



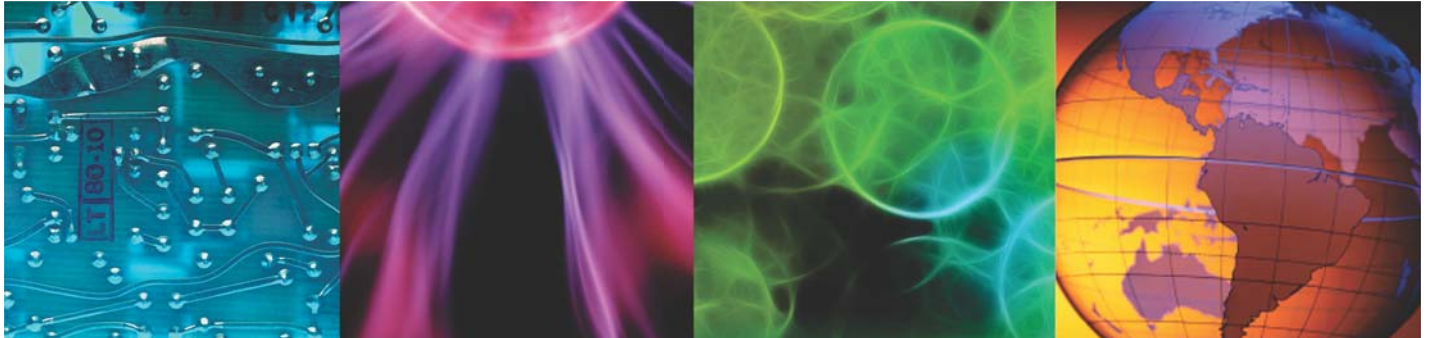
IBM Training

IBM Security QRadar SIEM Foundations

Student Notebook

Course code BQ102 ERC 1.0

January 2015



IBM Security Systems

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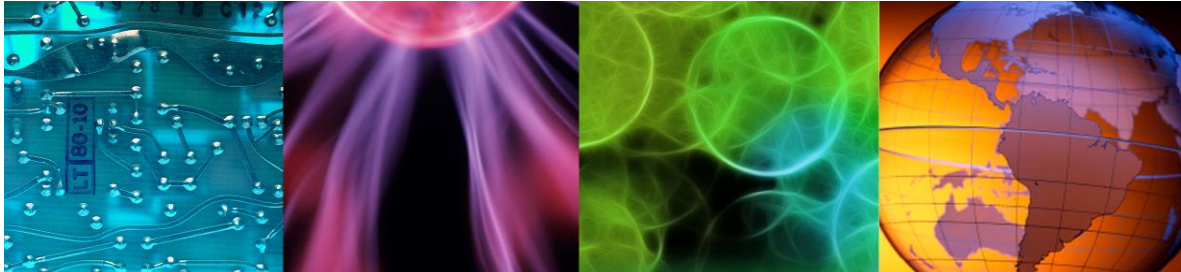
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About this course



IBM Security QRadar SIEM Foundations



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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: • 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

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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

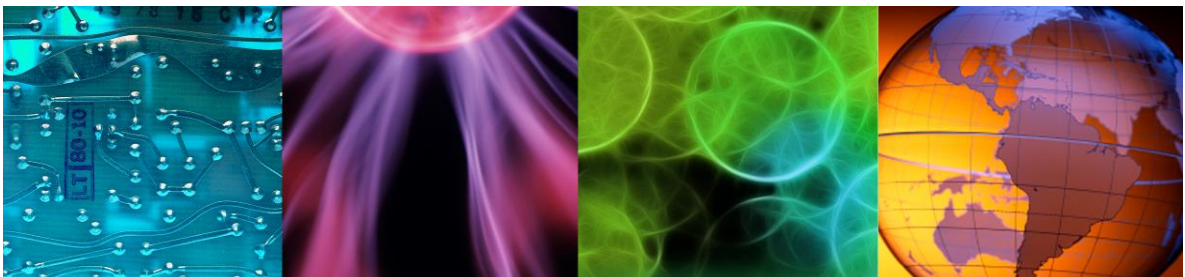
QRadar SIEM provides several filters that you can apply to identify suspicious or non-standard behavior. Bar, pie, table, and time-series charts visualize security data. This unit teaches you how to use charts and apply advanced filters to examine specific activities in your environment.



1 Introduction to IBM Security QRadar SIEM



Introduction to IBM Security QRadar SIEM



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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

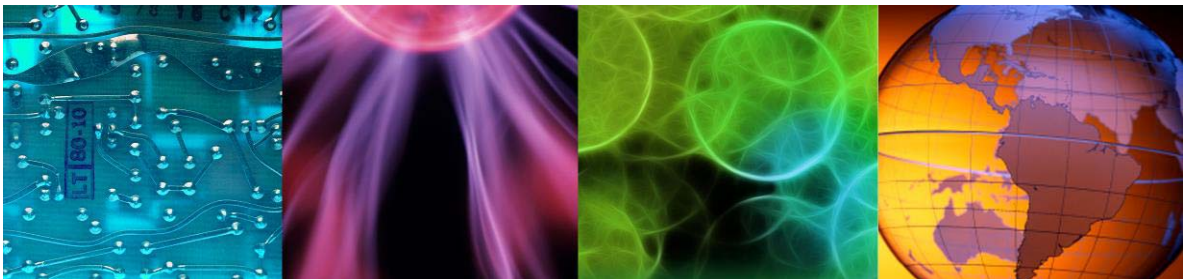
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Objectives

Lesson 1 QRadar SIEM purpose



Lesson: QRadar SIEM purpose



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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)

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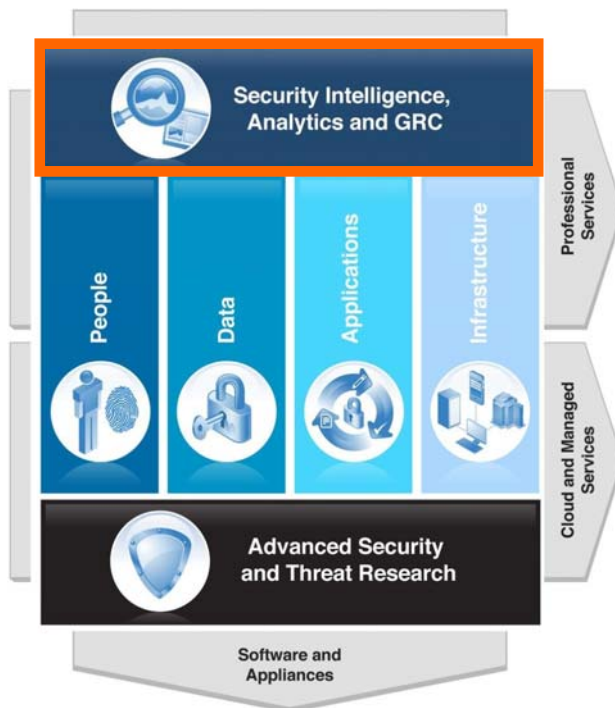
Purposes of QRadar SIEM

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



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

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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?

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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



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Providing context

Lesson 2 QRadar SIEM capabilities



Lesson: QRadar SIEM capabilities



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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

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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)

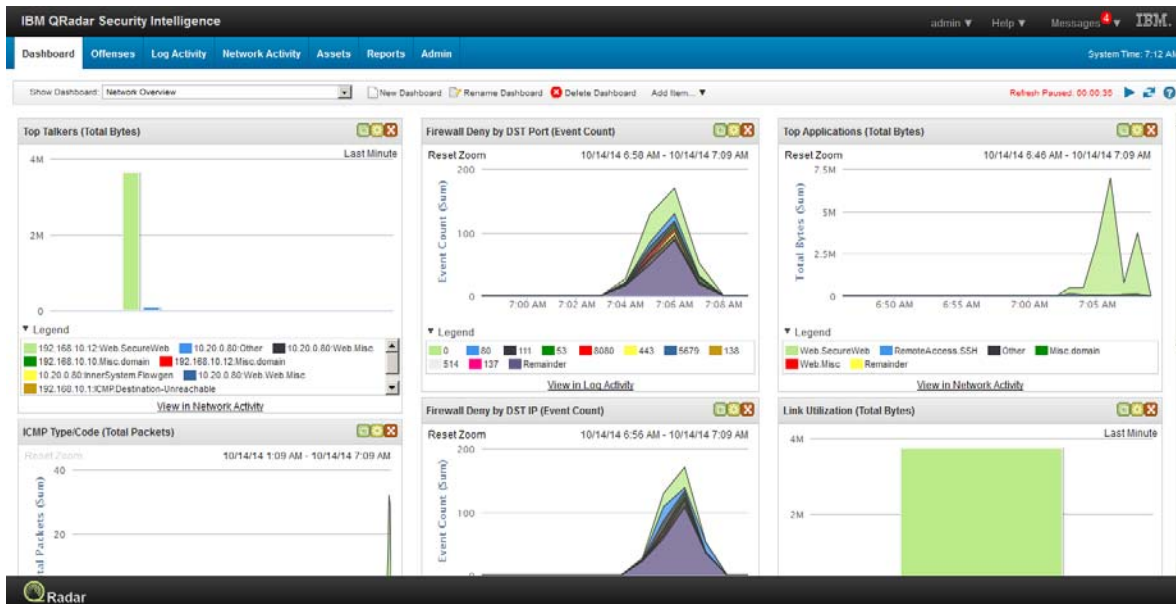
- Comprehensive search capabilities
- Monitor host and network behavior changes that could indicate an attack or policy breach such as these examples
 - Off hours or excessive usage of an application or network activity patterns inconsistent with historical profiles
 - Prioritization of suspected attacks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

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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



The console provides one integrated user interface for all tasks

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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

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Summary



2 How QRadar SIEM collects security data



How QRadar SIEM collects security data



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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

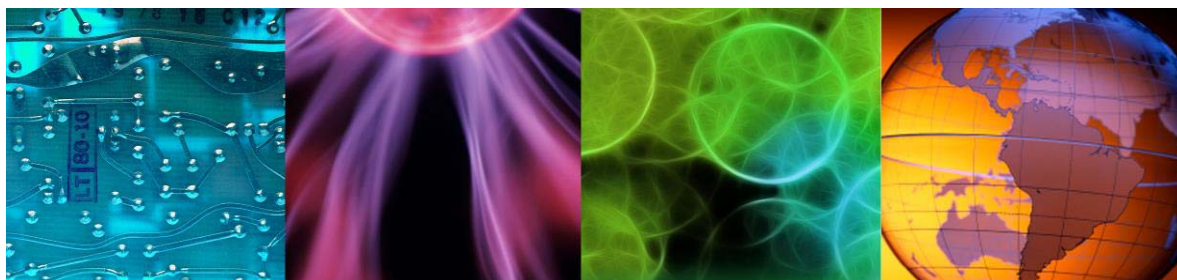
In this unit, you learn to perform the following tasks:

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

Lesson 1 Collecting and processing events and flows



Lesson: Collecting and processing events and flows



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

References:

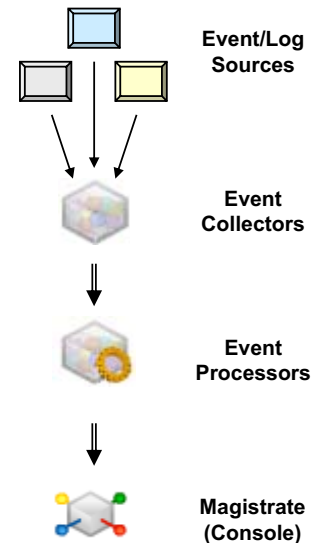
- *IBM Security QRadar SIEM Users Guide* <http://ibm.co/1wvpSEE>
- *IBM Security QRadar SIEM Administration Guide* <http://ibm.co/1wvpSEE>
- *IBM Security QRadar Log Sources User Guide* <http://ibm.co/1wvpSEE>
- *IBM Security QRadar WinCollect User Guide* <http://ibm.co/1wvpSEE>
- *IBM Security QRadar 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

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 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*.

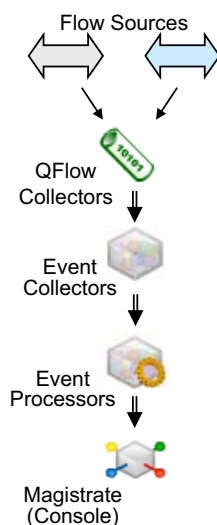
Event collectors use traffic analysis to discover which kind of device a log source is if a Device Support Module (DSM) for that kind of device is installed. In addition, the DSM for a device specifies how to map and normalize the device's raw events.

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	192.168.1.1	61190	202.12.27.33	53	udp_ip	Misc.domain	101 (C)	0	1	0	N/A
	Oct 14, 2014, 6:59:59 AM	192.168.1.1	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	192.168.1.1	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	192.168.1.1	64334	192.168.10.10	22	tcp_ip	RemoteAccess.SSH	4,132	65,266	51	54	N/A
	Oct 14, 2014, 7:00:09 AM	192.168.1.1	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	192.168.1.1	64348	192.168.10.10	443	tcp_ip	Web.SecureWeb	3,569	24,010	19	23	N/A
	Oct 14, 2014, 7:00:05 AM	192.168.1.1	61709	192.168.10.1	53	udp_ip	Misc.domain	101 (C)	0	1	0	N/A
	Oct 14, 2014, 6:59:59 AM	192.168.1.1	61097	192.168.99.1	53	udp_ip	Misc.domain	78	0	1	0	N/A
	Oct 14, 2014, 7:00:01 AM	192.168.1.1	64335	192.168.10.10	443	tcp_ip	Web.SecureWeb	192	297	3	4	N/A
	Oct 14, 2014, 7:00:05 AM	192.168.1.1	N/A	192.168.10.12	N/A	icmp_ip	ICMP.Destination-Unreachable	129 (C)	0	1	0	Port Unreach...

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Flow collection and processing

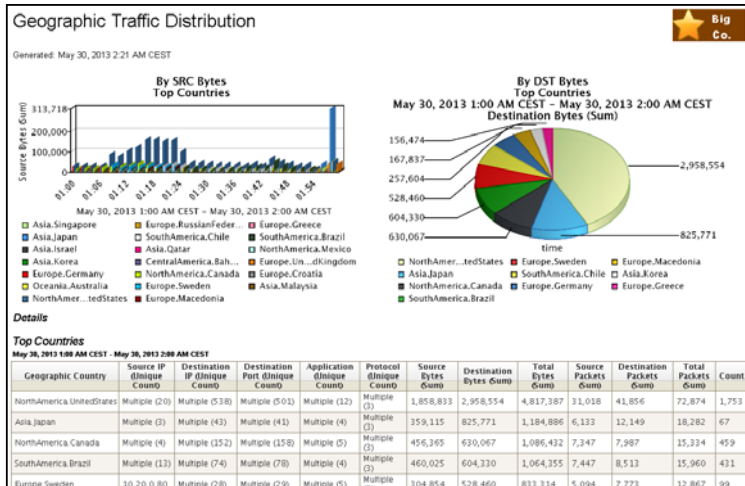
A *flow* is a record of a conversation between two devices on a network.

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



- 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

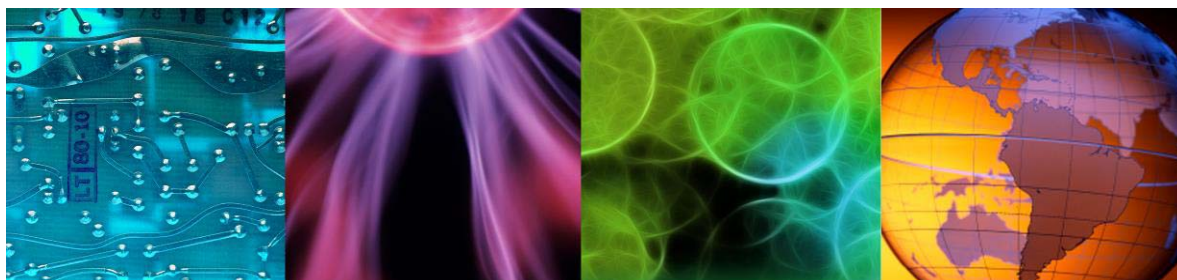
Reporting

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



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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



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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
- 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

Source IP	Source Port	Destination IP	Destination 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

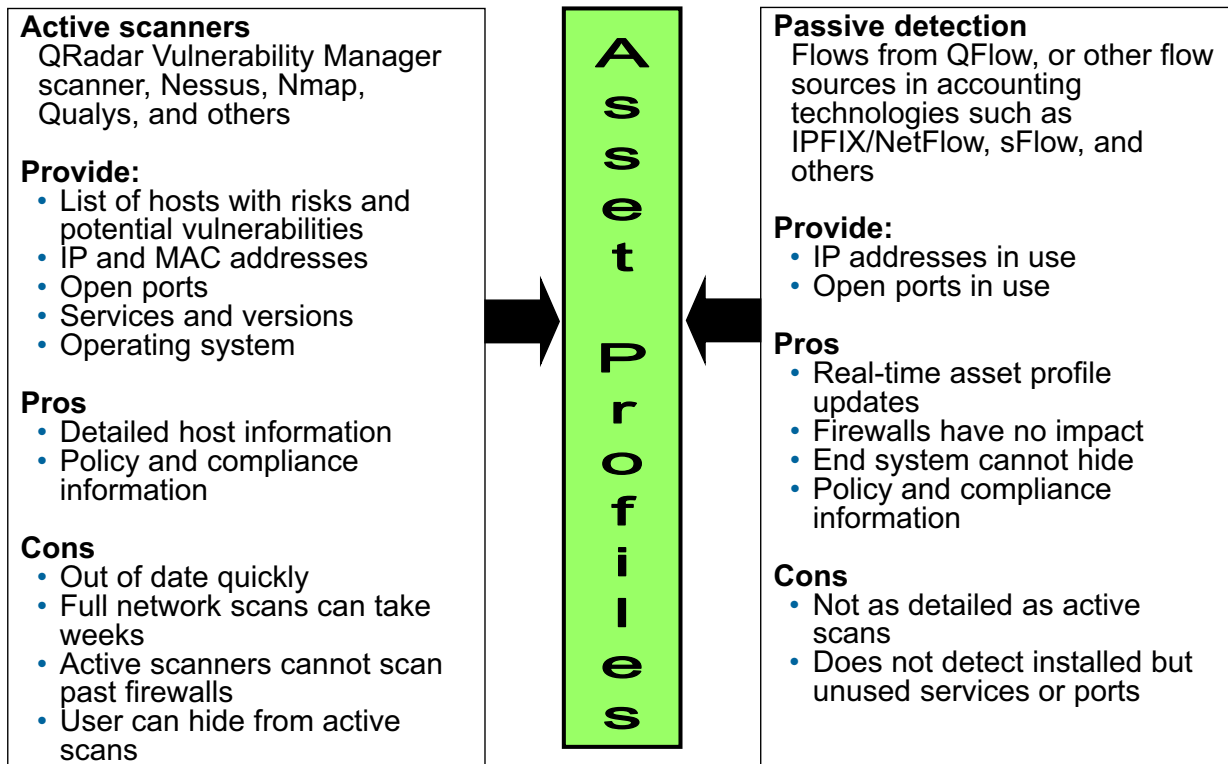
Filter on Source IP is 9.180.225.51
Filter on Source IP is not 9.180.225.51
Filter on Source or Destination IP is 9.180.225.51
False Positive
More options...

Navigate
Information
Run QVM Scan

QRadar Vulnerability Manager scanner

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

Gathering asset information



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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:

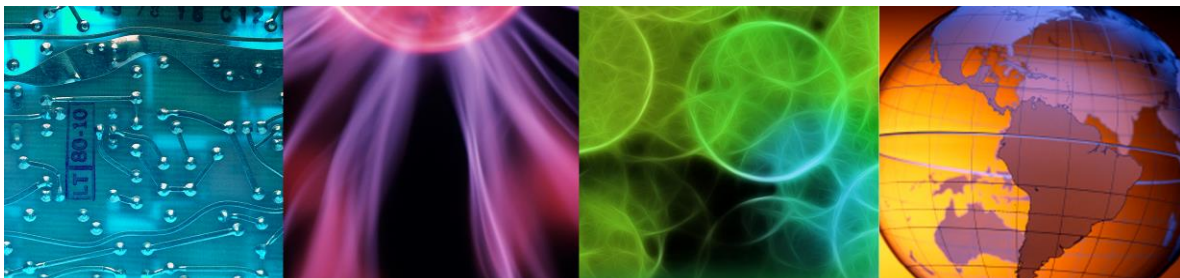
- Describe how QRadar SIEM collects and processes events and flows
- Describe how QRadar SIEM collects vulnerability data



3 Using the QRadar SIEM dashboard



Using the QRadar SIEM dashboard



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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

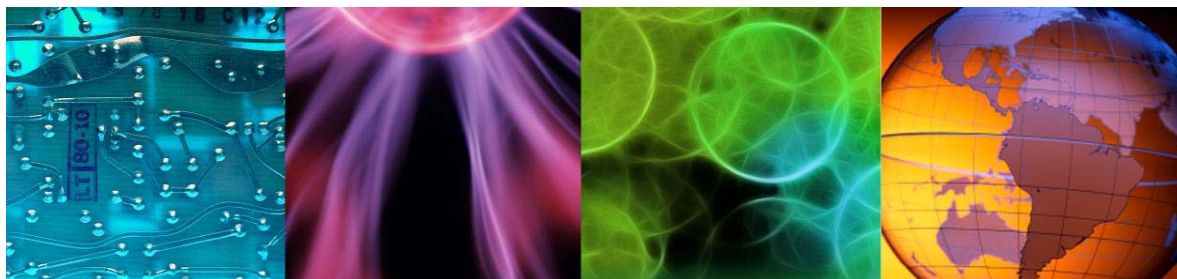
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Objectives

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

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Dashboard overview

Instructor demonstration of the dashboard



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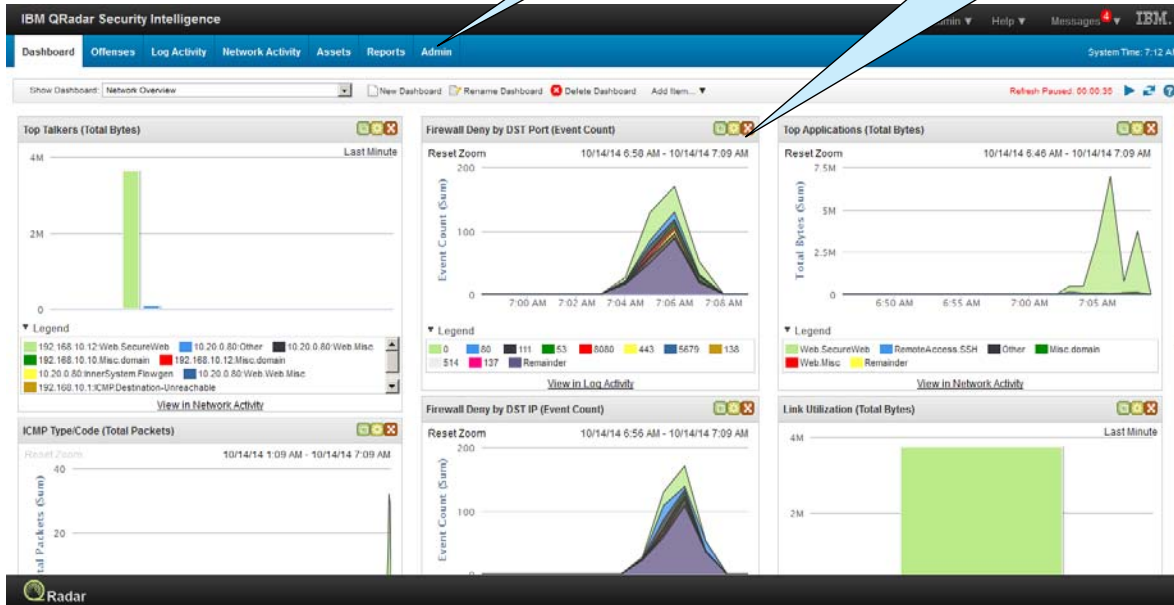
Instructor demonstration of the dashboard

Default dashboard

Click a tab to load it

Tabs

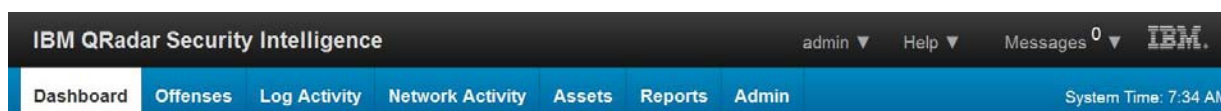
Tables and charts



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Default dashboard

QRadar SIEM tabs



Use tabs to navigate the primary QRadar SIEM functions

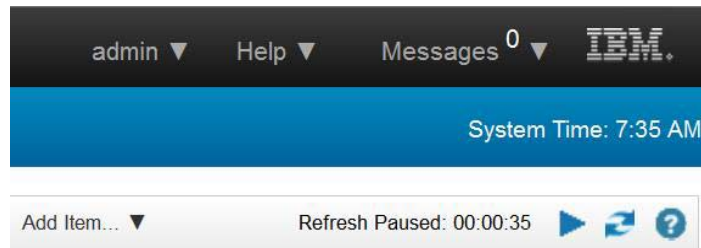
- **Dashboard:** The initial summary view
- **Offenses:** Displays offenses; list of prioritized incidents
- **Log Activity:** Query and display events
- **Network Activity:** Query and display flows
- **Assets:** Query and display information about systems in your network
- **Reports:** Create templates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

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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**

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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.

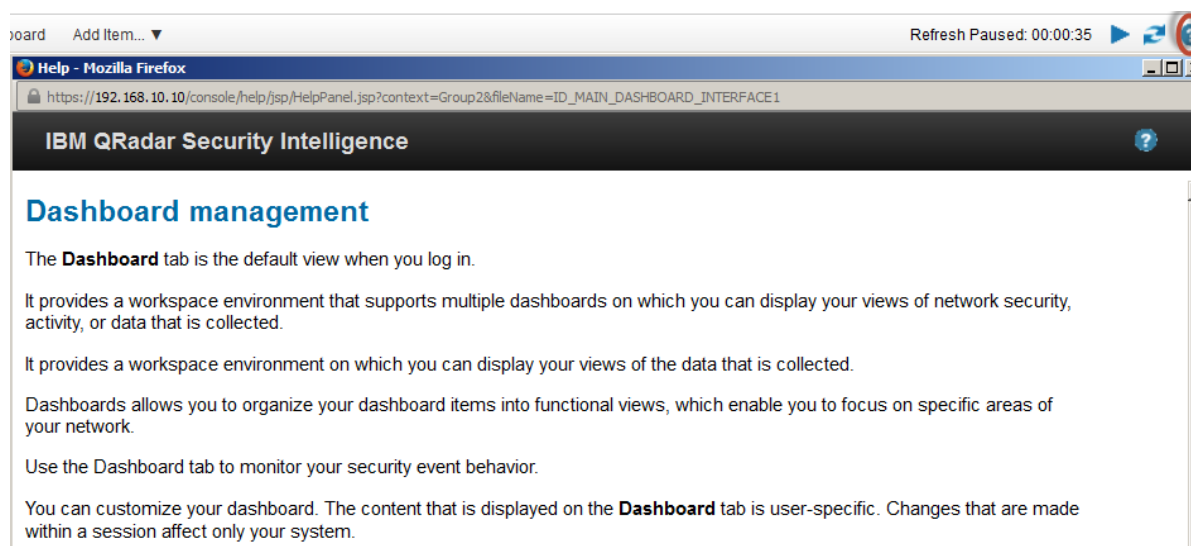


Note: Refer to the *IBM Security QRadar SIEM Administration Guide* (<http://ibm.co/1wvpSEE>) for further details.

- **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



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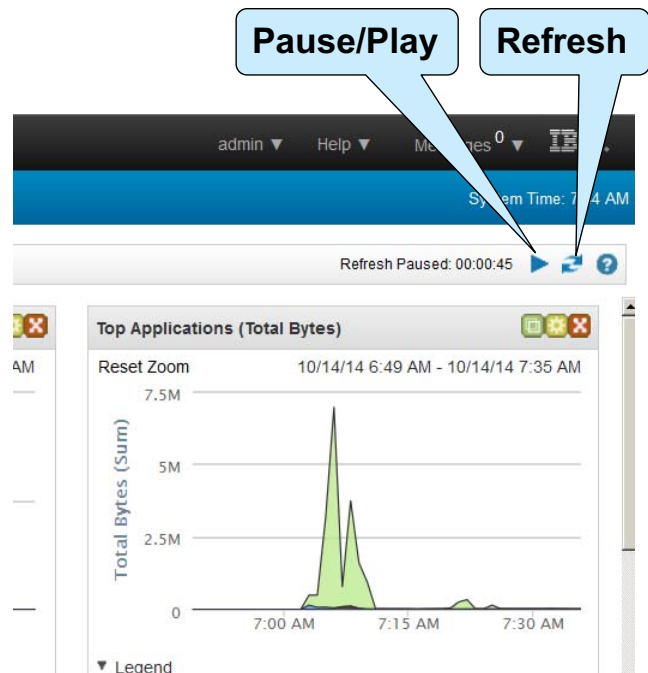
Context-sensitive help

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



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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



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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

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Dashboard variety

Creating a custom dashboard

The screenshot shows the IBM QRadar Security Intelligence dashboard. Three callout boxes provide instructions:

- Show Dashboard:** Select a dashboard to view. This points to the 'Show Dashboard' dropdown menu.
- New Dashboard:** Create a new dashboard empty of items. This points to the 'New Dashboard' button.
- Add item:** Add an item to dashboard. This points to the 'Add Item...' button.

The dashboard itself displays several charts: 'Top Talkers (Total Bytes)', 'Firewall Deny by DST Port (Event Count)', 'Top Applications (Total Bytes)', 'ICMP Type/Code (Total Packets)', and 'Link Utilization (Total Bytes)'. Each chart has a legend and a 'View in Log Activity' or 'View in Network Activity' link.

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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**.

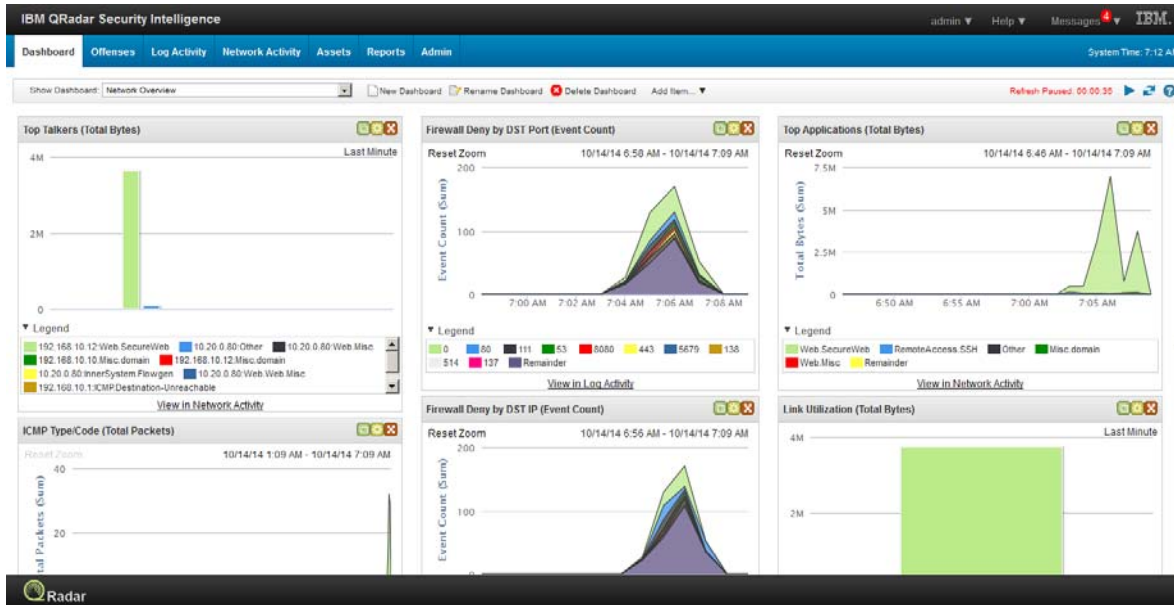
The new dashboard opens on the **Dashboard** tab and is listed in the **Show Dashboard** list. The new dashboard is empty.

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



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Items

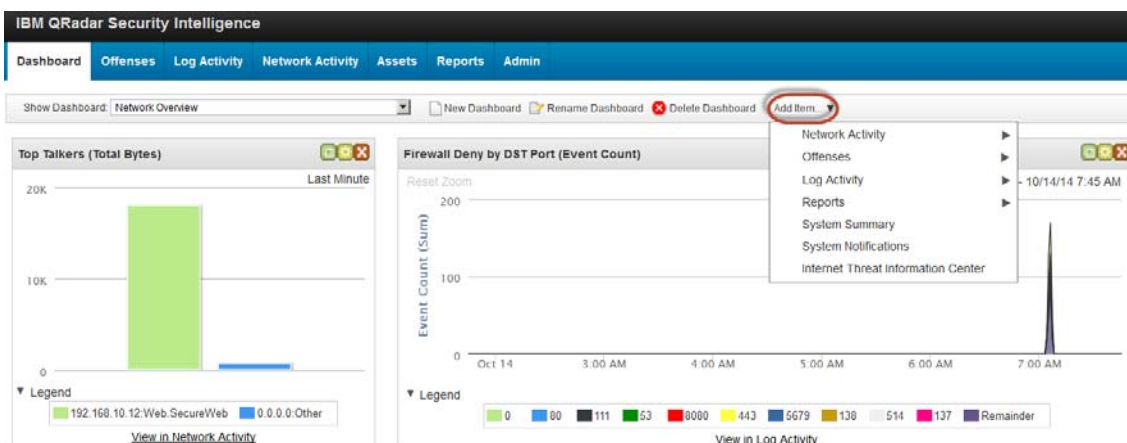
Managing dashboard items

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



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Managing dashboard items

Student exercise

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



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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

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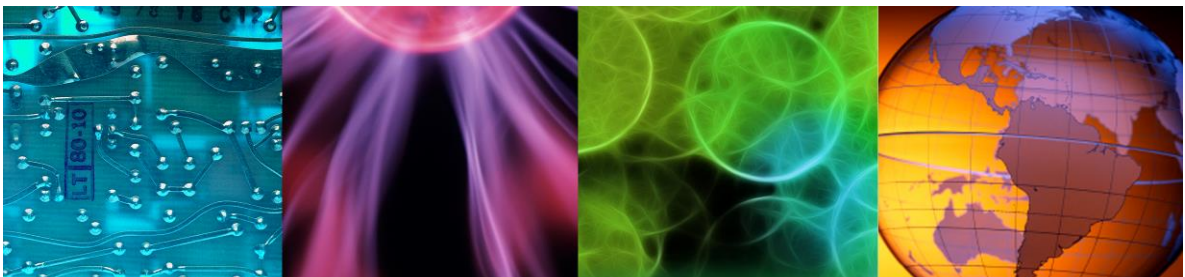
Summary



4 Investigating an offense that is triggered by events



Investigating an offense that is triggered by events



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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

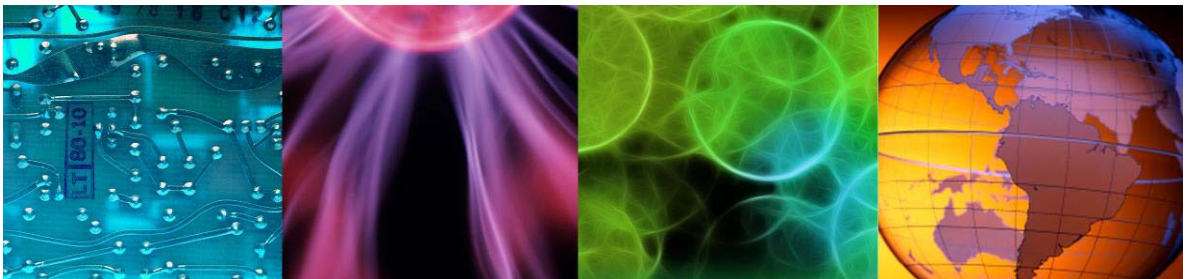
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Objectives

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

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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

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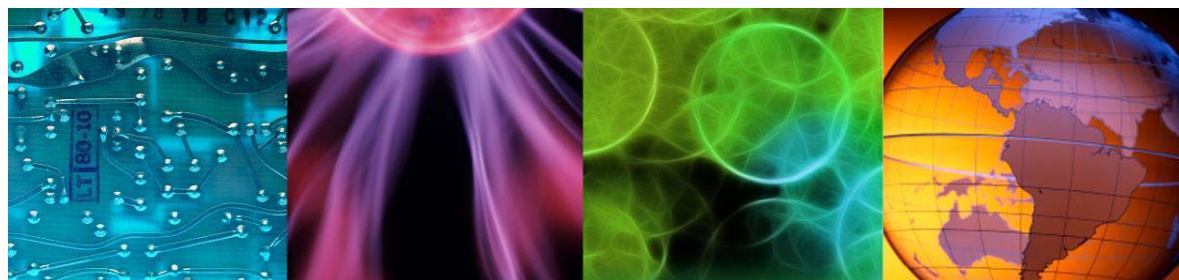
Creating and rating offenses

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



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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

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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

The screenshot shows the IBM QRadar Security Intelligence interface. The top navigation bar includes 'Dashboard', 'Offenses', 'Log Activity', 'Network Activity', 'Assets', 'Reports', and 'Admin'. The 'Offenses' tab is selected. On the left, a sidebar lists navigation options: 'My Offenses', 'All Offenses', 'By Category', 'By Source IP', 'By Destination IP', 'By Network', and 'Rules'. The main area displays a table of offenses. Above the table, there are search and filter options: 'Search...', 'Save Criteria', 'Actions', and 'Print'. Below these, 'Current Search Parameters' are shown, including 'Exclude Hidden Offenses' and 'Exclude Closed Offenses'. The table has columns for 'Id', 'Description', 'Offense Type', 'Offense Source', and 'Magnitude'. The offenses listed are:

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

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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

Local ICMP Scanner: detected excessive Firewall Denies Across Multiple Hosts From A Local Host

containing Firewall Deny

Source IP: 10.127.15.37

Destination IP: Local (2) Remote (200)

Network(s): Null (2)

Status: Active

Offense Type: Source IP

Reference: 433,600,000 and 2,000,000 in 3 categories

Event/Flow Count: 410

Start: Jul 31, 2013 9:42:44 AM

Duration: 41m 27s

Assigned to: UNASSIGNED

Severity: High

Credibility: High

Offense Source Summary

IP: 10.127.15.37

Location: Host 10-172-162-10-18-0-0

Magnitude: 100

Value: Unknown

User: Unknown

SSAC: Unknown NRC

Weight: 0

Offs: 1

Devs: 2

Last Event/Flow: 75 22m 42s

Events/Flows: 410

Last 5 Notes

Notes

Username

Creation Date

No results were returned

Top 5 Source IPs

Source IP

Magnitude

Location

Value

User

SSAC

Weight

Offs

Devs

Last Event/Flow

Events/Flows

10.127.15.37

100

Host 10-1

No

Unknown

Unknown NRC

0

1

2

75 22m 42s

410

Top 5 Destination IPs

Destination IP

Magnitude

Location

Value

User

SSAC

Weight

Offs

Devs

Last Event/Flow

Events/Flows

10.25.10.5

100

Host 10-1

No

Unknown

Unknown NRC

0

1

1

75 20m 51s

3

10.25.11.10

100

Host 10-1

No

Unknown

Unknown NRC

0

1

1

75 20s 24s

4

Top 5 Log Sources

Name

Description

Group

Events/Flows

Offenses

Total Events/Flows

Checkpoint @ F/W: N/A

Checkpoint device

363

25

1

191

Custom Rule Engine @ : CDE

Custom Rule Engine

17

22

1

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

Offenses

Total Events/Flows

Network Sweep

High

0

11

Jul 31, 2013 9:47:17 AM

Jul 31, 2013 10:22:56 AM

1

11

Firewall Deny

High

2

383

Jul 31, 2013 9:47:18 AM

Jul 31, 2013 10:22:52 AM

1

385

ICMP Reconnaissance

High

0

6

Jul 31, 2013 9:48:57 AM

Jul 31, 2013 10:20:41 AM

1

6

Last 10 Events

Event Name

Magnitude

Log Source

Category

Destination

Port

Time

Firewall Deny

High

Checkpoint @ F/W: N/A

Firewall Deny

200.142.143.251

8

Jul 31, 2013 10:21:50 AM

Firewall Deny

High

Checkpoint @ F/W: N/A

Firewall Deny

200.142.143.252

8

Jul 31, 2013 10:21:48 AM

Firewall Deny

High

Checkpoint @ F/W: N/A

Firewall Deny

200.142.143.253

8

Jul 31, 2013 10:21:46 AM

Firewall Deny

High

Checkpoint @ F/W: N/A

Firewall Deny

200.142.143.254

8

Jul 31, 2013 10:21:44 AM

Firewall Deny

High

Checkpoint @ F/W: N/A

Firewall Deny

200.142.144.1

8

Jul 31, 2013 10:21:42 AM

Firewall Deny

High

Checkpoint @ F/W: N/A

Firewall Deny

200.142.144.2

8

Jul 31, 2013 10:21:40 AM

Firewall Deny

High

Checkpoint @ F/W: N/A

Firewall Deny

200.142.144.3

8

Jul 31, 2013 10:21:38 AM

Firewall Deny

High

Checkpoint @ F/W: N/A

Firewall Deny

200.142.144.4

8

Jul 31, 2013 10:21:36 AM

Firewall Deny

High

Checkpoint @ F/W: N/A

Firewall Deny

200.142.145.242

8

Jul 31, 2013 10:21:34 AM

Firewall Deny

High

Checkpoint @ F/W: N/A

Firewall Deny

200.142.145.244

8

Jul 31, 2013 10:21:32 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

"GRE Event": GRE Rule description: [Source IP] detected a source IP address attempting recon.

Jul 31, 2013 10:00:19 AM

5

"GRE Event": GRE Rule description: [Excessive Firewall Denies Across Multiple Hosts From A Local Host]

Jul 31, 2013 10:00:28 AM

5

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Offense Summary window

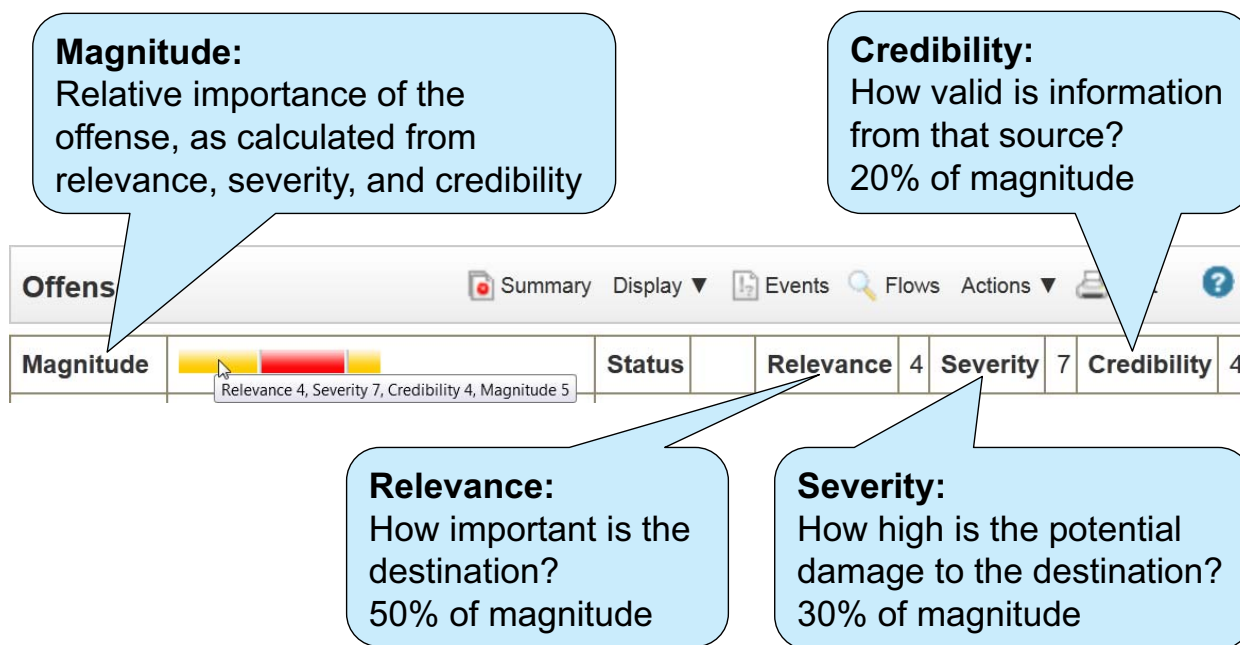
The Offense Summary window includes these sections:

- 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



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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)

Offense Type:

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

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				

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

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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	
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
Source IP(s)	<u>10.127.15.37</u>	Event Flow count	<u>410 events</u> and <u>0 flows</u> in 3 categories
Destination IP(s)	<u>Local (2)</u> <u>Remote (360)</u>	Start	Jul 31, 2013 9:42:44 AM
Destination IP(s): Targets of the ICMP scanning		Duration	41m 27s
Duration: Amount of time elapsed since the first event or flow associated with the offense was created			

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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

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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

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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		Navigate Information View By Network View Source Summary View Destination Summary	
User	Unknown		

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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		

Navigate

Information

DNS Lookup

WHOIS Lookup

Port Scan

Asset Profile

Search Events

Search Flows

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

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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

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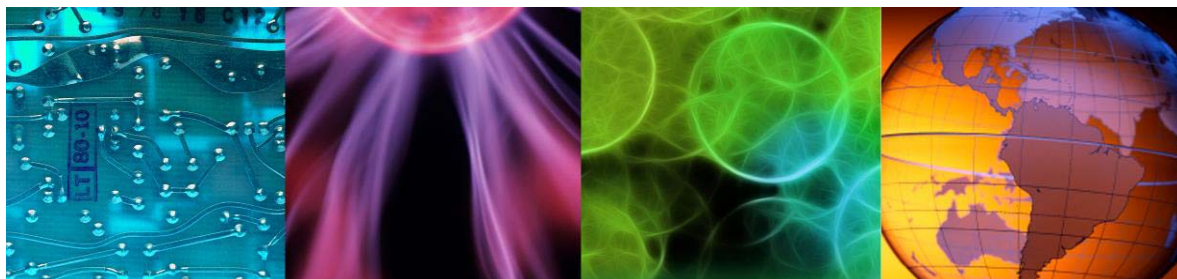
Offense Source Summary (4 of 4)

- **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



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

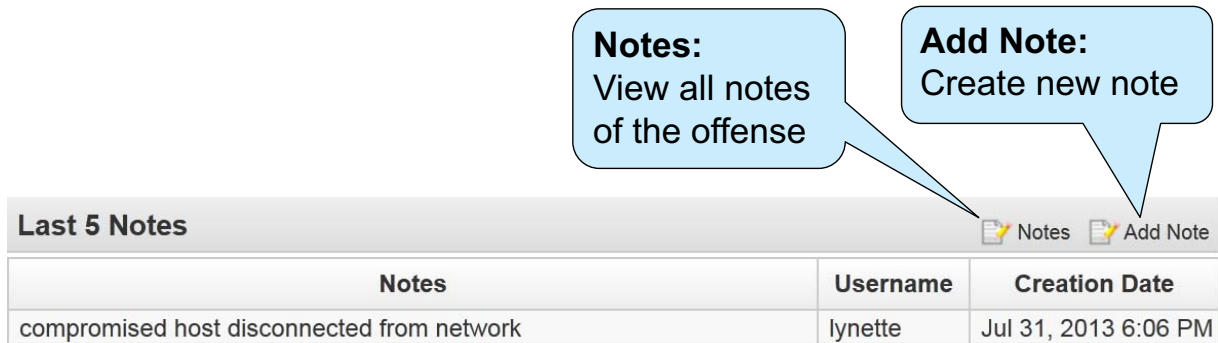
References:

- *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

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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

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

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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

View

Destinations

Offenses

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

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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											
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		Net-10-172-192.Net_10_0_0_0					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 System: 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

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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

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	54

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

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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

Top 5 Users			
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

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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						
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

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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							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

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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							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	

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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.

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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

Top 5 Annotations			Annotations
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
"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.			
[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

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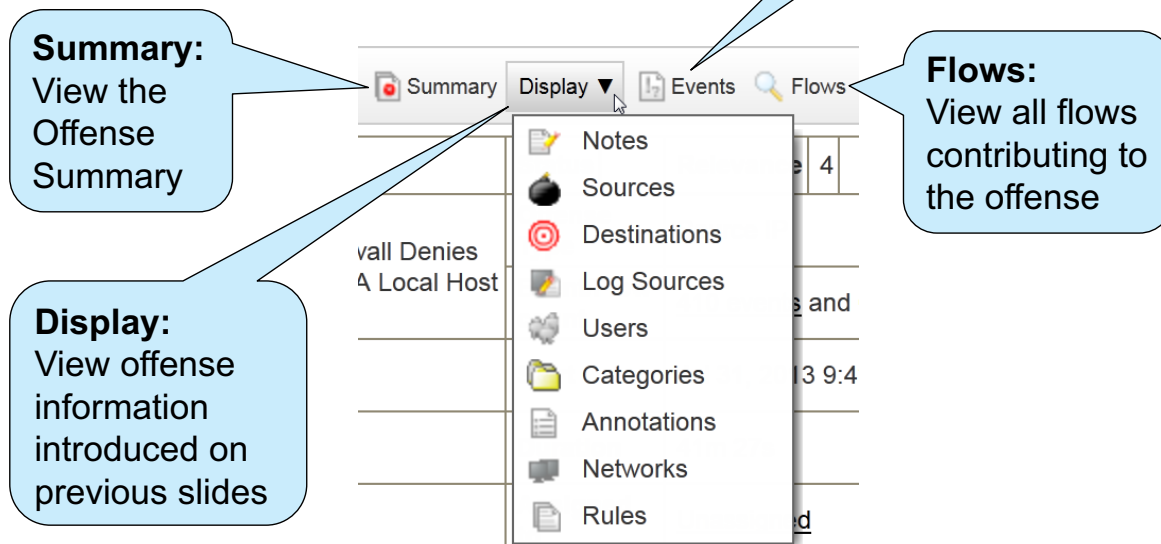
Annotations

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



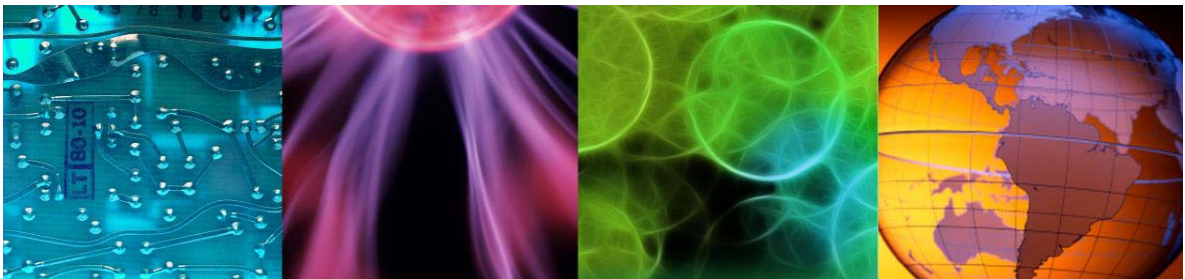
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Offense Summary toolbar

Lesson 4 Acting on an offense



Lesson: Acting on an offense



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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

The screenshot shows the 'Actions' menu for an offense. The menu options are: Follow up (red flag icon), Hide (yellow X icon), Protect Offense (grey shield icon), Close (red X icon), Email (yellow envelope icon), Add Note (yellow notepad icon), and Assign (person icon). Callouts provide details for each action:

- 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

The background shows the Offense Summary table with the following data:

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

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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

Status: Icon indicates

- Protected
- Inactive
- Closed
- Follow up
- Notes
- Assigned

The actions available depend on the status of the offense

The screenshot shows the QRadar SIEM interface. At the top, there are tabs for 'Primary', 'Display', 'Events', 'Flows', 'Actions', and 'Print'. Below the tabs is a table with columns for 'Status', 'Offense Type', 'Event/Flow count', 'Start', 'Duration', and 'Assigned to'. The 'Status' column contains icons representing different offense states. The 'Offense Type' column shows 'Source IP'. The 'Event/Flow count' column shows '411 events'. The 'Start' column shows 'Jul 31, 2013'. The 'Duration' column shows '46m 37s'. The 'Assigned to' column shows 'lynette'. An 'Actions' menu is open, showing options: 'Follow up', 'Hide', 'Unprotect Offense', 'Close', 'Email', 'Add Note', and 'Assign'. A callout box points to the 'Unprotect Offense' option.

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

- Follow up
- Hide
- Unprotect Offense
- Close
- Email
- Add Note
- Assign

Unprotect Offense:
Allow QRadar SIEM to delete this protected offense

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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



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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

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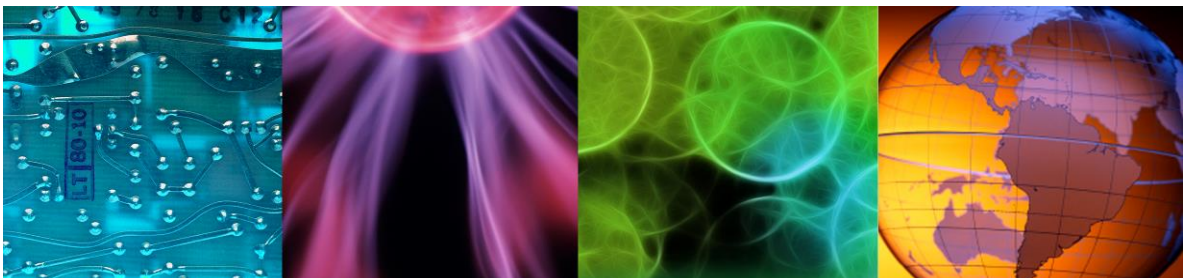
Summary



5 Investigating the events of an offense



Investigating the events of an offense



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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

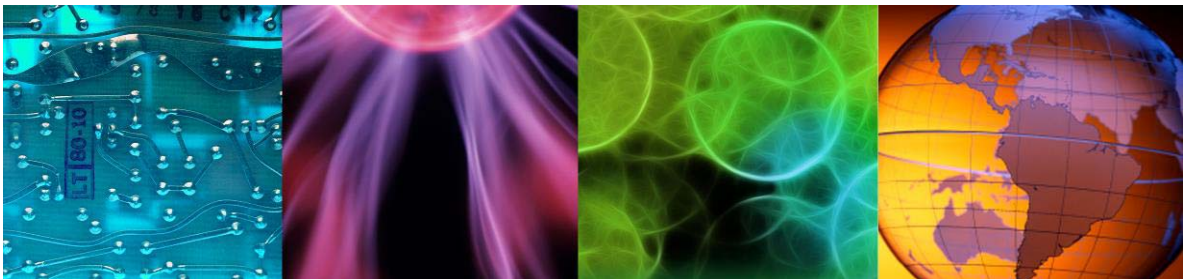
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Objectives

Lesson 1 Investigating event details



Lesson: Investigating event details



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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						
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

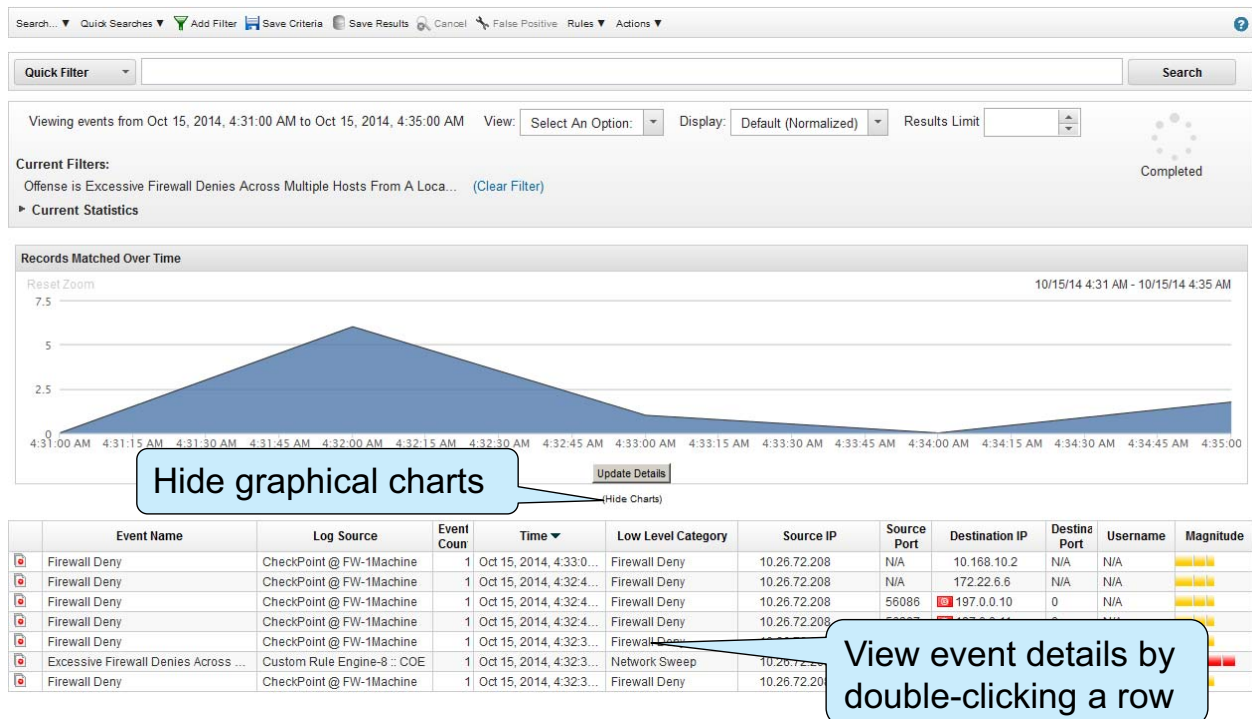
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Navigating to the events



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

List of events



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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

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

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

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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

Payload Information

utf hex base64

☒ Wrap Text

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

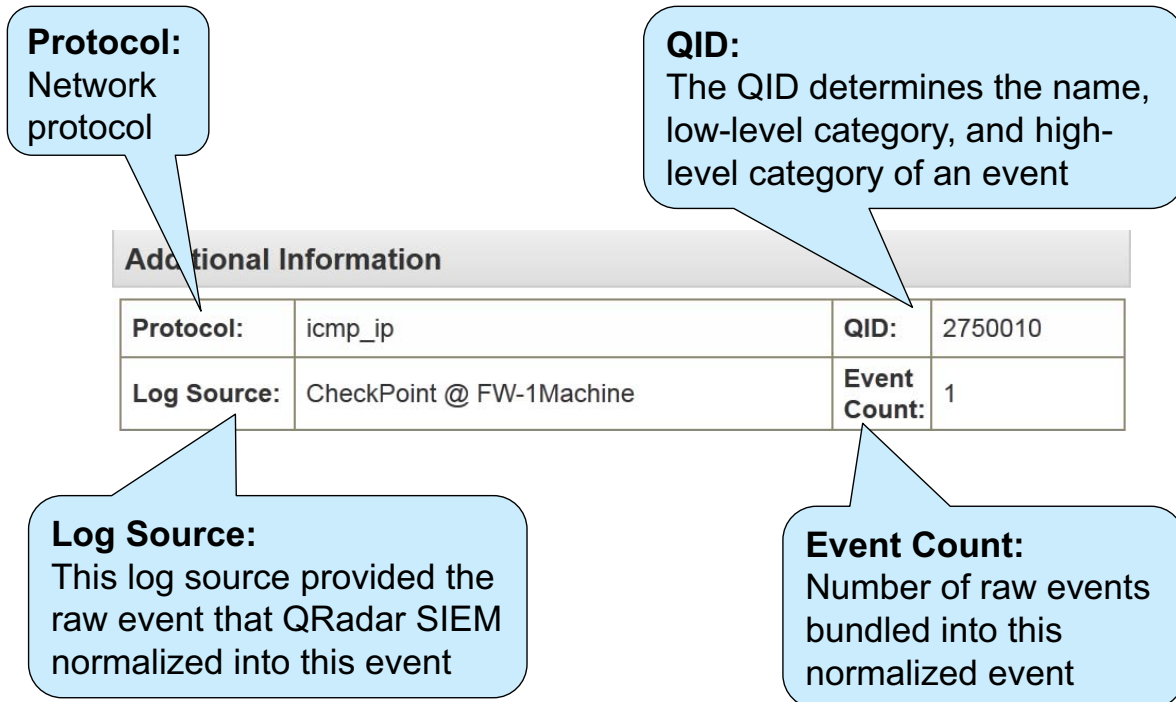
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Event details: Reviewing the raw event

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



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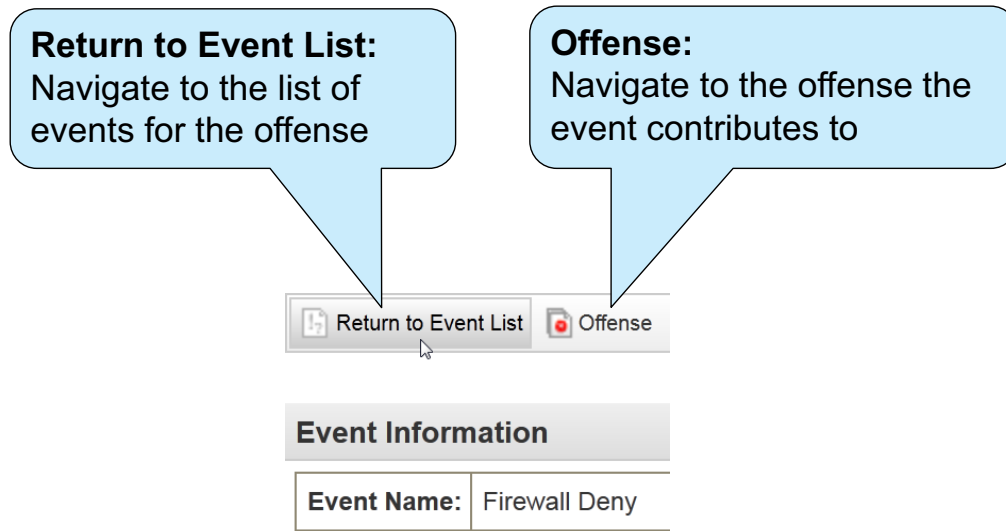
Event details: Additional details

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



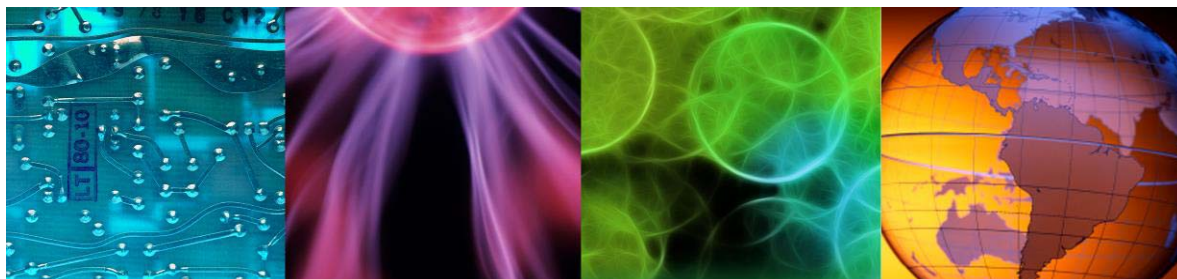
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Returning to the list of events

Lesson 2 Using filters to investigate events



Lesson: Using filters to investigate events



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

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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

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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

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Note: Searches are introduced later in this course.

Applying a Quick Filter to the payload

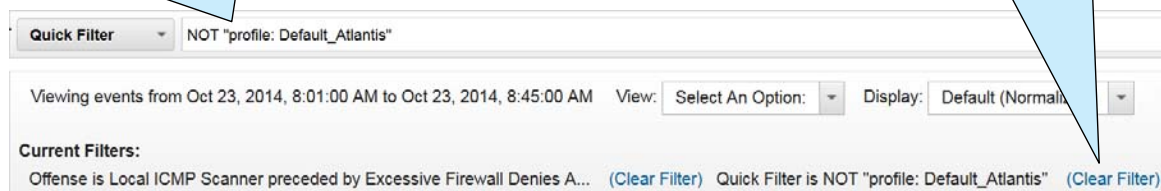
- The payload of an event contains the raw event that mentions the firewall profile that denied the connection
- To verify that the company's main profile, Atlantis, was always active, filter events without **profile: Default_Atlantis** in the payload

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



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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.

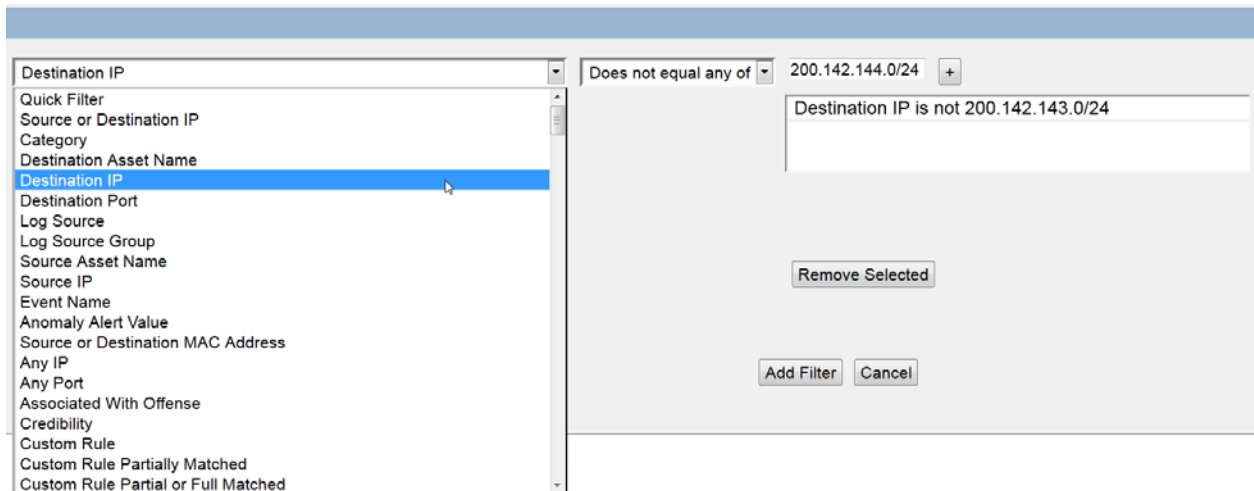


Note: Refer to the *QRadar SIEM Users Guide* (<http://ibm.co/1wvpSEE>) for more information about the expressions that Quick Filter supports.

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



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Using another filter option

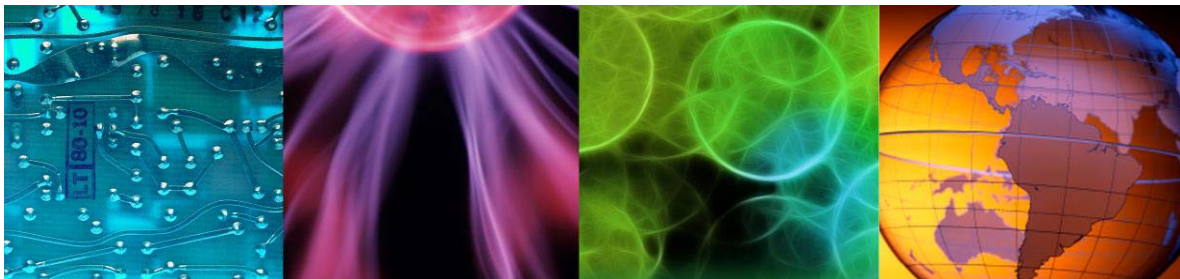
Other filter options are available:

- Instead of an IP address, you can enter a range of IP addresses, in CIDR notation, such as 10.100.0.0/16.
- 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



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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
- 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 Port

Completed

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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 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: 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)	Destination 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 :: CQF	tcp_ip	N/A	8
ICMP Recon...	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)**

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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

Viewing events from Jul 31, 2013 9:25:00 AM to Jul 31, 2013 10:00 AM View: Display:

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

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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: **Display:**

Grouping By:
 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)	Destination 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

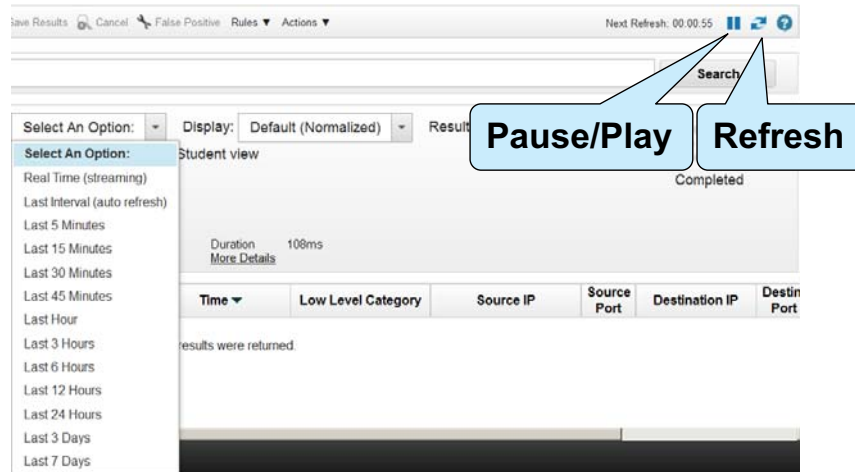
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Removing grouping criteria

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

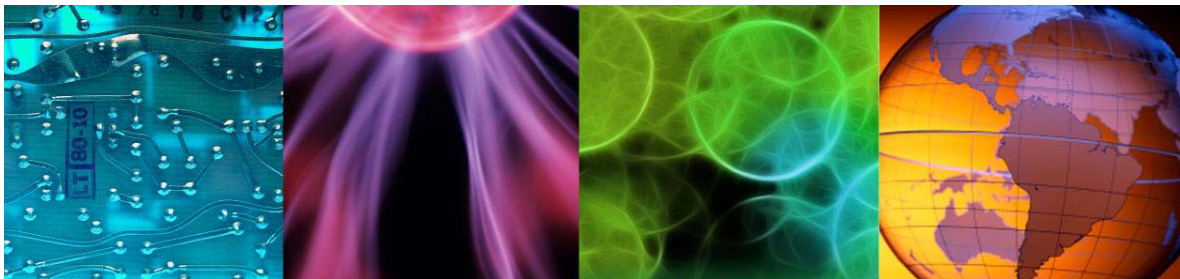
In addition to viewing incoming events, you can select a time range from the **View** list. When you open the List of events window from the Offense Summary, QRadar SIEM automatically includes all events added to the offense.

- **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



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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

Current Filters:

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

Filter:

Right-click the Source IP to filter

(Show Charts)

	Event Name	Log	Ev Co	Time	Low Level Category	Source IP
	Firewall Deny	CheckPoint @ FW-...	1	7/31/13 10:08:43 AM	Firewall Deny	10.127.15.37
	Firewall Deny	CheckPoint @ FW-...		Filter on Source IP is 10.127.15.37		127.15.37
	Firewall Deny	CheckPoint @ FW-...		Filter on Source IP is not 10.127.15.37		127.15.37
	Local ICM...	Custom Rule Engin		Filter on Source or Destination IP is 10.127.15.37		127.15.37
	Firewall Deny	CheckPoint @ FW-...		False Positive		127.15.37
	Firewall Deny	CheckPoint @ FW-...		More options...		127.15.37

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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

View:
List events of the last 24 hours

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

Display:
Group by High Level Category

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Monitoring the scanning host (2 of 3)

Monitoring the scanning host (3/3)

Save Criteria:
Save the criteria of the current search

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

Search... ▾ Quick Searches ▾ Add Filter Save Criteria Save Results Cancel False Positive Rules ▾ Actions ▾ Qui

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

(Show Charts)

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

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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

The screenshot shows a 'Save Search' dialog box with the following elements and callouts:

- Search Name:** A text field containing 'Dept - 10.127.15.37'. A callout bubble points to it with the text: 'Prepend name with department name or initials for easy identification'.
- Assign Search to Group(s):** A tree view showing a hierarchy of folders. The 'Usage Monitoring' folder is selected. A callout bubble points to it with the text: 'Assign to group'.
- Timespan options:** Three radio buttons: 'Last Interval (auto refresh)', 'Recent', and 'Specific Interval'. The 'Recent' option is selected. Below it is a dropdown menu showing 'Last 24 Hours'.
- Start Time / End Time:** Two text fields showing '7/30/2013' and '7/31/2013' respectively. A callout bubble points to the 'Set as Default' checkbox with the text: 'Set as default search for the Log Activity tab'.
- Checkboxes:**
 - ☒ Include in my Quick Searches
 - ☒ Share With Everyone
 - ☐ Set as Default
 - ☒ Include in my DashboardA callout bubble points to the 'Include in my Dashboard' checkbox with the text: 'Allows you to add the search as an item to a dashboard'.
- Buttons:** 'OK' and 'Cancel' buttons at the bottom right.

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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

Search... ▼ Quick Searches ▼ Add Filter Save Criteria Save Results

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

(Show Charts)

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

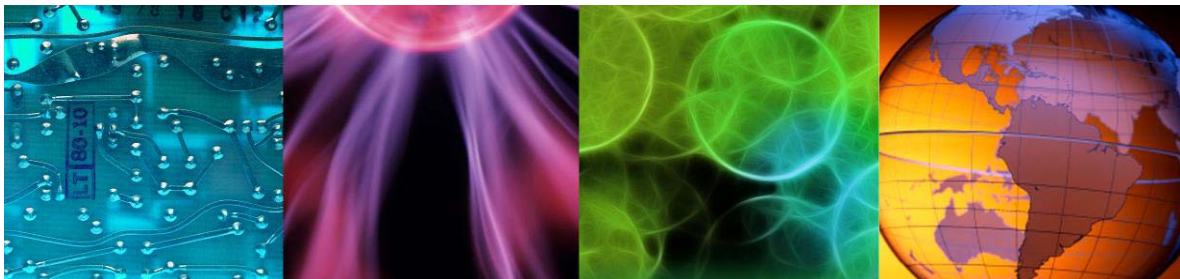
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Event list using the saved search

Lesson 5 Modifying saved searches



Lesson: Modifying saved searches

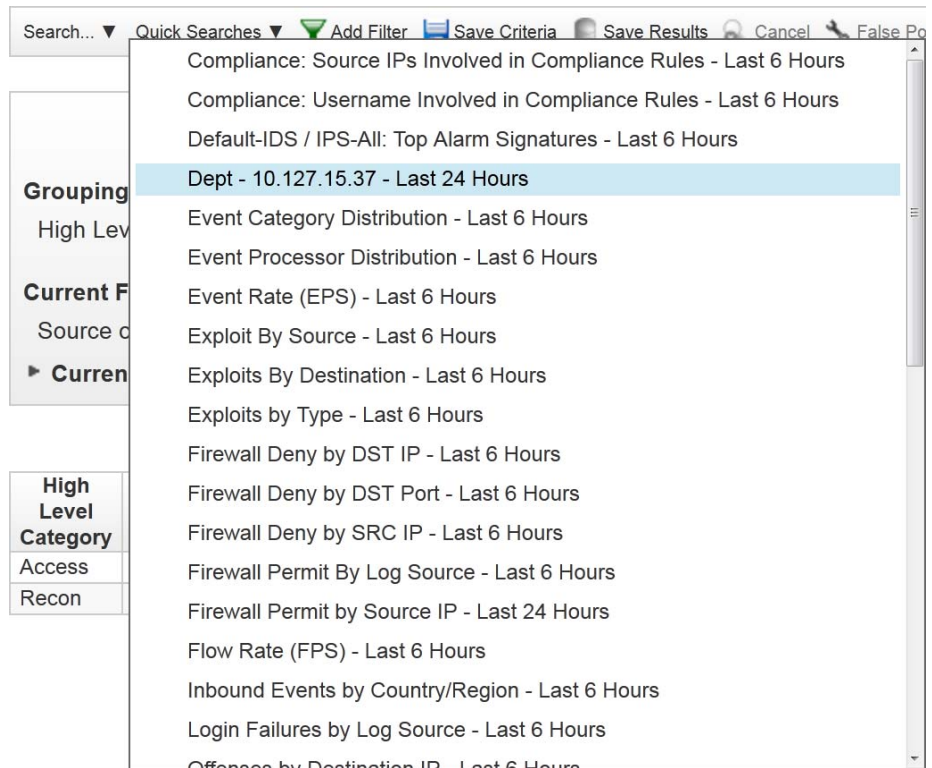


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To use QRadar SIEM effectively, manage and modify saved searches. In this lesson, you learn how to work with saved searches.

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



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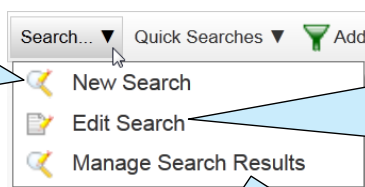
About Quick Searches

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

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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

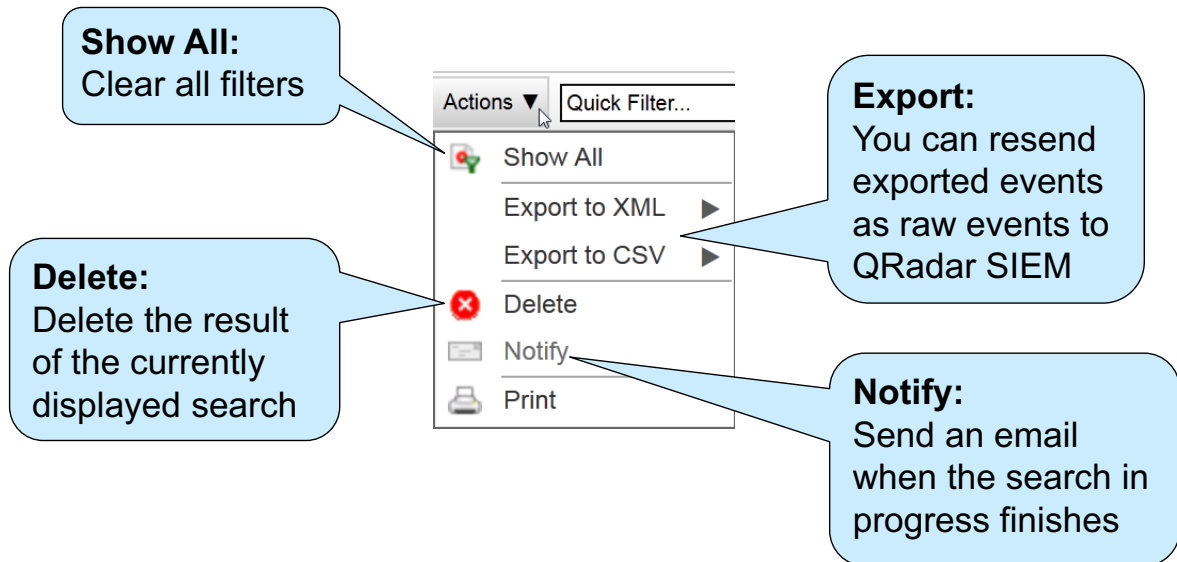
Load Delete

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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



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Search actions

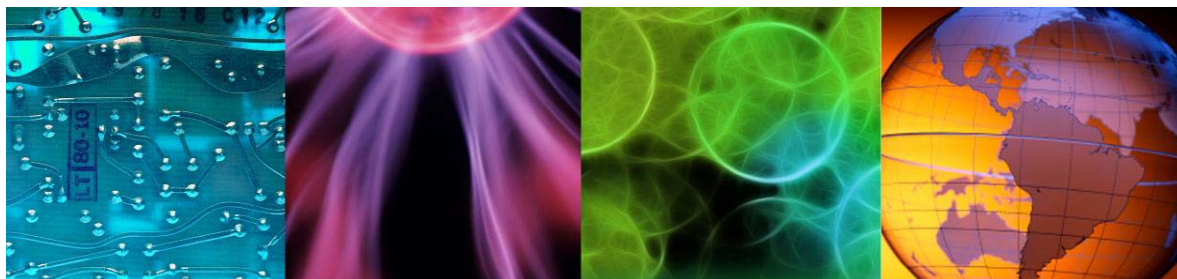
The following actions are available on the Quick Filter Search's **Action** menu:

- **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

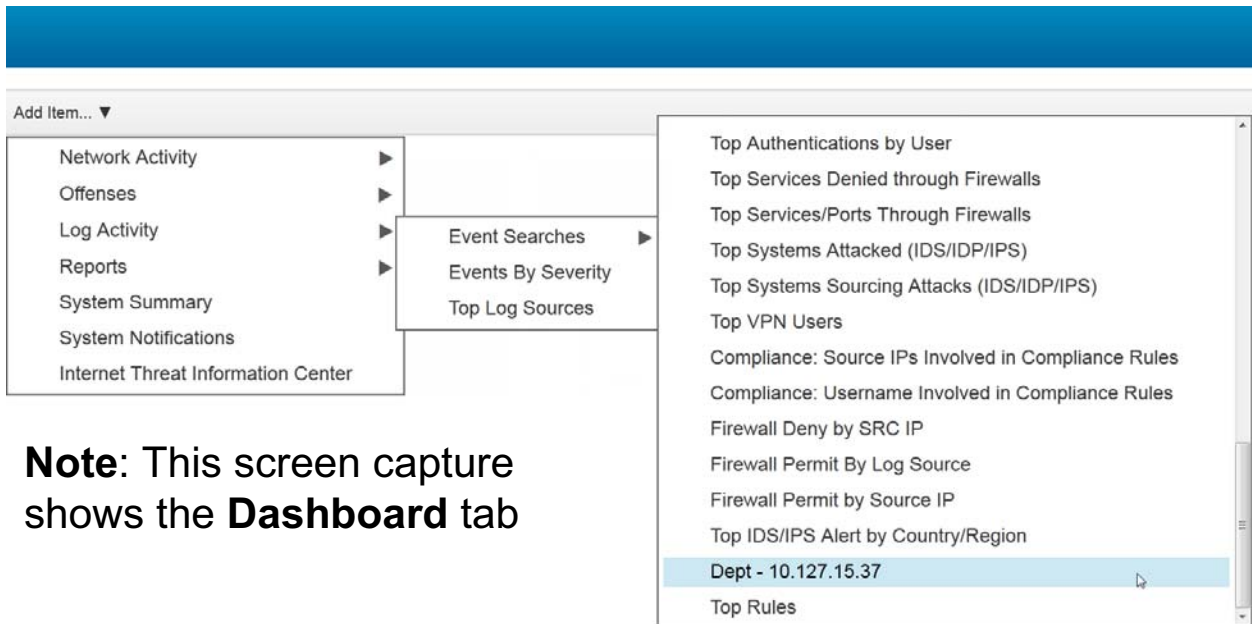


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Dashboard items display the results of searches. In this lesson, you learn how to add and edit a saved search to the dashboard.

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



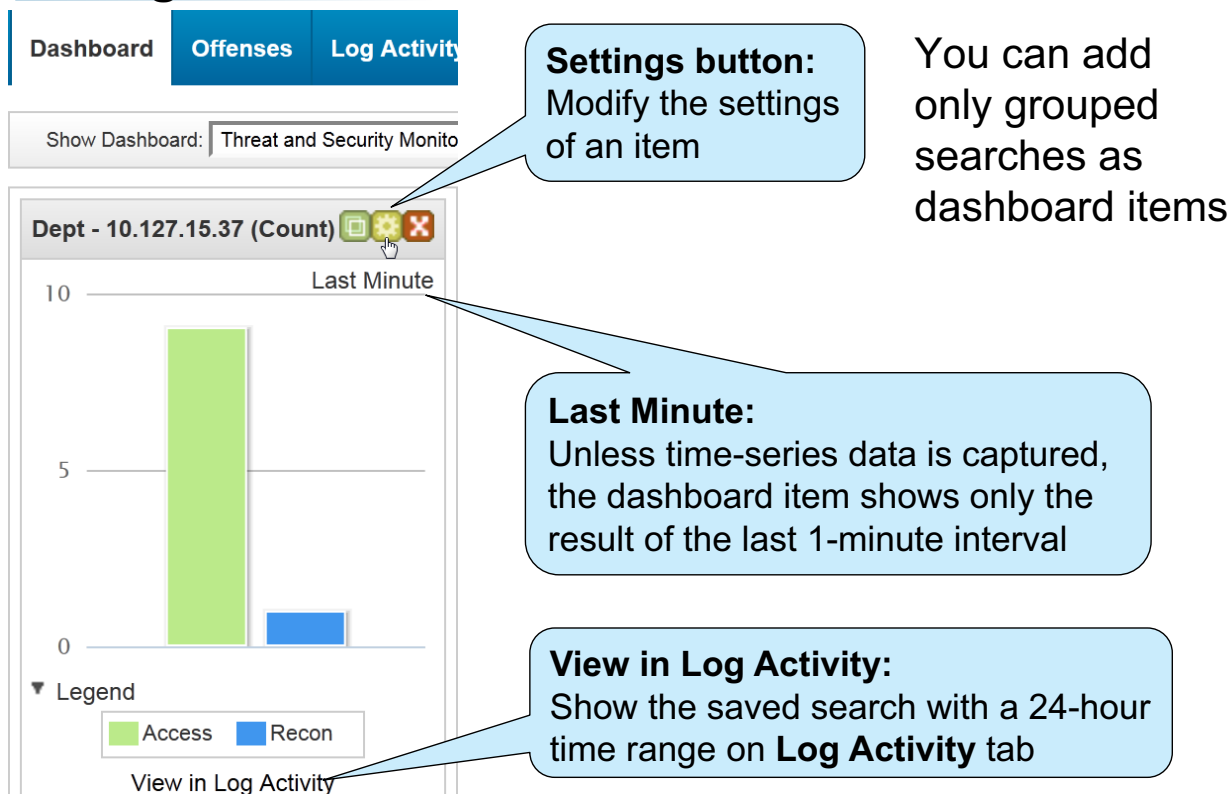
Note: This screen capture shows the **Dashboard** tab

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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



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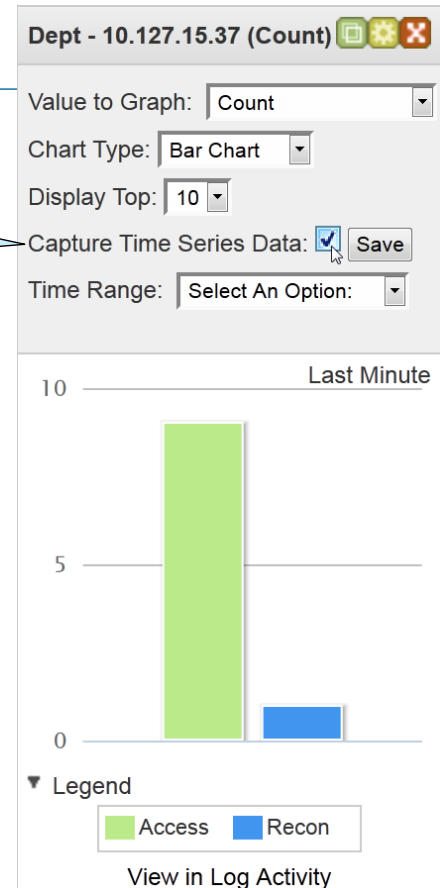
Saving a search as a dashboard item

Enabling time-series data

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



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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

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

Time Range:
Select **Last 24 Hours**

Dept - 10.127.15.37 (Count) [icon] [icon] [icon]

Value to Graph: * Count

Chart Type: Bar Chart

Display Top: 10

Capture Time Series Data: ☒ Save

Time Range: Select An Option:

- Select An Option:
- Last Minute
- 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
- Last 14 Days
- Last 28 Days
- Last 30 Days
- Last 31 Days
- Last 60 Days
- Last 90 Days
- Current Hour

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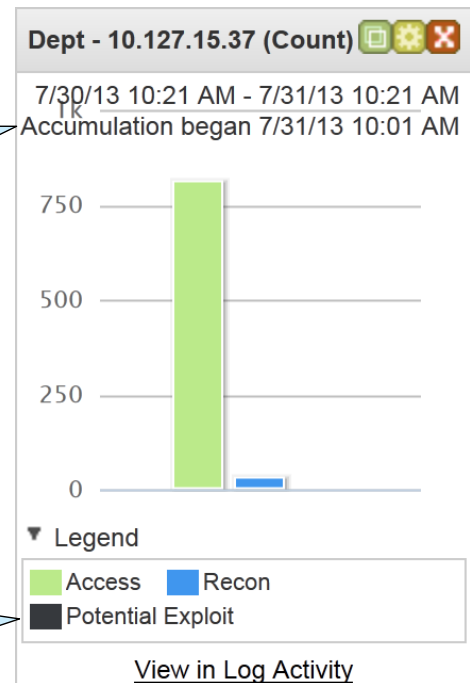
Selecting the time range

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



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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) [Icons]

Value to Graph: * Count

Chart Type: Table [Dropdown]

Display Top: [Dropdown]

Capture Time: [Dropdown]

Time Range: Select An Option: [Dropdown]

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

[View in Log Activity](#)

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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



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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

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Summary



6 Using asset profiles to investigate offenses



Using asset profiles to investigate offenses



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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

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Objectives

Lesson 1 Assets overview



Lesson: Assets overview



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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

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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

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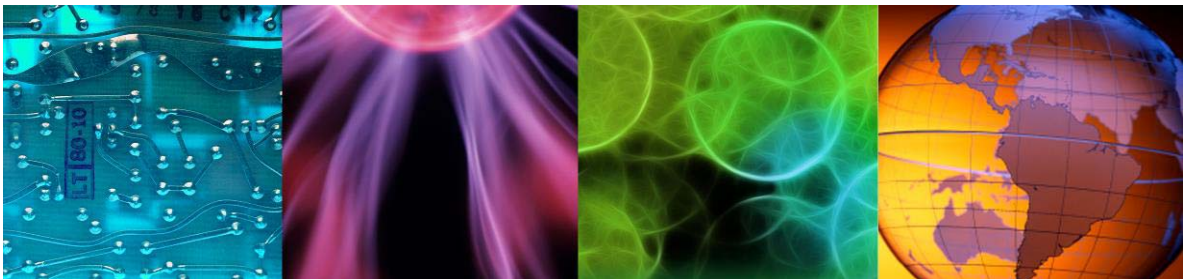
Creating asset profiles

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



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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		Net-10-172-192.Net_10_0_0

Navigate

Information

DNS Lookup

WHOIS Lookup

Port Scan

Asset Profile

Search Events

Search Flows

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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

Assets

Search ▼ Quick Searches ▼ Save Criteria Add Filter Add Asset Edit Asset Action

Id	IP Address	Asset Name	Aggregate CVSS Score	Vulnerabilities	Services
1008	10.26.10.5	MORIA	19.5	9	5
1001	192.168.10.10	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

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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

Display ▼ Edit Asset View By Network View Source Summary View Destination Summary History Applications Actions ▼

▼ Asset Summary

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

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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

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Vulnerabilities

Following are the Severity levels:

- Low
- Medium
- High
- Critical
- Urgent

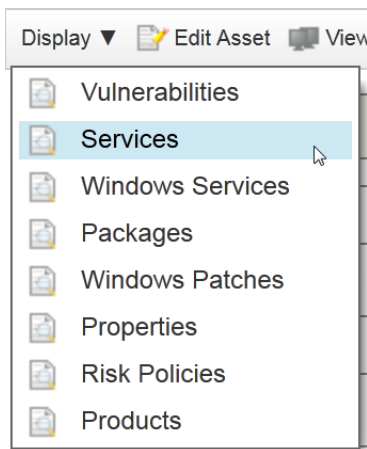


Hint: Refer to the PCI Security Standards Council (<https://www.pcisecuritystandards.org>) for more information about PCI severity levels.

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

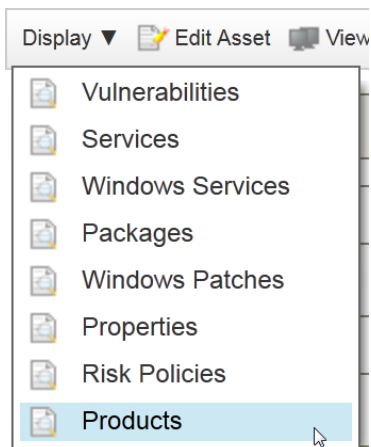
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Services



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

▼ Products			
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)

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Products

Summary

Now you should be able to perform the following tasks:

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

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Summary



7 Investigating an offense that is triggered by flows



Investigating an offense that is triggered by flows



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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

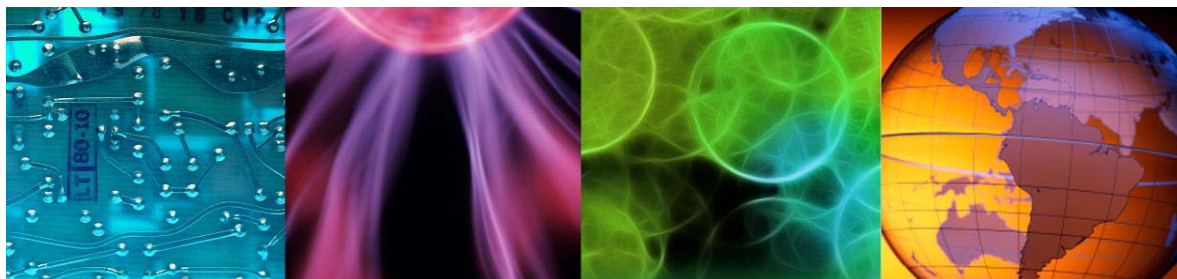
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Objectives

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

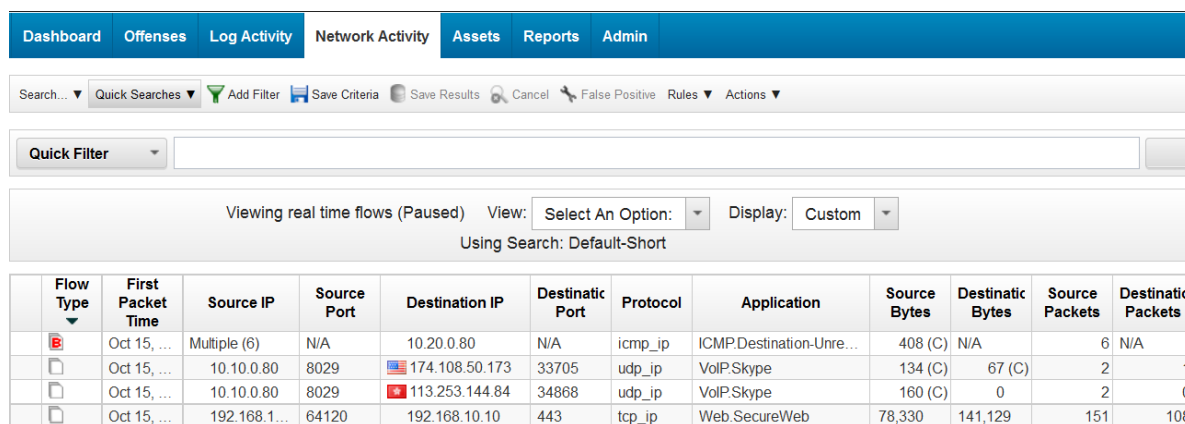
- A flow provides information about network communication between two systems
- A flow can include information about the conversation, such as these examples
 - Source and destination IP address
 - Protocol transport
 - Source and destination port
 - Application information
 - Traffic statistics
 - Quality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

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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



Flow Type	First Packet Time	Source IP	Source Port	Destination IP	Destination Port	Protocol	Application	Source Bytes	Destination Bytes	Source Packets	Destination Packets
Ⓛ	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	VolP.Skype	134 (C)	67 (C)	2	1
Ⓛ	Oct 15, ...	10.10.0.80	8029	113.253.144.84	34868	udp_ip	VolP.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

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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

► Current Statistics

Application	Source IP (Unique Count)	Source IP (Unique Count)	Destination IP (Unique Count)
other	Multiple (18)	Multiple (18)	Multiple (18)
Multimedia.Intellex	10.20.0.80	Net_10_0_0_0	Multiple (16)
FileTransfer.NETBIOS	192.168.10.1	Net_192_168_10_1	Multiple (16)
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

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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:

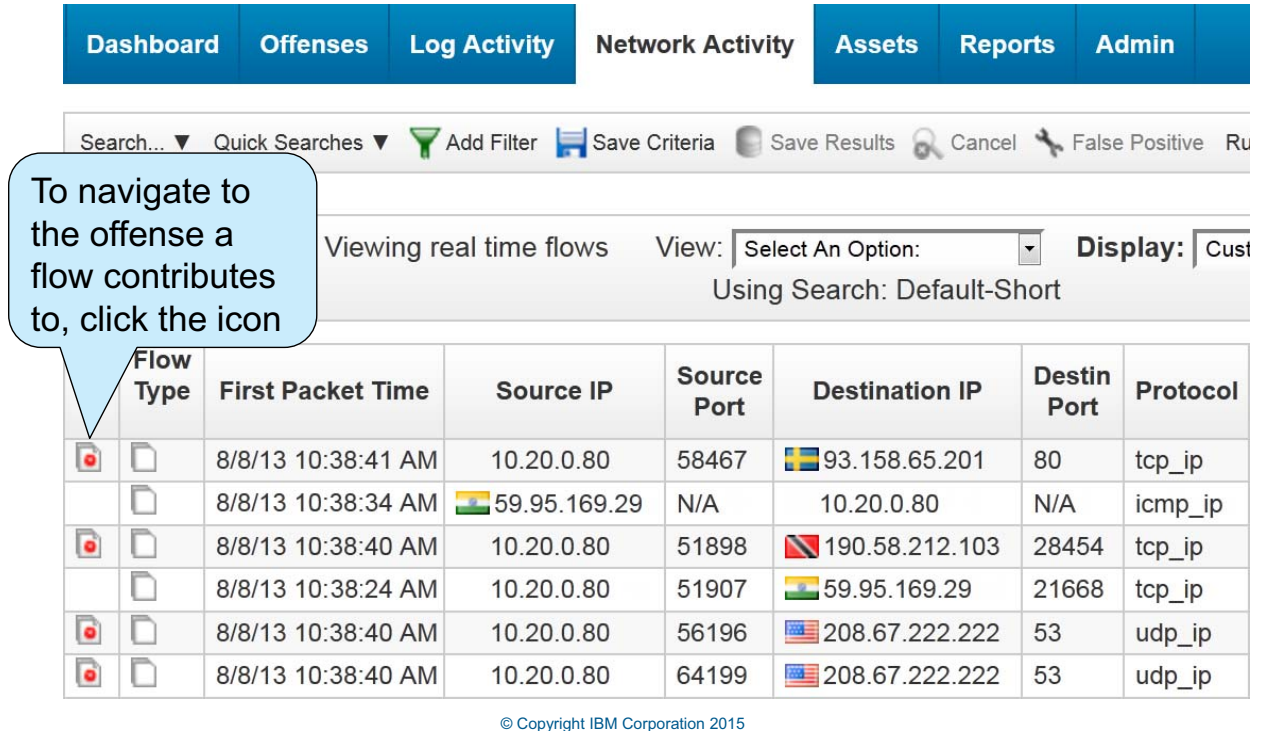
- **Display > Default (Normalized):** To remove a grouping, select **Default (Normalized)**.
- **Display > Unioned Flows:** QRadar SIEM works in 1-minute cycles. When the minute is over, the event processors send the events and flows they processed to the console (only if they are needed on the console). 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



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

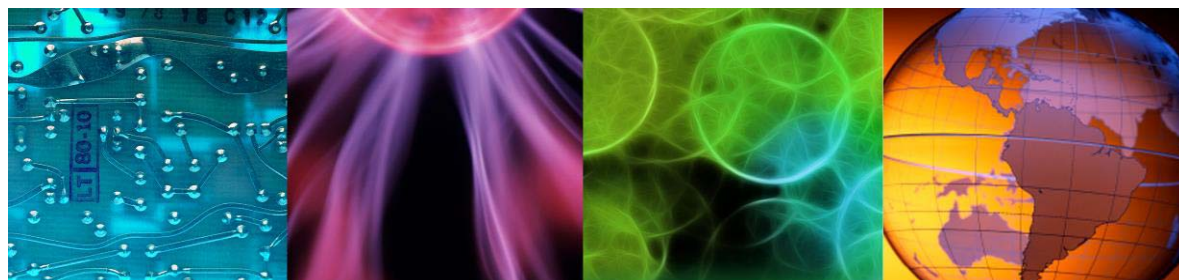
Finding an offense

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



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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

Offense 1									
Summary Display Events Flows Actions Print ?									
Magnitude				Status		Relevance	3	Severity	4
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				

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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

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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					
Log Sources					
Name	Description	Group	Events/Flows	Offenses	Total Events/Flows
Custom Rule Engine-8...	Custom Rule Engine		1	<u>3</u>	19

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

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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							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 ...			

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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						 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...

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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	Destination 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

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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		Annotations
		Time 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.		

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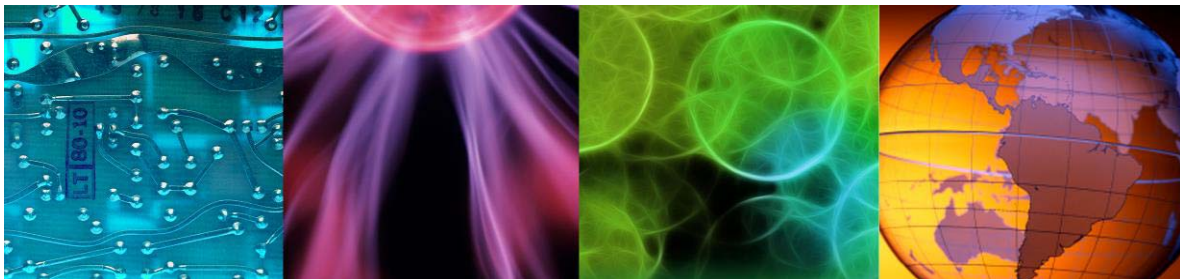
Annotations

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



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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 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

Flow Information					
Protocol:	tcp_ip	Application:	Web.Misc		
Magnitude:	■ ■ ■ (6)	Relevance:	10	Severity:	1
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				

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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, 260 bytes	Destination Payload:	3 packets, 266 bytes

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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

Source Payload	Destination Payload
utf hex base64 ☐ Wrap Text GET /torrent/CentOS-6.0-i386-bin-DVD/3184478934b9ab6edfc40a9b811	utf hex base64 ☐ Wrap Text 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

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

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Additional information

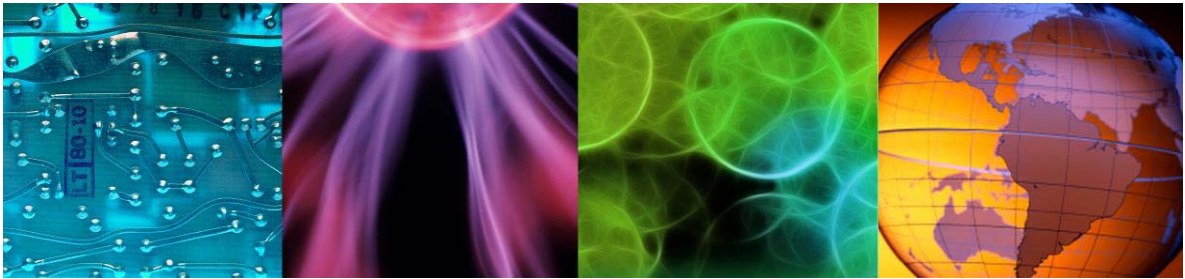
The **Flow Direction** field can include the following values:

- **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

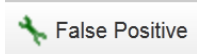


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Each organization has legitimate network traffic that can trigger false positive flows and events. This traffic creates noise that makes it difficult to identify true security incidents. In this lesson, you learn how to tune a flow or event as false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



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

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



False Positive

False positive tuning allows you to prevent 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

Cancel

Tune

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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

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Tuning a false positive flow or event

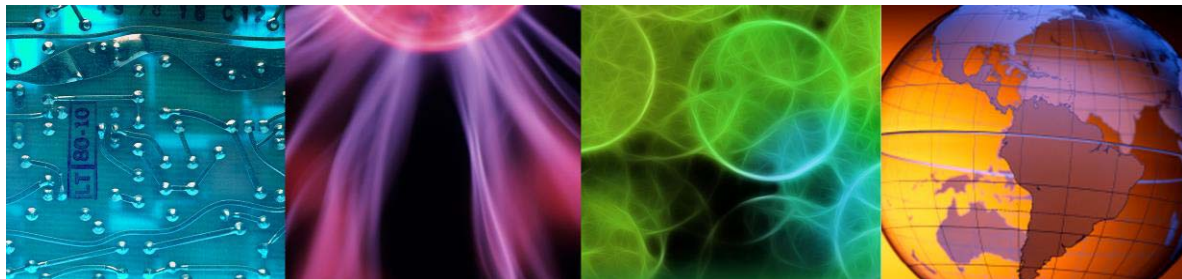
QRadar SIEM considers all networks in the network hierarchy local. You find the network hierarchy on the **Administration** tab.

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



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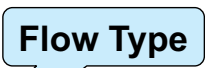
A superflow is a flow that is an aggregate of a number of flows that have a similar set of elements. In this lesson, you learn how to find the information stored in a superflow.

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	Source IP	Source Port	Destination IP	Des Por	Protocol	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

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About superflows

Following are some of the benefits of superflows:

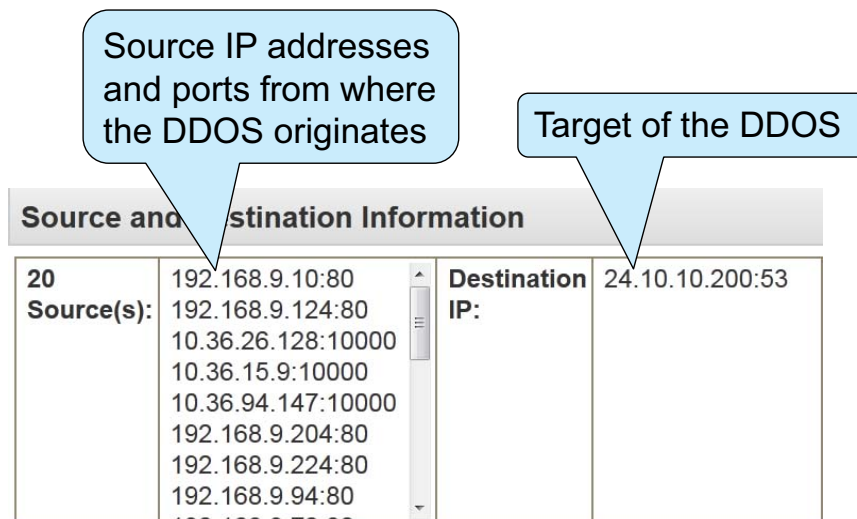
- Reduced traffic from QFlow collectors
- Store only a single flow to disk

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 and Destination Information			
20 Source(s):	192.168.9.10:80 192.168.9.124:80 10.36.26.128:10000 10.36.15.9:10000 10.36.94.147:10000 192.168.9.204:80 192.168.9.224:80 192.168.9.94:80 ...	Destination IP:	24.10.10.200:53

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Superflow source and destination information

Superflow additional information

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

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

Flow Type

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Superflow additional information

Student exercises

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



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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

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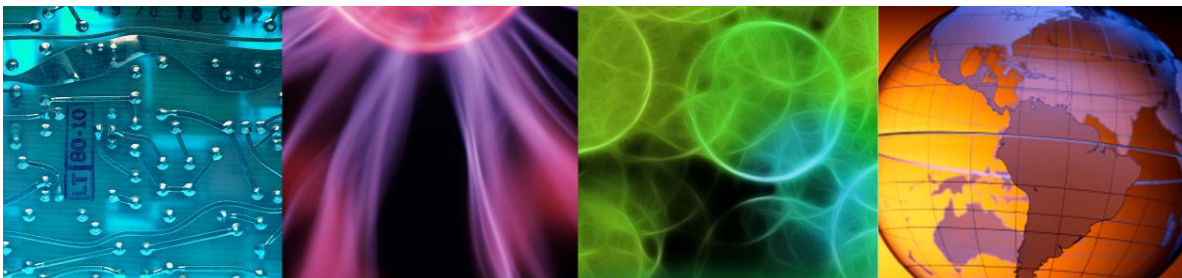
Summary



8 Using rules and building blocks



Using rules and building blocks



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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

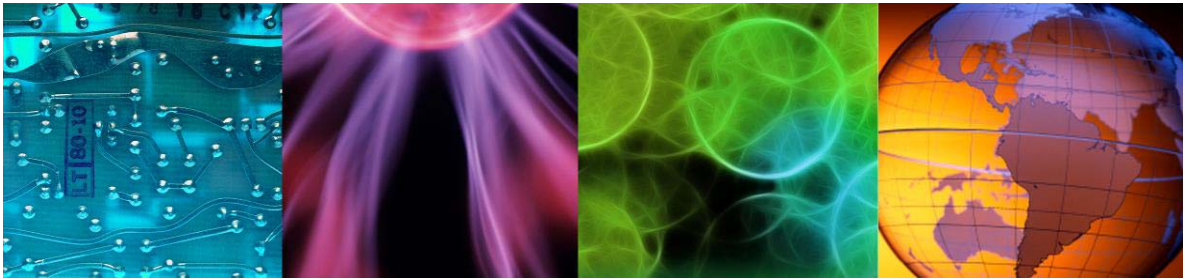
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Objectives

Lesson 1 Rules and build blocks overview



Lesson: Rules and building blocks overview



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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 ...

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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

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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

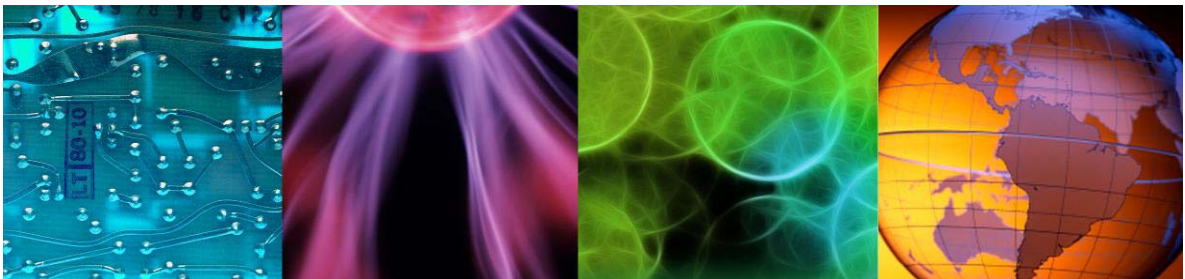
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About building blocks and functions

Lesson 2 Locating rules



Lesson: Locating rules



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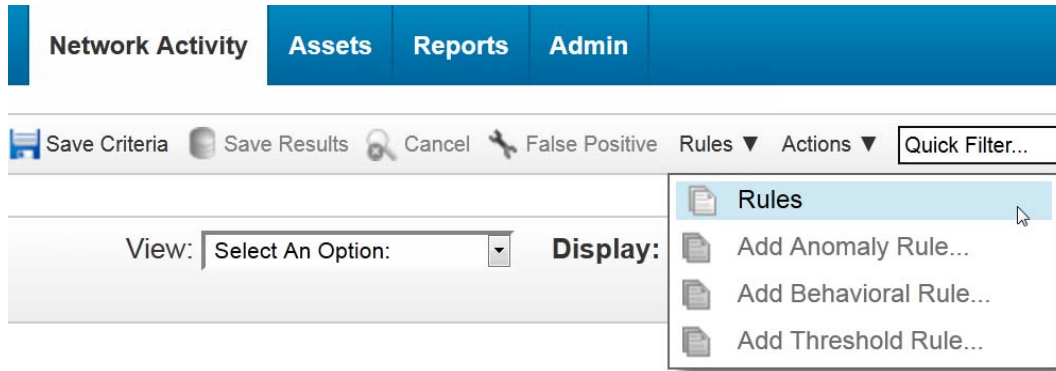
QRadar SIEM offers various options to navigate and list rules. In this lesson, you learn how to locate rules in general and find specific rules that fired for an event, flow, and offense.

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



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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:

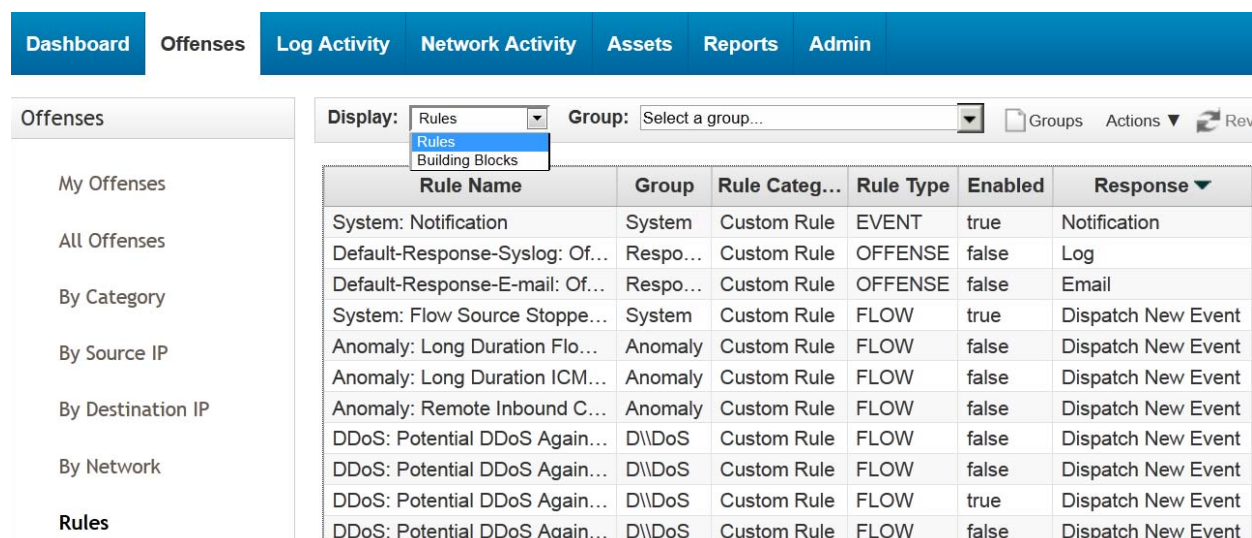
1. Anomaly detection rules that test the results of saved flow or event searches to detect when unusual traffic patterns occur in your network
2. Behavioral rules that test event and flow traffic according to seasonal traffic levels and trends
3. Threshold rules that test event and flow traffic for activity 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



The screenshot shows the IBM Security QRadar SIEM interface. The top navigation bar includes tabs for Dashboard, Offenses, Log Activity, Network Activity, Assets, Reports, and Admin. The Offenses tab is active. On the left, there is a sidebar with options: My Offenses, All Offenses, By Category, By Source IP, By Destination IP, By Network, and Rules. The main area displays a table of rules. The 'Display' dropdown is set to 'Rules', and the 'Group' dropdown is set to 'Select a group...'. The table has columns: Rule Name, Group, Rule Categ..., Rule Type, Enabled, and Response. The table lists several rules, including System: Notification, Default-Response-Syslog: Of..., Default-Response-E-mail: Of..., System: Flow Source Stoppe..., Anomaly: Long Duration Flo..., Anomaly: Long Duration ICM..., Anomaly: Remote Inbound C..., DDoS: Potential DDoS Again..., and DDoS: Potential DDoS Again... (repeated).

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

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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

This rule added the first annotation below

This rule created the offense this flow contributes to

The rules listed above added the annotations

Additional Information

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

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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

Offense 1

Summary Display Events Flows Actions Print ?

Magnitude		3	Severity	4	Credibility	2
Description	Potential Botnet Activity containing Misc.domain	204 flows in 6 categories				
Source IP(s)	10.20.0.80 (10.20.0.80)	11:22:02 AM				
Destination IP(s)	192.168.1.2 Remote (81)					
Network(s)	Multiple (2)					

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

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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



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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



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Rule Wizard demonstration

Rule Wizard

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

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

Learn about the rule's purpose and tests

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.
The host should be investigated for malicious code.

Next >> Finish Cancel

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

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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 Wizard - Rule Response

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 this point forward, for 300 second(s), in the offense

notate flow

Callouts:

- 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

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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

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Callouts:
- Left: Again, the rule triggers an offense if it does not already exist
- Right: To alert, the rule makes the CRE create a new event

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



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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

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Summary



9 Creating QRadar SIEM reports



Creating QRadar SIEM reports



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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

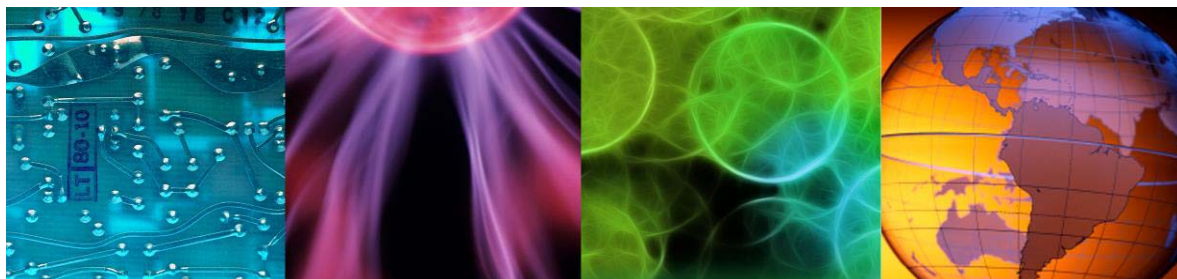
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Objectives

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

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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



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Reporting demonstration

Reports tab

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

Group: Reporting Groups ☐ Manage Groups Actions ☒ Hide Inactive Reports Search Reports...

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

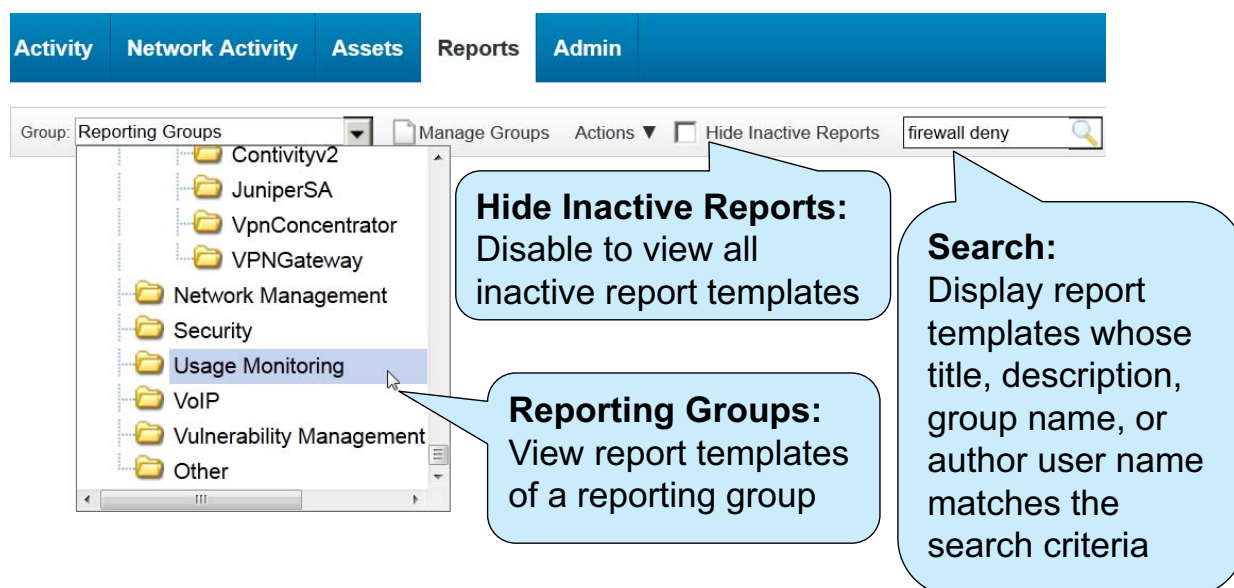
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Reports tab

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



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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:

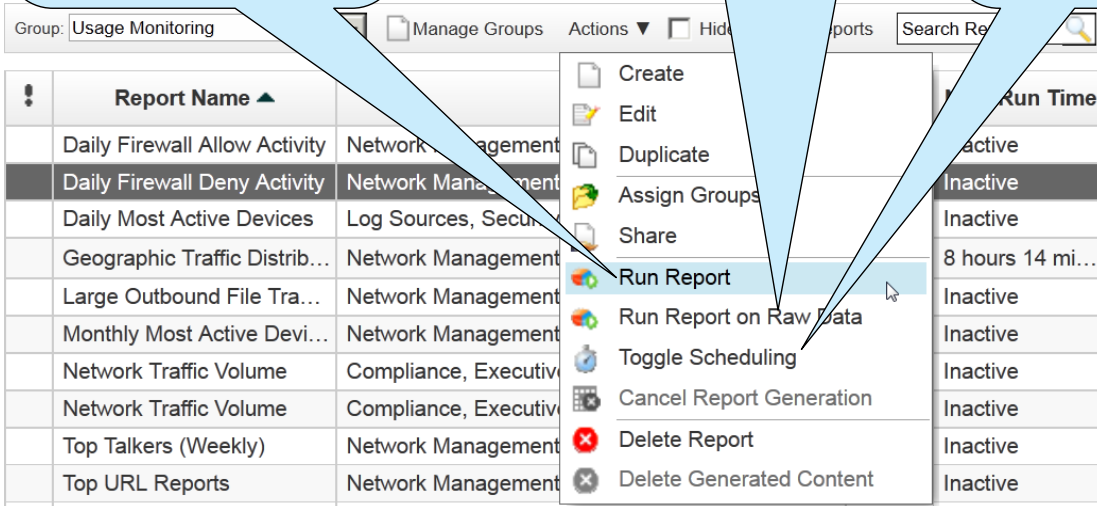
Run selected report template immediately, regardless of its schedule or active or inactive state

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



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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

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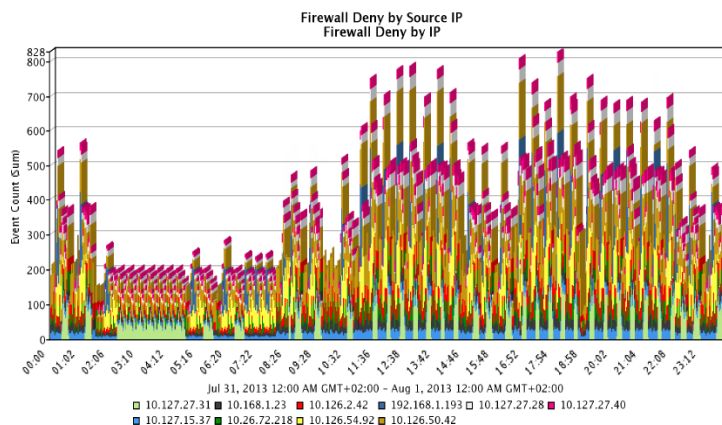
Selecting the generated report

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

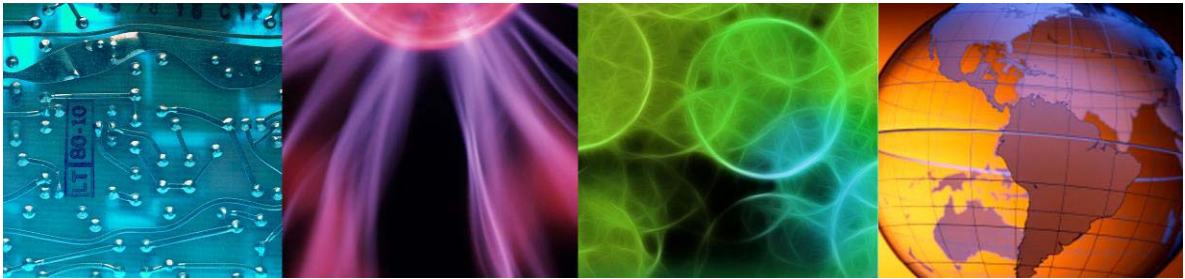
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Viewing a report

Lesson 2 Creating a report template



Lesson: Creating a report template



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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

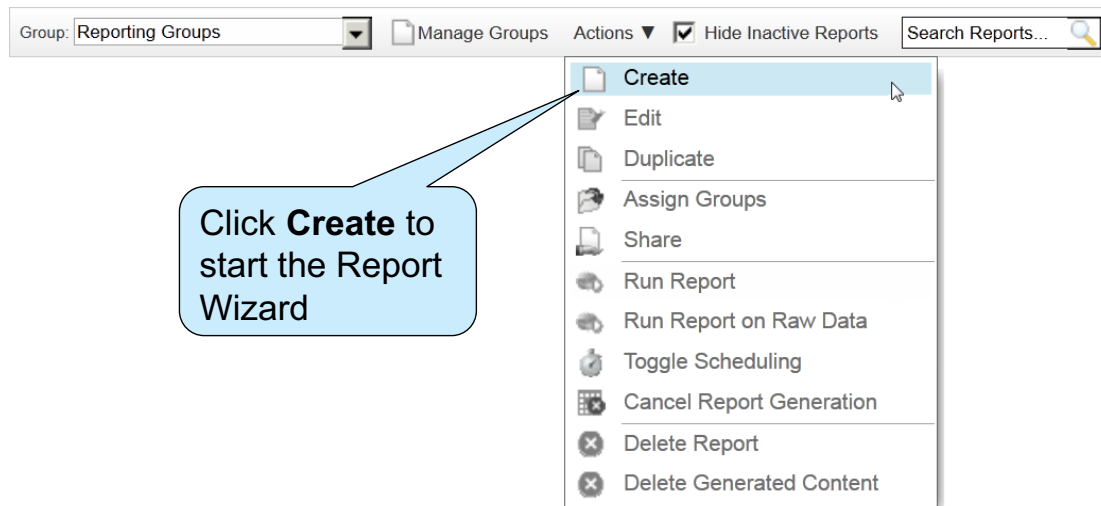


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Reporting demonstration

Creating a new report template

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

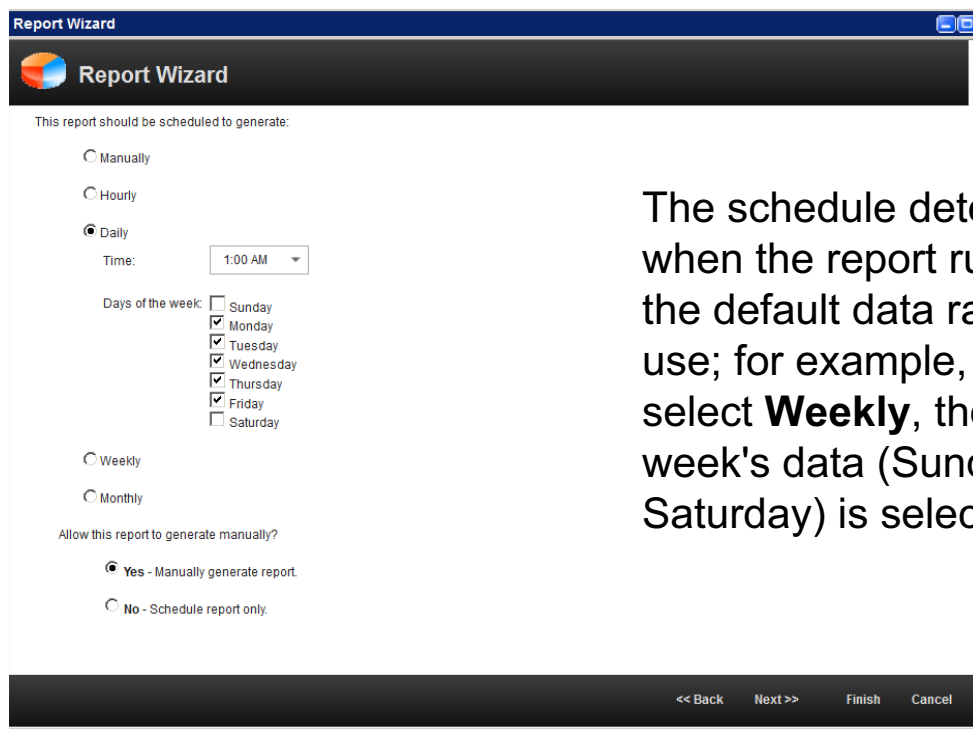


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Creating a new report template

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

Choosing a schedule



The screenshot shows the 'Report Wizard' window. The title bar says 'Report Wizard'. Below the title bar, there's a logo and the text 'Report Wizard'. The main content area has the heading 'This report should be scheduled to generate:'. There are four radio buttons for scheduling: 'Manually', 'Hourly', 'Daily', and 'Weekly'. The 'Daily' option is selected. Below 'Daily', there's a 'Time:' dropdown menu set to '1:00 AM'. Below that, there's a 'Days of the week:' section with checkboxes for Sunday through Saturday. Monday through Friday are checked, while Sunday and Saturday are unchecked. Below the 'Daily' section, there are radio buttons for 'Weekly' and 'Monthly'. At the bottom of the main content area, there's a section titled 'Allow this report to generate manually?' with two radio buttons: 'Yes - Manually generate report.' (selected) and 'No - Schedule report only.'. At the very bottom of the window, there's a dark bar with four buttons: '<< Back', 'Next >>', 'Finish', and 'Cancel'.

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

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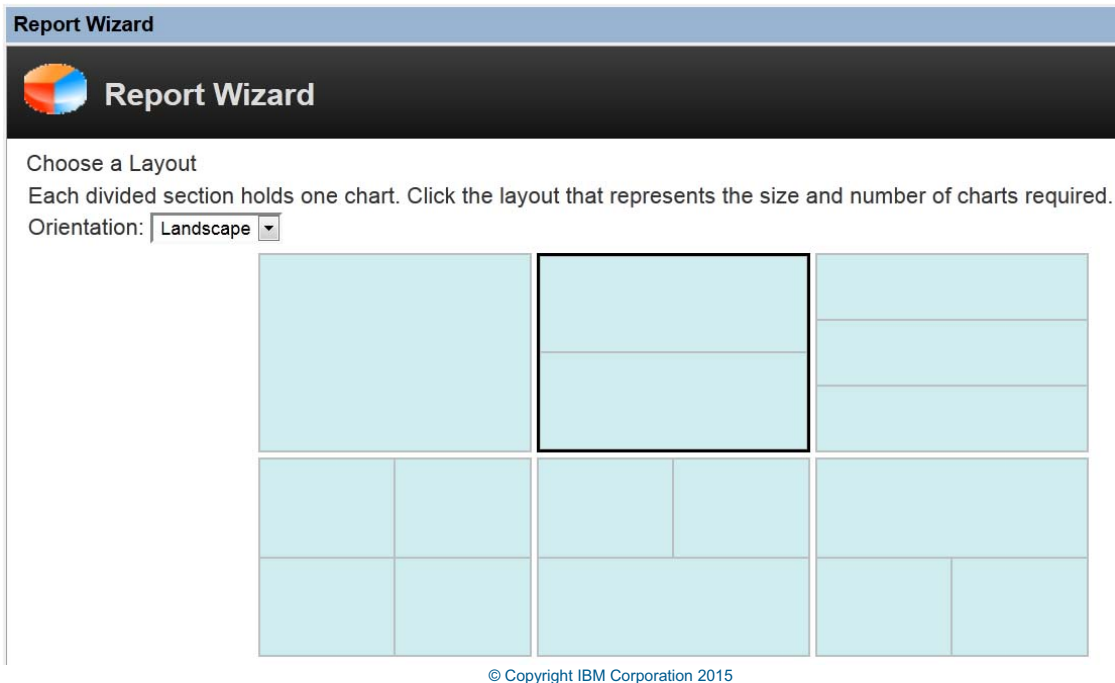
Choosing a schedule

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



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

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: Logo:

Chart Type:
None
Asset Vulnerabilities
Events/Logs
Flows
Log Sources
Top Destination IPs
Top Offenses
Top Source IPs

Chart Type:
None

Define

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

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

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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

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

The screenshot shows the 'Report Wizard' interface with the following sections:

- Container Details - Events/Logs**
This report displays collected event/log data.
- Chart Title:** FW Activity 10.127.15.137 by High Level Category
- 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 Gateway: warnings
Dept - 10.127.15.37

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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: ▼

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Configuring the upper chart (continued)

Configuring the lower chart

Define a chart
for firewall
activity

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

The screenshot shows the 'Report Wizard' interface with the following sections:

- 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

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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:

Limit Events/Logs to Top:

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Configuring the lower chart (continued)

Verifying the layout preview

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

Report Wizard

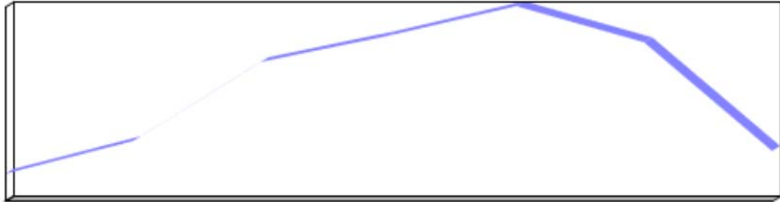
 **Report Wizard**

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

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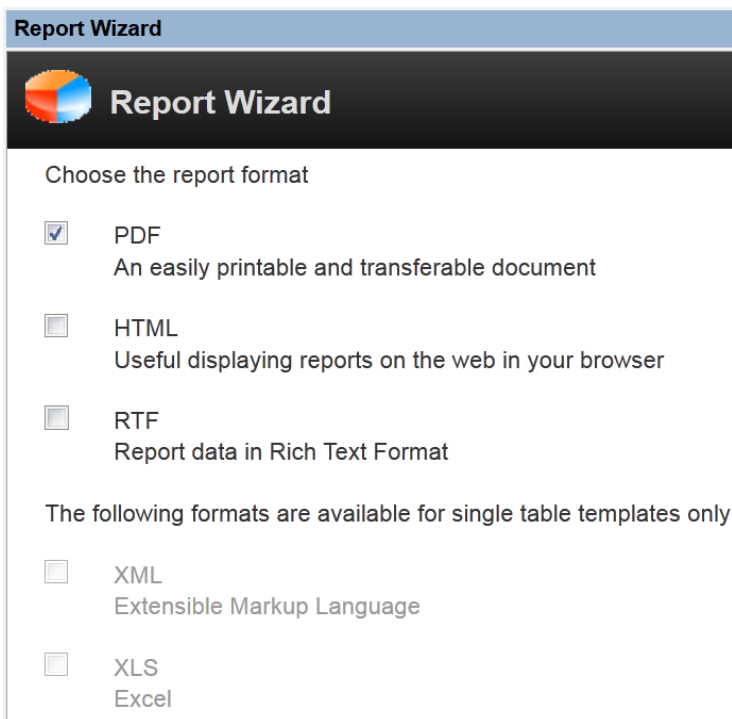
Verifying the layout preview



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



The screenshot shows the 'Report Wizard' window. At the top, there's a header with the 'Report Wizard' title and a logo. Below the header, the text 'Choose the report format' is displayed. There are three radio button options: 'PDF' (selected), 'HTML', and 'RTF'. Each option has a description: 'PDF' is 'An easily printable and transferable document', 'HTML' is 'Useful displaying reports on the web in your browser', and 'RTF' is 'Report data in Rich Text Format'. Below these, a section titled 'The following formats are available for single table templates only' lists 'XML' (Extensible Markup Language) and 'XLS' (Excel), both with unchecked checkboxes.

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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

Allow users to view the generated report

Distribute the report by email

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):

☒ Include Report as attachment (non-HTML only) ☐ Include link to Report Console

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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

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Adding a description and assigning the group

Verifying the report summary

Report Wizard

 **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.

Template Details

Container 1

Container 2

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

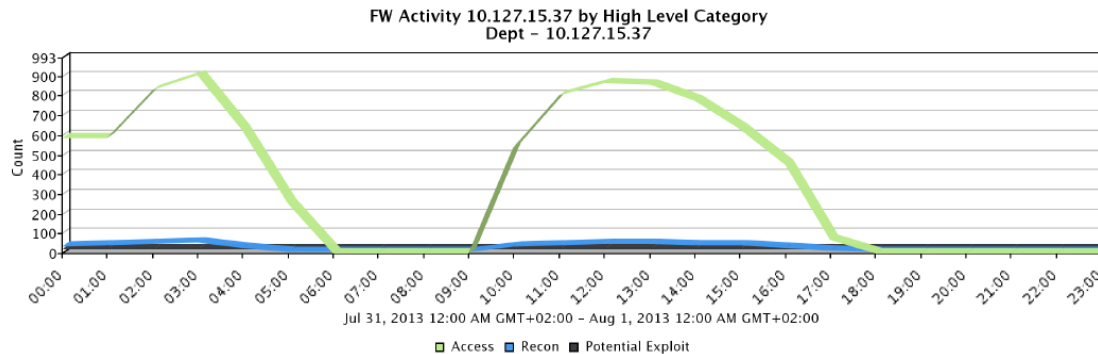
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Verifying the report summary

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

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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

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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



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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

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Summary



10 Performing advanced filtering



Performing advanced filtering



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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

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Objectives

Lesson 1 Filtering scenarios



Lesson: Filtering scenarios



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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

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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

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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

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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										
(Show Charts)										
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

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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

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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	Destination 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

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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

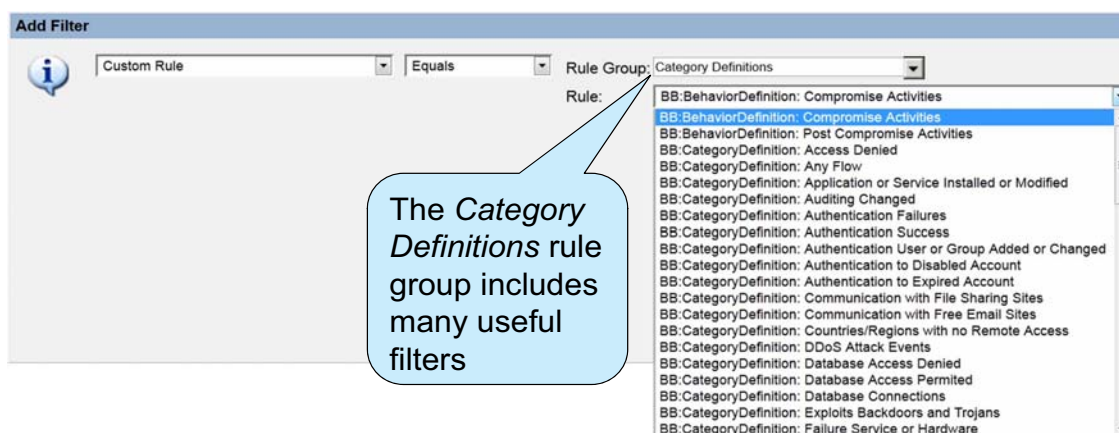
Note: Using the **Remote Networks** and **Remote Services** filters, QRadar SIEM administrators can identify customers and trusted networks and malware sources

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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

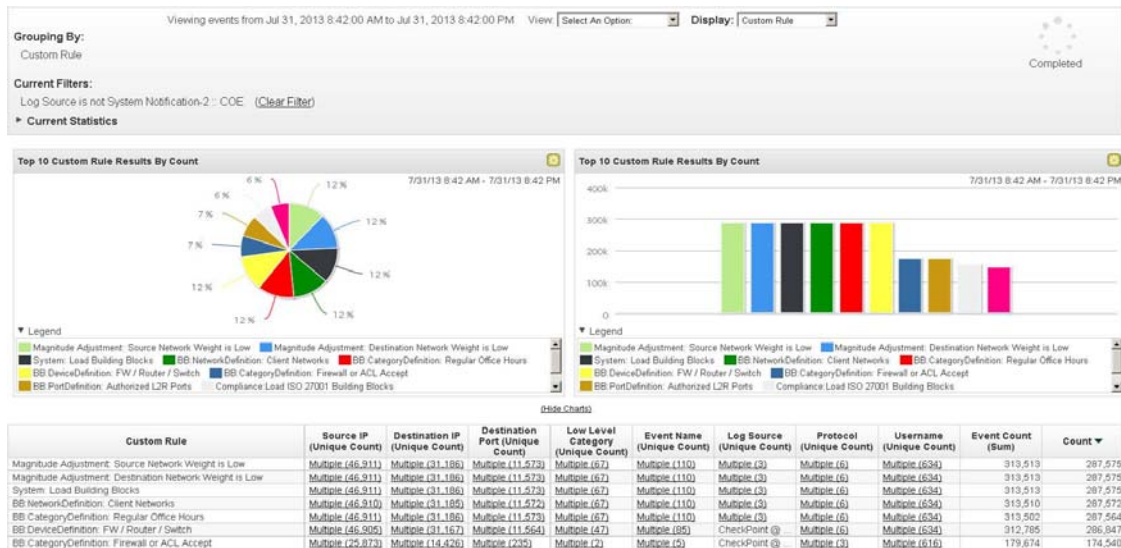


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Filtering on custom rules and building blocks

Grouping by custom rules

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



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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



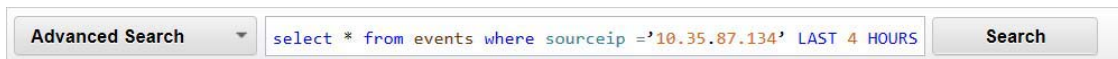
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QRadar features an advanced search facility using the Ariel Query Language (AQL). This lesson teaches you to use the AQL to construct advanced queries from one screen.

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



The screenshot shows the 'Advanced Search' tab selected in the QRadar GUI. The search query entered is: `select * from events where sourceip ='10.35.87.134' LAST 4 HOURS`. A 'Search' button is visible to the right of the query input field.

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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

Advanced Search Search

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

Advanced Search Search

- 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`

Advanced Search Search

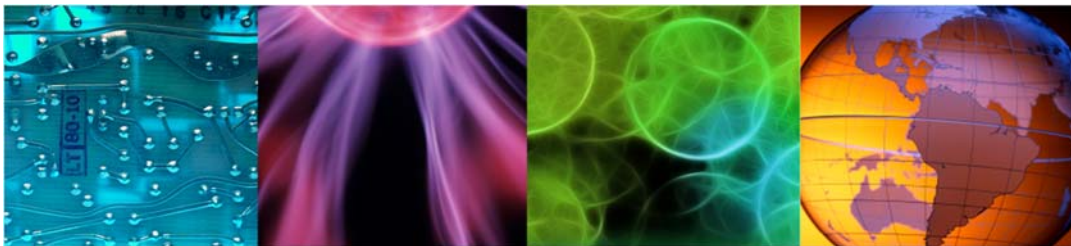
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Additional AQL examples

Lesson 3 Using charts



Lesson: Using charts



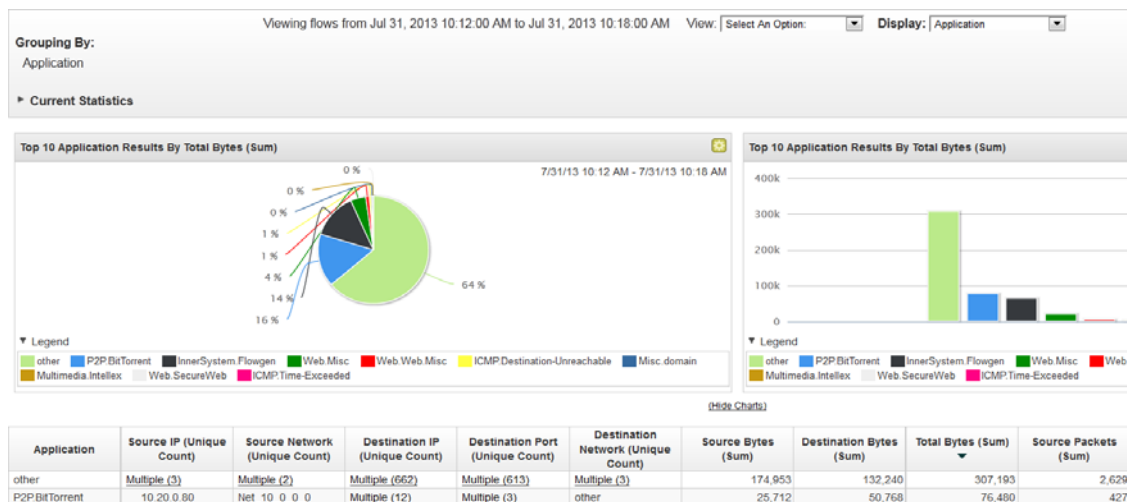
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Charts graph log or network activity and are used to determine short- and long-term data trends. In this lesson, you learn how to use time-series and other charts to view log or network activity.

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



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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:

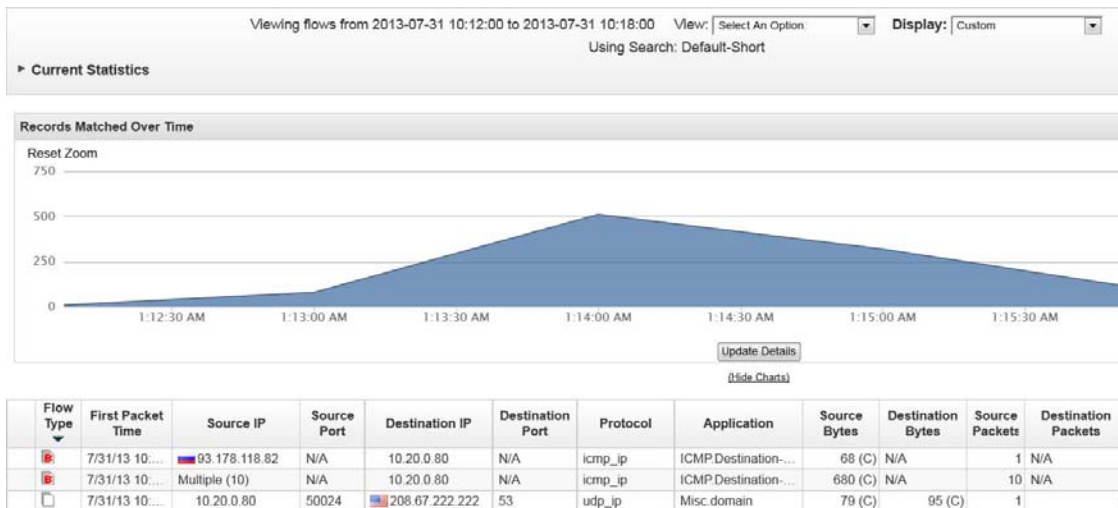
- Change the event view using the Display list
- Apply a filter
- Save the search criteria

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



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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

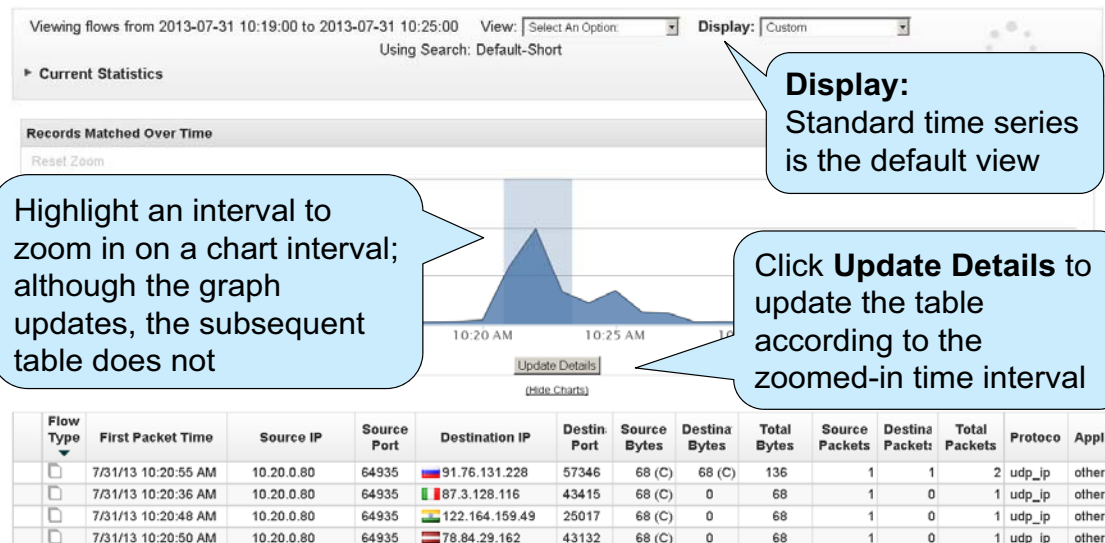
Note: Charts containing old data appear coarse-grained because QRadar SIEM deletes fine-grained accumulations earlier than the coarse-grained accumulations

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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

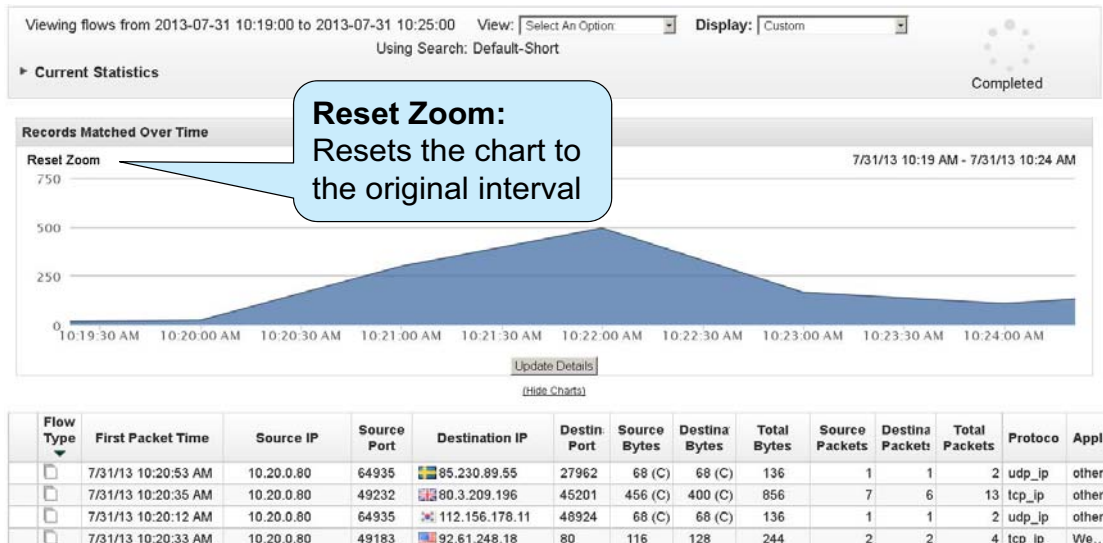


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Viewing time series charts: Zooming to focus

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



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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

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Summary

