6) | Multiple (634) | 313,513 | 287,575 |
| System: Load Building Blocks | Multiple (46,911) | Multiple (31,186) | Multiple (11,573) | Multiple (67) | Multiple (110) | Multiple (3) | Multiple (6) | Multiple (634) | 313,513 | 287,575 |
| BB:NetworkDefinition: Client Networks | Multiple (46,910) | Multiple (31,185) | Multiple (11,572) | Multiple (67) | Multiple (110) | Multiple (3) | Multiple (6) | Multiple (634) | 313,510 | 287,572 |
| BB:CategoryDefinition: Regular Office Hours | Multiple (46,911) | Multiple (31,186) | Multiple (11,573) | Multiple (67) | Multiple (110) | Multiple (3) | Multiple (6) | Multiple (634) | 313,502 | 287,564 |
| BB:DeviceDefinition: FW / Router / Switch | Multiple (46,905) | Multiple (31,167) | Multiple (11,564) | Multiple (47) | Multiple (85) | CheckPoint @ ... | Multiple (6) | Multiple (634) | 312,785 | 286,847 |
| BB:CategoryDefinition: Firewall or ACL Accept | Multiple (25,873) | Multiple (14,426) | Multiple (235) | Multiple (2) | Multiple (5) | CheckPoint @ ... | Multiple (3) | Multiple (616) | 179,674 | 174,540 |

*Grouping by custom rules*

QRadar SIEM allows you to group events and flows by custom rules, but not by anomaly detection rules. The latter rule type is beyond the scope of this course.

# Lesson 2 Using Advanced Search filters



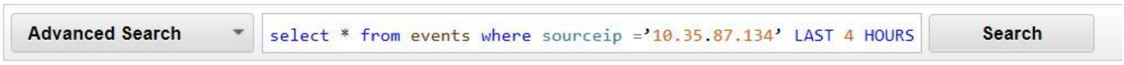
## Lesson: Using Advanced Search filters

QRadar features an advanced search facility using the Ariel Query Language (AQL). This lesson teaches you to use the AQL to construct advanced queries from one screen.

Reference: *QRadar SIEM Users Guide* http://ibm.co/1wvpSEE

## Ariel Query Language

- QRadar SIEM provides an **Advanced Search** filter option in the GUI that you can use to query the events and flows database
- The **Advanced Search** filter uses Ariel Query Language (AQL) to build SQL-like queries
- For example, the following query would look for events sharing the same source IP address over the past four hours

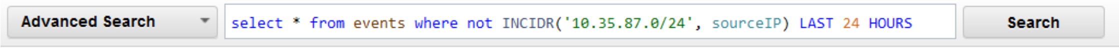


```
select * from events where sourceip =’10.35.87.134’ LAST 4 HOURS
```

*Ariel Query Language*

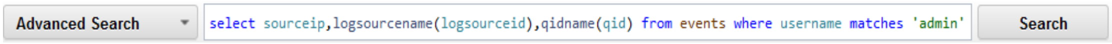
## Additional AQL examples

- AQL provides different filter types, one of which deals with using IP/CIDR filters; this query excludes a subnet



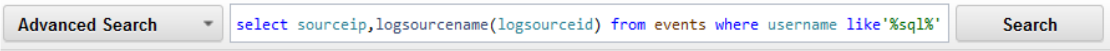
```
select * from events where not INCIDR('10.35.87.0/24', sourceIP) LAST 24 HOURS
```

- AQL queries can be structured to return specific fields in event or flows



```
select sourceip,logsourcename(logsourceid),qidname(qid) from events where username matches 'admin'
```

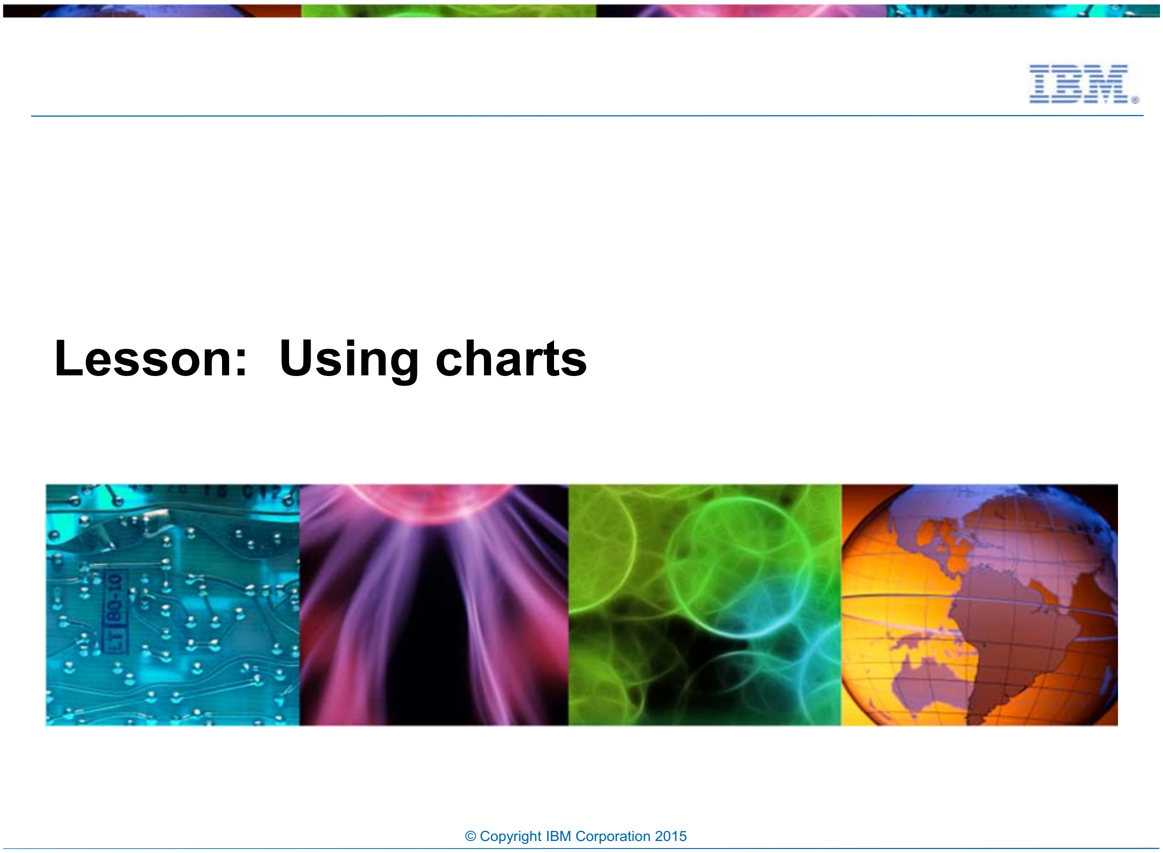
- AQL queries can also reference both wildcards and regular expressions; for example, this query looks for a user account name that contains the string `sql`



```
select sourceip,logsourcename(logsourceid) from events where username like'%sql%'
```

*Additional AQL examples*

# Lesson 3 Using charts



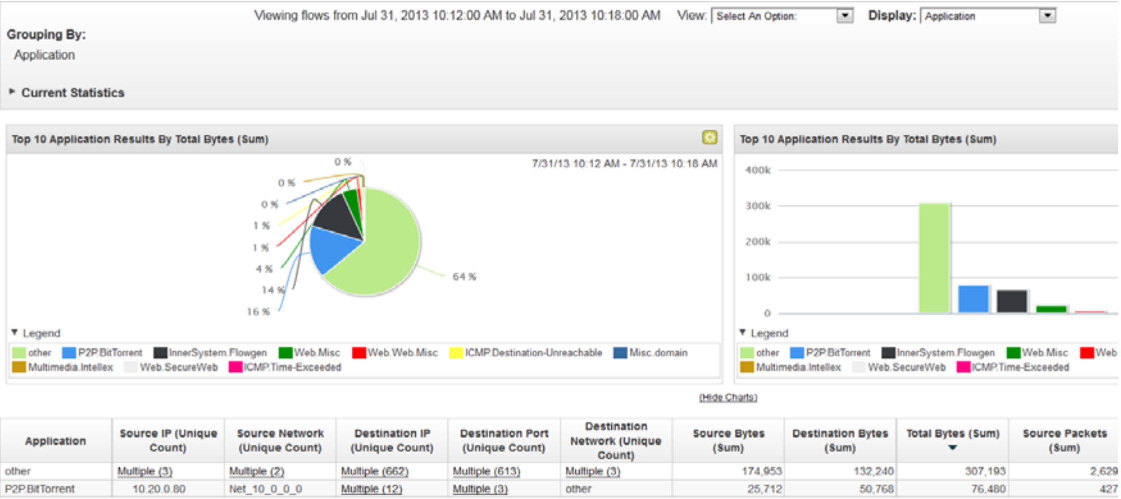
## Lesson: Using charts

Charts graph log or network activity and are used to determine short- and long-term data trends. In this lesson, you learn how to use time-series and other charts to view log or network activity.

Reference: *QRadar SIEM Users Guide* http://ibm.co/1wvpSEE

## Charts on Log and Network Activity tabs: Grouping

When you select a grouping on the **Log** tab or **Network Activity** tab, QRadar SIEM shows a pie chart and a bar chart



Viewing flows from Jul 31, 2013 10:12:00 AM to Jul 31, 2013 10:18:00 AM  View: Select An Option:  **Display:** Application

**Grouping By:**
Application

▸ **Current Statistics**

| Application | Source IP (Unique Count) | Source Network (Unique Count) | Destination IP (Unique Count) | Destination Port (Unique Count) | Destination Network (Unique Count) | Source Bytes (Sum) | Destination Bytes (Sum) | Total Bytes (Sum) ▾ | Source Packets (Sum) |
|---|---|---|---|---|---|---|---|---|---|
| other | Multiple (3) | Multiple (2) | Multiple (662) | Multiple (613) | Multiple (3) | 174,953 | 132,240 | 307,193 | 2,629 |
| P2P.BitTorrent | 10.20.0.80 | Net_10_0_0_0 | Multiple (12) | Multiple (3) | other | 25,712 | 50,768 | 76,480 | 427 |

*Charts on Log and Network Activity tabs: Grouping*

After you configure a chart on the **Log Activity** or **Network Activity** tabs, the chart configurations remain when you perform one of the following activities:

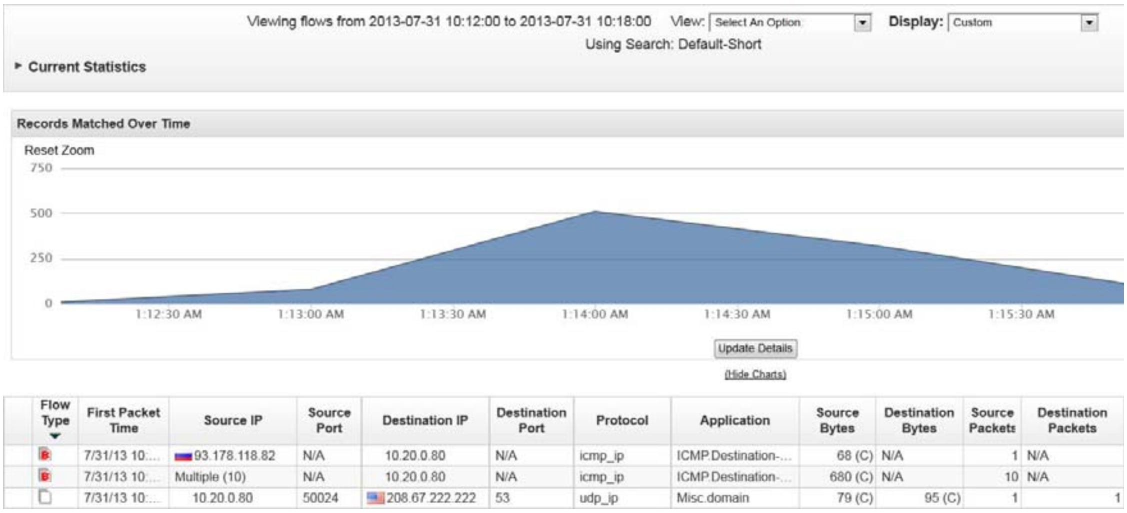
- Change the event view using the Display list
- Apply a filter
- Save the search criteria

Chart configurations do not remain when you perform one of the following activities:

- Start a new search
- Access a quick search
- View grouped results in a branch window
- Save the search results

## Charts on Log and Network Activity tabs: Time range

When you select a time range other than **Real Time (streaming)**, QRadar SIEM shows a time-series chart even if it did not capture time-series data for the chart



Viewing flows from 2013-07-31 10:12:00 to 2013-07-31 10:18:00 View: Select An Option Display: Custom

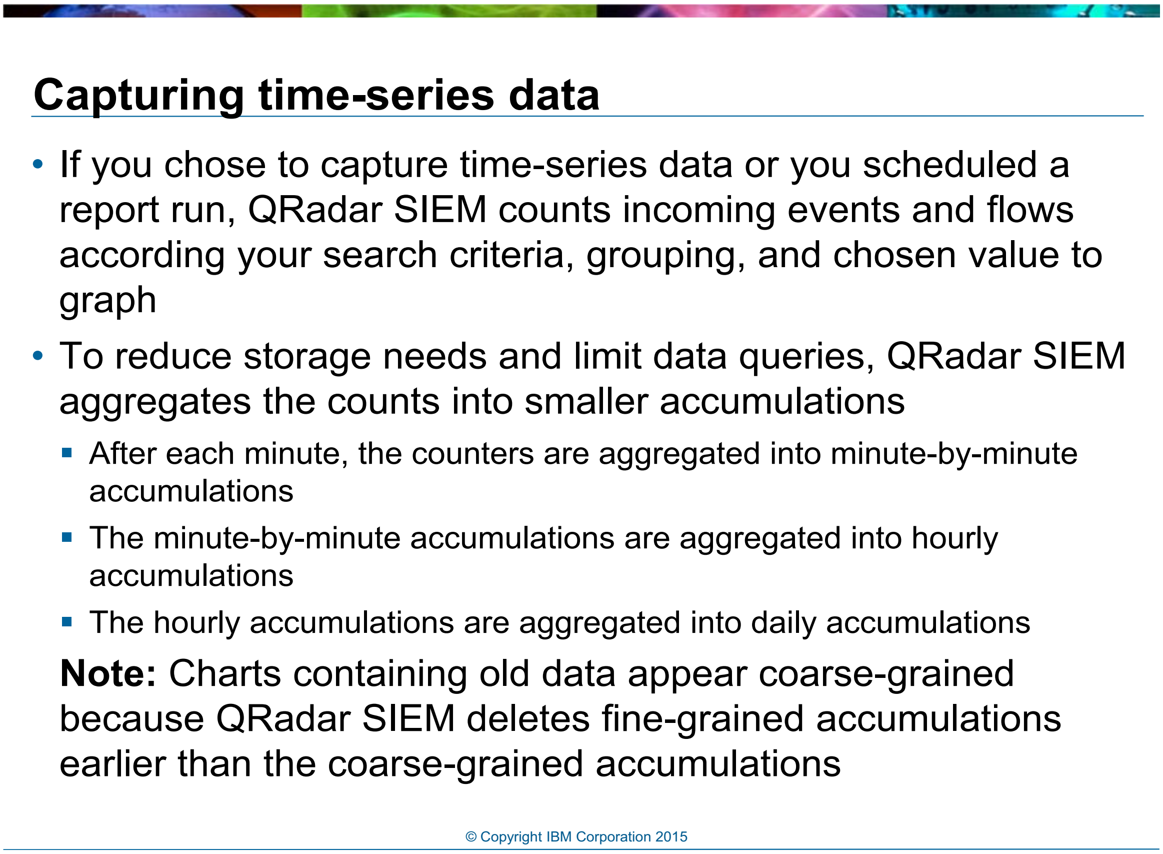
Using Search: Default-Short

| | Flow Type | First Packet Time | Source IP | Source Port | Destination IP | Destination Port | Protocol | Application | Source Bytes | Destination Bytes | Source Packets | Destination Packets |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 7/31/13 10:... | 93.178.118.82 | N/A | 10.20.0.80 | N/A | icmp_ip | ICMP.Destination-... | 68 (C) | N/A | 1 | N/A |
| | | 7/31/13 10:... | Multiple (10) | N/A | 10.20.0.80 | N/A | icmp_ip | ICMP.Destination-... | 680 (C) | N/A | 10 | N/A |
| | | 7/31/13 10:... | 10.20.0.80 | 50024 | 208.67.222.222 | 53 | udp_ip | Misc.domain | 79 (C) | 95 (C) | 1 | 1 |

*Charts on Log and Network Activity tabs: Time range*

The **Log Activity** and **Network Activity** tabs display only one time-series chart. QRadar SIEM displays this chart even if it did not capture time-series data for the chart. The data is then retrieved from the datastore. This can require considerable processing time.

The **Dashboard** tab can display many items with time-series charts. For performance reasons, QRadar SIEM displays time-series charts for ranges longer than 1 minute only if you enabled capturing of time-series data for these charts in dashboard items.



## Capturing time-series data

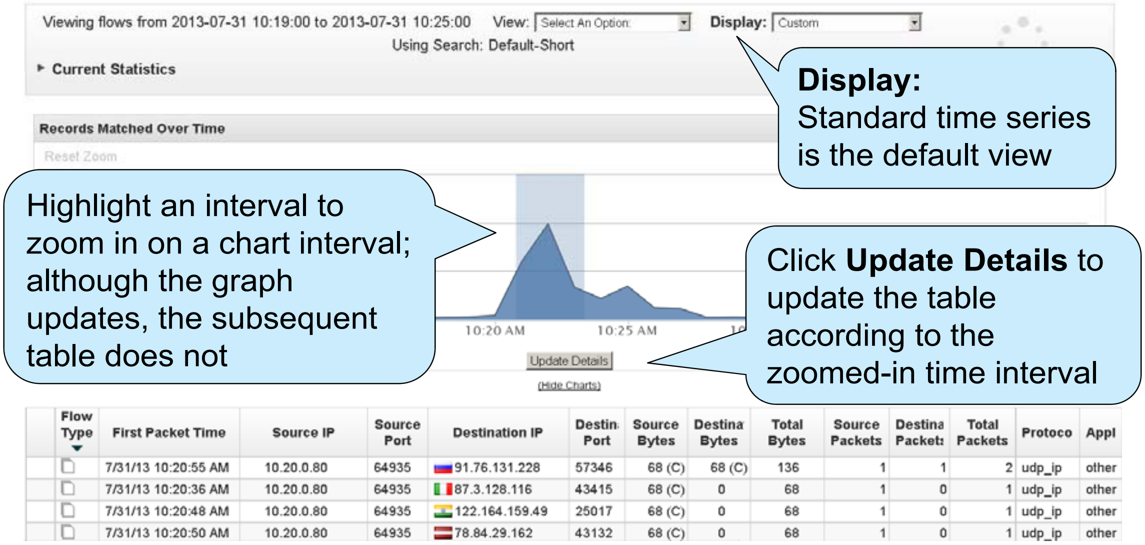
- If you chose to capture time-series data or you scheduled a report run, QRadar SIEM counts incoming events and flows according your search criteria, grouping, and chosen value to graph
- To reduce storage needs and limit data queries, QRadar SIEM aggregates the counts into smaller accumulations
  - After each minute, the counters are aggregated into minute-by-minute accumulations
  - The minute-by-minute accumulations are aggregated into hourly accumulations
  - The hourly accumulations are aggregated into daily accumulations

  **Note:** Charts containing old data appear coarse-grained because QRadar SIEM deletes fine-grained accumulations earlier than the coarse-grained accumulations

*Capturing time-series data*

Each Event Processor runs an accumulator process. QRadar SIEM administrators can change the accumulator retention time periods.

# Viewing time-series charts: Zooming to focus



Viewing flows from 2013-07-31 10:19:00 to 2013-07-31 10:25:00 View: Select An Option Display: Custom

Using Search: Default-Short

**Display:**
Standard time series is the default view

Highlight an interval to zoom in on a chart interval; although the graph updates, the subsequent table does not

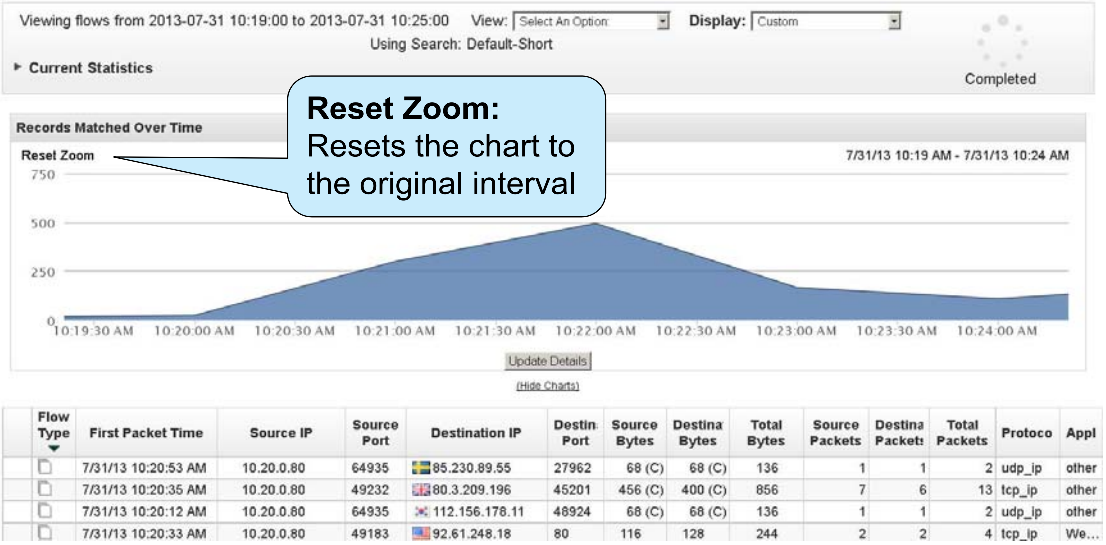
Click **Update Details** to update the table according to the zoomed-in time interval

| | Flow Type | First Packet Time | Source IP | Source Port | Destination IP | Destin Port | Source Bytes | Destina Bytes | Total Bytes | Source Packets | Destina Packets | Total Packets | Protoco | Appl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | □ | 7/31/13 10:20:55 AM | 10.20.0.80 | 64935 | 91.76.131.228 | 57346 | 68 (C) | 68 (C) | 136 | 1 | 1 | 2 | udp_ip | other |
| | □ | 7/31/13 10:20:36 AM | 10.20.0.80 | 64935 | 87.3.128.116 | 43415 | 68 (C) | 0 | 68 | 1 | 0 | 1 | udp_ip | other |
| | □ | 7/31/13 10:20:48 AM | 10.20.0.80 | 64935 | 122.164.159.49 | 25017 | 68 (C) | 0 | 68 | 1 | 0 | 1 | udp_ip | other |
| | □ | 7/31/13 10:20:50 AM | 10.20.0.80 | 64935 | 78.84.29.162 | 43132 | 68 (C) | 0 | 68 | 1 | 0 | 1 | udp_ip | other |

*Viewing time series charts: Zooming to focus*

Time-series charts are graphical representations of log or network activity over time. Peaks and valleys displayed in the chart depict high- and low-volume activity. Time-series charts are useful for short-term and long-term data trending. Using time-series charts, you can access, navigate, and investigate log and network activity from various views and perspectives.

# Viewing time-series charts: Resetting zoom



Viewing flows from 2013-07-31 10:19:00 to 2013-07-31 10:25:00 View: Select An Option Display: Custom

Using Search: Default-Short

▸ Current Statistics

Completed

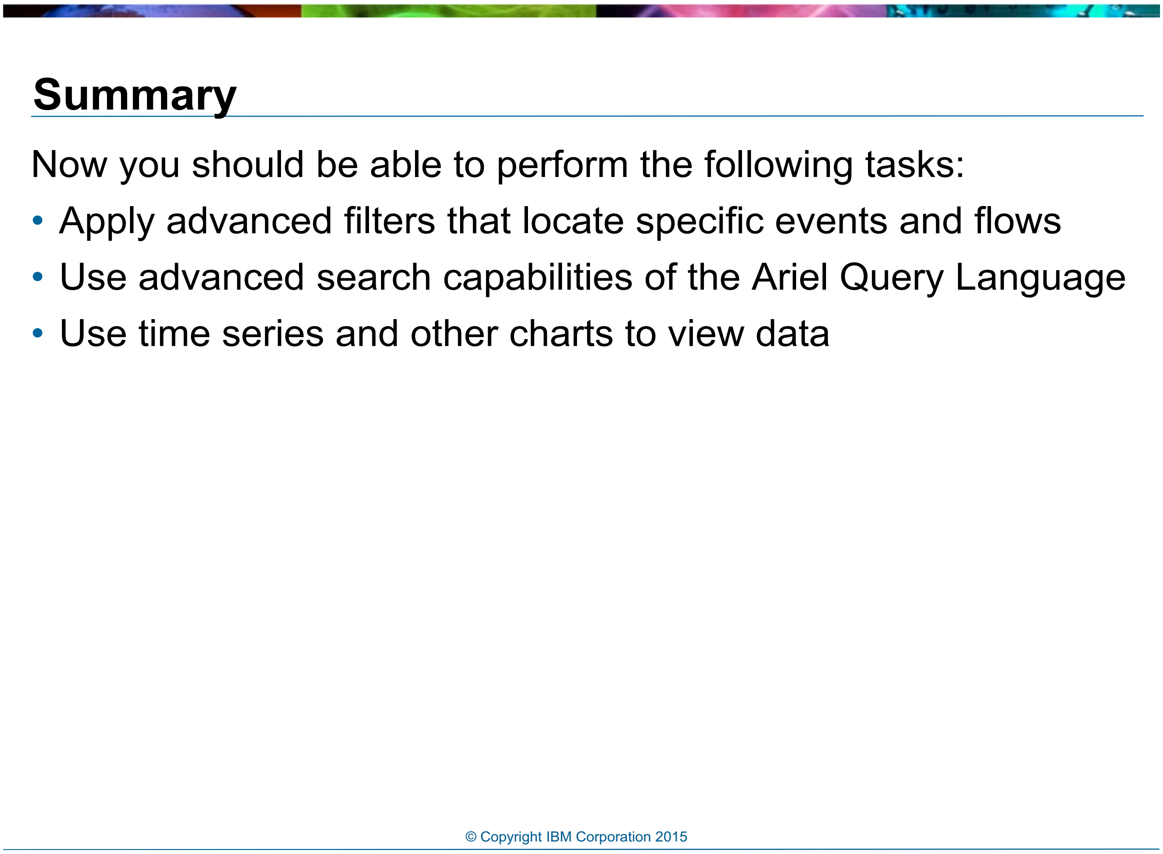
Records Matched Over Time

**Reset Zoom:** Resets the chart to the original interval

| Flow Type | First Packet Time | Source IP | Source Port | Destination IP | Destin Port | Source Bytes | Destina Bytes | Total Bytes | Source Packets | Destina Packet: | Total Packets | Protoco | Appl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| □ | 7/31/13 10:20:53 AM | 10.20.0.80 | 64935 | 85.230.89.55 | 27962 | 68 (C) | 68 (C) | 136 | 1 | 1 | 2 | udp_ip | other |
| □ | 7/31/13 10:20:35 AM | 10.20.0.80 | 49232 | 80.3.209.196 | 45201 | 456 (C) | 400 (C) | 856 | 7 | 6 | 13 | tcp_ip | other |
| □ | 7/31/13 10:20:12 AM | 10.20.0.80 | 64935 | 112.156.178.11 | 48924 | 68 (C) | 68 (C) | 136 | 1 | 1 | 2 | udp_ip | other |
| □ | 7/31/13 10:20:33 AM | 10.20.0.80 | 49183 | 92.61.248.18 | 80 | 116 | 128 | 244 | 2 | 2 | 4 | tcp_ip | We... |

*Viewing time series charts: Resetting zooming*

Plan a time-series search according to what data you want to investigate and how you want to display the data on the time-series chart. For example, consider how to group the search, what columns to display, and what filters to apply.



## Summary

Now you should be able to perform the following tasks:

- Apply advanced filters that locate specific events and flows
- Use advanced search capabilities of the Ariel Query Language
- Use time series and other charts to view data

*Summary*