ForeScout CounterACT® 8 Licensing and Sizing Guide

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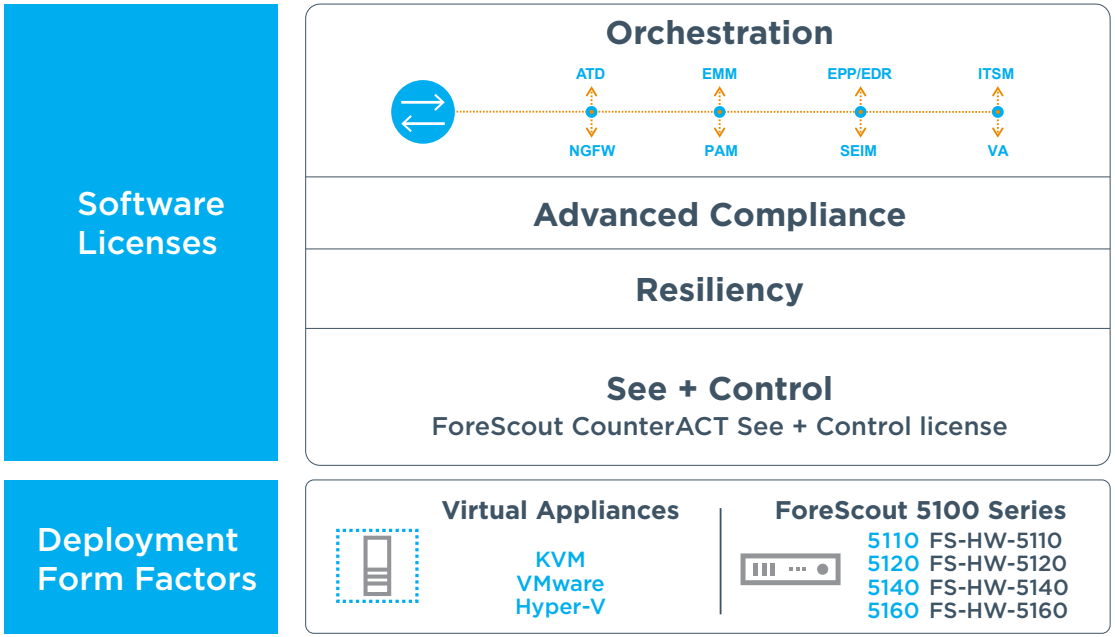
Introduction

ForeScout is introducing a new, flexible licensing model, ForeScout® Flexx, a software-centric licensing approach that provides an intuitive and flexible way to license, deploy and manage ForeScout products. Flexx licensing gives organizations deployment flexibility and license portability to efficiently use the ForeScout platform across their extended enterprise—from campus and data center to cloud and operational technology.

This new licensing model decouples hardware from software. With ForeScout Flexx, customers can:

- Order software licenses separately and independent from appliances
- Use a centralized license pool across appliances and network segments
- Leverage ubiquitous, portable licenses across different device types
- Share licensed capacity across campus, data center, cloud and OT
- Spin up unlimited virtual appliance instances as needed
- Centrally administer and manage license entitlements and allocations
- Access a unified Customer Portal for license management, software downloads, documentation and support



ForeScout Flexx Licensing

ForeScout Flexx is a software-centric licensing approach that puts the power in the hands of the customer. Flexx licensing allows you to deploy flexibly, manage efficiently and grow effectively across your environment. If you choose hardware appliances to be part of the deployment, you order appliances based on your performance requirements. The hardware appliances are independent of capacity licenses.

See and Control Licenses

ForeScout CounterACT® is a software-only solution that requires no dedicated hardware appliance but can be deployed on your existing virtual or physical servers. Licensing for this software platform provides you with ForeScout's See and Control capabilities, as well as the ForeScout Enterprise Manager software.

You also have a range of deployment form factors. For virtualized deployments, you can choose from VMware® vSphere®, Microsoft Hyper-V® and Linux KVM. If you prefer hardware appliances, four physical CounterACT appliances are offered from a desktop to a choice of three 1U rackmount appliances for small, medium and large requirements.

In addition to the See and Control license, ForeScout offers licenses for Resiliency, Advanced Compliance and Orchestration.

Resiliency

If you would like to configure your deployment to provide high availability or disaster recovery, you need ForeScout Resiliency licenses in addition to the CounterACT® See and Control base licenses. The resiliency license combines our high availability and failover software capabilities. In case of a software or hardware appliance failure, this additional software provides the intelligence to respond. Depending on the given failure situation, the software knows how to respond. Examples of what the software can do include:

- Move the workloads from a primary to a standby appliance (virtual or physical)
- Redistribute the workload from a failed appliance over a number of virtual and/or physical appliances
- Fail back to the original appliance by moving workloads back and restore them to the now-recovered virtual or physical appliances

Note that when deploying resiliency, additional virtual or physical appliances are required to have these available to take over workloads from a failed appliances.

Advanced Compliance and other Extended Modules

Depending on your different additional use cases, ForeScout sells add-on licenses to expand the base CounterACT see and control capabilities. For deployments requiring compliance with Security Content Automation Protocol (SCAP) standards, you need the ForeScout Extended Module for Advanced Compliance. For orchestrating, ForeScout offers add-on licenses for many integrations with other IT and security products. More information on various use cases, refer to Step 2 in the "Scoping your Needs" section in this document.

License Consumption

To understand how licenses will be consumed, you want to take into account how licenses are counted and what actions you would want to take when licenses have been exceeded:

What is counted for licensing?

The "endpoint count" is the maximum number of endpoints monitored by ForeScout products and licensed to customers, as specified in the order, using either a MAC address and/or IP address, whether on site, off site or detected by the ForeScout products via third-party integrations. More specifically:

- The device count is the maximum number of devices known to CounterACT by either their MAC addresses and/or their IP address. Devices may be detected by CounterACT when on site or off site, or they may be made known to CounterACT via third-party integrations. A device may be counted more than once if it uses multiple IP addresses and/or multiple MAC addresses. Devices include user endpoints (such as laptops, tablets and smartphones), network infrastructure devices (such as switches, routers and access points), non-user devices (such as printers, IP phones, security equipment, medical devices, manufacturing equipment) and virtual machines. Device information is retained in CounterACT from initial discovery until such time the information is purged, based on aging preferences set in CounterACT.

What if licenses have been exceeded?

To the extent that you have exceeded the license count purchased for your devices, you will need to do an "Endpoint Count True-Up" where you pay for the pro-rated fees for the number of additional licensing units required as well as the prorated fees for the associated ForeScout ActiveCare. Fees for both true-up licenses and ActiveCare are based on your most recent and applicable order(s).

Please refer to the End User License Agreement (EULA) for full details and latest information regarding ForeScout licensing: https://www.forescout.com/company/legal/eula.

Scoping Your Needs

To scope your licensing need, you want to take a four-step approach. First, determine how many devices you want to manage across your enterprise. Second, take into consideration your specific use cases. Finally, decide how you would like to deploy CounterACT as virtual and physical appliances options are available. Write down your requirements as you move through these steps.

Step 1: Determine how many devices you want to manage

To size your deployment, you must identify how many endpoint you are protecting. Remember that CounterACT can protect your devices connected to your campus networks as well as data center, cloud, IoT and operational technology (OT).

You want to determine all your traditional devices that are connecting to your campus and data center, including managed and unmanaged devices for employees, contractors and guests to your enterprise, as well as your network infrastructure devices and the number of ForeScout Enterprise Managers you want to deploy. In addition, include all of your virtual machines in your private and public clouds. Finally, remember that other devices are accessing your networks—printers, scanners, IP cameras and diverse Internet of Things devices. Beyond that, you may have OT devices and industrial control systems (ICS) on your networks that also need to be protected. Once you establish your list of devices, take into account how licenses are counted (see above in this document). Finally, include additional devices you may have for resiliency (failover or disaster recovery) and devices you may want as focal appliances for ForeScout Extended Modules.

ForeScout Enterprise Manager

Determine the number of ForeScout Enterprise Managers you want to deploy. Dedicate one of your software or hardware CounterACT appliances as your Enterprise Manager if you have two or more CounterACT appliances in your deployment. In small environments with a single CounterACT virtual or physical appliance, you don't need the Enterprise Manager, and the license file is installed on your single CounterACT appliance.

Step 2: Determine which use cases you want to solve

The ForeScout platform provides you with visibility and control for your devices from campus to data center to cloud and to extended to IoT and OT devices. In addition to these See and Control capabilities, you may have resiliency requirements for high availability or failover scenarios, and you may have advanced compliance mandates. Finally, ForeScout understands that you are deploying security solutions from other venders. To help you leverage these existing investments, ForeScout provides you with a large selection of ForeScout Extended Modules that provide integration and bi-directional data sharing across these security solutions.

See and Control is provided with our base license and provides comprehensive visibility and control:

The **See and Control** license includes the following functions:

See capabilities include:

- Discover IP-enabled endpoints connecting to the network via multiple discovery techniques included in ForeScout CounterACT
- Classify endpoints by device type, operating system (OS), version and ownership
- Ability to create classification policies for endpoints that are not classified out of the box
- Assess endpoint security posture agentlessly or via the use of SecureConnector
- Alert administrators and other IT systems via email, Syslog or common event format (CEF) messages about policy compliance and other relevant endpoint context
- Notify users via email, on-screen messages and HTTP redirection about security and compliance policies

Control capabilities include:

- Network controls and actions:
  - Restrict access to network resources based on user role, device and security posture (virtual [VLAN], access control list [ACL], virtual firewall)
  - Block rogue network infrastructure and unauthorized devices
  - Turn off switch, wireless or VPN access based on policies
  - Quarantine infected, vulnerable or noncompliant endpoints
  - Move endpoint to remediation VLAN
  - Guest management capability to sponsor, onboard and provide appropriate access for wireless guest users
  - Authenticate users and devices using 802.1X and provide appropriate access
- Host-based controls and actions:
  - Install and update anti-virus and other required security agents
  - Start mandatory applications, services and processes
  - Terminate unauthorized applications and processes
  - Disable peripheral devices and dual-homed interfaces
  - Trigger external/third-party remediation systems

Resiliency

ForeScout offers a license that provides you with deployment and configuration flexibility. You can choose what is best for your resilience requirements: failover or high availability deployment. You only need to buy sufficient licenses to cover the devices for which you require resiliency.

With the Resiliency license, you gain the following additional capabilities:

- Provide resiliency for CounterACT services
- Protect against single- or multipoint failures
- Support centralized and distributed CounterACT deployments
- Automate failover and intelligent reallocation of workloads
- Help meet IT service continuity mandates
- Enable cross-site failover for disaster recovery scenarios
- Perform manual failover to facilitate maintenance procedures and upgrades
- Avoid excessive cost and complexity of idle, standby appliances

Advanced Compliance

The optional license for Advanced Compliance capabilities automates on-connect and continuous endpoint configuration assessment to comply with security benchmarks. It enables you to leverage standards-based security benchmarks and content published in the SCAP format. This allows you to:

- Improve device hygiene for greater endpoint security
- Verify system configuration settings and increase compliance against regulatory or other baselines
- Reduce usage of outdated application versions
- Gather and aggregate assessment results for audit preparation
- Streamline existing processes and automate compliance and remediation workflows

ForeScout Extended Modules

ForeScout Extended Modules expand the See and Control capabilities of ForeScout CounterACT and are available as additional licenses. Your organization can share contextual device data with third-party systems, automate policy enforcement across disparate solutions, bridge previously siloed IT processes, accelerate system-wide response and more rapidly mitigate risks.

Step 3: Determine how you want to deploy

ForeScout CounterACT can be deployed as a software-only solution or as a physical appliance. If you have virtualized many of your servers already, then your preference may be to deploy CounterACT as a virtual appliance. ForeScout supports all key virtualization technologies:

- VMware ESXi
- Microsoft Hyper-V
- Linux KVM

For deploying CounterACT as a physical appliance, we offer a selection of ForeScout 5100 Series appliances:

- ForeScout 5110
- ForeScout 5120
- ForeScout 5140
- ForeScout 5160

The ForeScout 5110 is a desktop version for extra-small deployments. The ForeScout 5120/5140/5160 appliances are 1U appliances. ForeScout 5120 is for small deployments, ForeScout 5140 for medium-size deployments and ForeScout 5160 for large deployments. For centralized management and single-pane manageability across all CounterAct appliances, you simply dedicate one of the rack-mounted ForeScout appliances to be your ForeScout Enterprise Manager.

Step 4: Determine what additional services you will need

ForeScout provides a choice of services for consulting and deployment, 24x7 support and training and certifications. Determine if you would like our services for your initial or ongoing deployment and the level of support that best meet your needs.

ForeScout Consulting Services

ForeScout Consulting Services allow you to maximize the impact of your ForeScout implementation. ForeScout certified consultants are cybersecurity experts who can help you quickly See managed, unmanaged and IoT devices on your network, Control them and Orchestrate information sharing and process automation among your existing security tools. For an overview of the range of services offered by ForeScout, please visit https://www.forescout.com/support/services/.

ForeScout Active Care

ForeScout ActiveCare is the overarching term to describe ForeScout's support and maintenance services. Our support programs are dedicated to providing our customers and partners with timely, high-quality technical support. Our objective is to help customers to alleviate issues, expand product use and optimize their value from your ForeScout solutions. ForeScout appliances include a ninety-day (90) limited warranty. In an effort to provide service flexibility, ForeScout provides two options for ongoing support and maintenance of ForeScout products. We offer ActiveCare Basic and ActiveCare Advanced. For an overview and comparison, please visit https://www.forescout.com/support/support-programs/.

Licensing Examples

Customer example A:

Let's take an example where a customer has 18,000 devices across three locations. Location A has a physical ForeScout 5160 appliance that manages 6,000 devices. Location B also has a physical ForeScout 5160 appliance that manages 7,000 devices. And Location C is managing 5,000 devices with a virtual appliance. They have a physical ForeScout 5140 Enterprise Manager appliance.

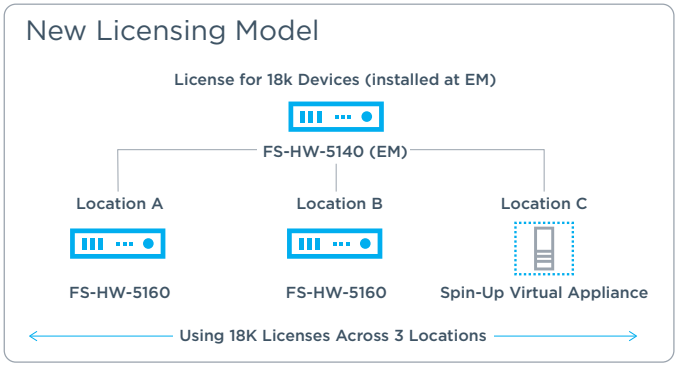
Customer – Worldwide Shipping Company

Customer has 18k devices across 3 locations

Location A - 6k devices (Physical Appliance)

Location B - 7k devices (Physical Appliance)

Location C - 5k devices (Virtual Appliance)



To start, the customer will need 18,000 CounterACT base licenses for the See and Control capabilities. A single licensing file is created for 18,000 devices and is installed in Enterprise Manager. These 18,000 licenses are shared across all ForeScout physical and virtual appliances and across all locations, so there is no need to allocate licenses for each of the different locations.

The license for the Enterprise Manager is included with these CounterACT licenses, so no additional licenses are needed for the Enterprise Manager.

To ensure that ForeScout can provide you with the best experience, you will also need four ActiveCare Basic or Advanced licenses for maintenance and support of the hardware and software ForeScout appliances: two ActiveCare licenses for the two 5160 appliances, one ActiveCare license for the 5140 appliance used for the Enterprise Manager, and 18,000 ActiveCare licenses for the 18,000 devices.

Customer example B:

In this example, the customer has the same deployment as example A. However, they have additional use cases: the customer desires resiliency for CounterACT deployment, and they are using ServiceNow and Splunk® and would like to leverage ForeScout Extended Modules for these integrations.

In addition to the licenses in Example A, the customer would purchase 18,000 licenses for Resiliency, the Extended Module for ServiceNow and the Extended Module for Splunk. The customer will also need the accompanying ActiveCare maintenance and support for each license.

Guidance and examples to help you determine what size of virtual or physical appliances to purchase is provided in the sections below for the ForeScout 5100 Series Appliances, and in Appendix B for the CounterACT CT Series Appliances.

Customer example C:

Let's take an example where a customer already has a deployment with 100,000 devices, 8,000 of which are mobile devices. They would like to get add-on licenses for orchestration with their CrowdStrike® solution.

In addition, they seek to better protect their mobile devices and just purchased MobileIron® for their mobile security. They would like to take advantage of our orchestration solution with MobileIron.

What this customer needs is 100,000 licenses for the ForeScout Extended Module for CrowdStrike and 100,000 licenses of the associated ActiveCare Basic or Advanced for CrowdStrike. While the customer would ideally want to only get orchestration for 60,000 of their devices, we do not support subscoping and 100,000 orchestration licenses are needed.

In addition, they need 8,000 licenses of the Extended Module for MobileIron and 8,000 licenses of the associated ActiveCare Basic or ActiveCare Advanced for MobileIron. Note that enterprise mobility management (EMM) is the only category where we do allow subscoping of licenses. Therefore, the customer doesn't need to purchase 100,000 licenses of the Extended Module for MobileIron, but instead they can purchases licenses only for their 8,000 mobile devices.

Sizing ForeScout 5100 Series Appliances
(ForeScout Flexx Licensing)

Identify the load/performance required

To understand which size virtual and/or physical ForeScout appliance(s) you need to deploy, use the requirements that you wrote down when working through the three steps in the "Scoping Your Needs" section. Then leverage the rest of this document to find physical and virtual appliance specifications of the ForeScout 5100 Series appliances, as well as more information about CounterACT capabilities.

Appliance specifications

As mentioned above, ForeScout CounterACT can be deployed on virtual or physical appliances. For virtualized environments, VMware ESXi, Microsoft Hyper-V and KVM hypervisors are supported. Large networks that require multiple physical or virtual appliances can be centrally managed by the Enterprise Manager.

This section will help you determine sizing for your virtual or physical appliances. Large networks that require multiple appliances can be centrally managed by CounterACT Enterprise Manager.

ForeScout specifications are measured based on real-world network traffic, multiple use cases being deployed and the ForeScout best practices policy set.

Appliance sizing recommendations are based on the following performance requirements:

- Managed endpoints
- Managed switch/wireless LAN devices
- Traffic monitoring (Gb/s) + captive portal (HTTP logins/minute)
- 802.1x (authentications/second)

Note: The hardware and virtual appliance specifications were tested using the test environment described in Appendix A of this document. This test environment simulates a common customer environment and includes typically used modules. Your environment may differ from our test environment due to different configuration settings, amounts of network traffic, installed modules or other factors. Your observed performance will vary accordingly.

VIRTUAL APPLIANCES
(ForeScout Flexx Licensing)

Virtual appliances operating in the ForeScout Flexx Licensing mode can be deployed with CounterACT 8 in four sizes: extra-small, small, medium and large.

Virtual appliances are supported on the following hypervisors:

- VMware ESXi v5.1, v5.5, v6.0, v6.5
- Microsoft Hyper-V Server 2012, 2012 R2, 2016
- KVM on Red Hat Enterprise Linux (RHEL)/CentOS 7.0

Hardware requirements:

- Maximum disk latency of 5ms
- Recommended I/O Read 200MB/s or higher, I/O Write 200MB/s or higher
- No CPU over commitment on virtual hosts
- The CPUs and memory must be dedicated/reserved to the virtual appliance
- Additional disk space may be required to store local debug logs; virtual drives up to 2TB are supported

Note: In virtual environments, factors such as the CPU type, hypervisor version, memory and network I/O options may impact virtual appliance performance[1].

Performance Specifications	**Extra-Small**	**Small**	**Medium**	**Large**
Devices[2,3]	Up to 100	Up to 1,000	Up to 5,000	Up to 10,000
Switch/WLAN devices[3]	Up to 4	Up to 20	Up to 100	Up to 200
802.1x Authentications per second[6]	Up to 5	Up to 10	Up to 42 (+2 vCPUs & 4GB Memory)[4]	Up to 86 (+4 vCPUs & 4GB Memory)[4]
Traffic Monitoring[5] + Captive portal HTTP logins/minute	Up to 100 [Mb/s] 25 [KPPS] 5 HTTP logins/minute	Up to 1 [Gb/s] 250 [KPPS] 10 HTTP redirects/ minute (+2 vCPUs & 4 GB Memory)[4]	Up to 3 [Gb/s] 750 [KPPS] 88 HTTP logins/minute (+8 vCPUs & 12 GB Memory)[4]	Up to 3 [Gb/s] 750 [KPPS] 88 HTTP logins/minute (+8 vCPUs & 12 GB Memory)[4]
Virtual Machine Specifications[1]	**Extra-Small**	**Small**	**Medium**	**Large**
vCPUs	4 vCPUs	6 vCPUs	10 vCPUs	14 vCPUs
Memory	8 GB	14 GB	24 GB	32 GB
Minimum Hard Drive Storage	200 GB	200 GB	200 GB	200 GB

Dedicated virtual appliance for managing switch/WLAN devices

When a CounterACT virtual appliance does not manage any endpoints, but instead only manages switch/WLAN devices, the maximum number of switch/WLAN devices that the appliance can manage is as follows:

Performance Specifications	Small	Medium	Large
Switch dedicated appliance: Maximum Number of Managed Switches[3,7]	Up to 120	Up to 280	Up to 400
Wireless dedicated appliance: Maximum Number of WLAN devices[3]	Up to 140	Up to 250	Up to 360
Virtual Machine Specifications	**Small**	**Medium**	**Large**
vCPUs	6 vCPUs	10 vCPUs	14 vCPUs
Memory	14 GB	24 GB	32 GB
Minimum Hard Drive Storage	200 GB	200 GB	200 GB

Dedicated virtual appliance for traffic monitoring

When a CounterACT virtual appliance does not manage any endpoints, but instead performs traffic monitoring only, the maximum bandwidth that the appliance can manage is as follows:

Performance Specifications	VMware E1000/Hyper-v Network Adapter	VMware VMXNET3	VMware PCI Passthrough
Traffic Monitoring	Up to 3 [Gb/s] 750 [KPPS]	Up to 4 [Gb/s] 1000 [KPPS]	Up to 9 [Gb/s] 2250 [KPPS]
Maximum Traffic Monitoring per vNIC	750 [MB/s]	1 [Gb/s]	4.5 [Gb/s]
Maximum number of vNICs	4	4	2
Virtual Machine Specifications			
vCPUs	8 vCPUs	16 vCPUs	26 vCPUs
Memory	12 GB	12 GB	24 GB
Minimum Hard Drive Storage	200 GB	200 GB	200 GB

ForeScout Virtual Enterprise Manager deployment

ForeScout Enterprise Manager Performance Specifications	Small	Medium	Large
Managed Appliances	Up to 10	Up to 100	Up to 200
Virtual Machine Specifications	**Small**	**Medium**	**Large**
vCPUs	4 vCPUs	8 vCPUs	10 vCPUs
Memory	12 GB	16 GB	24 GB
Minimum Hard Drive Storage	200 GB	200 GB	200 GB

The maximum number of CounterACT appliances that can be managed will vary based on several factors, including but not limited to, network environment, product configuration and use cases.

EXAMPLES FOR VIRTUAL APPLIANCE SIZING

To better understand how to size the hardware resources required for a virtual appliance, consider the following examples:

Example 1:

Customer site details:

- 6,000 endpoints
- 100 wired switch devices
- 50 WLAN devices

Requirements:

- Traffic monitoring performance: 2 [Gb/s]
- 802.1x is not required

ForeScout Virtual Appliance Sizing:

Given the number of endpoints, the "large" virtual appliance configuration is needed. This configuration size is a good starting point to manage up to 10,000 endpoints and 200 switch and WLAN devices.

From the above specification tables, you can see that the minimum required virtual machines specifications for this virtual machine are:

- CPU: 14 vCPUs
- Memory: 32 GB
- Minimum hard drive storage: 200 GB

In addition, since traffic monitoring is required for this site, additional resources need to be added to the virtual appliance per the resources indicated in the traffic-monitoring row of the "large" configuration:

- CPU: 8 vCPUs
- Memory: 12 GB RAM

Therefore, the total virtual appliance size would be:

- CPU: 22 vCPUs
- Memory: 44 GB
- Minimum hard drive storage: 200 GB

Example 2:

Customer site details:

- 1,000 endpoints
- 40 wired switch devices
- 30 WLAN devices

Requirements:

- Support ten 802.1x EAP-TLS authentication events per second
- Traffic monitoring is not required

ForeScout Virtual Appliance Sizing:

Given the number of endpoints, the "small" virtual appliance configuration should be the starting point. However, this configuration cannot handle the number of wired switch/WLAN devices required for this site—the "small" configuration only supports up to 20 such devices in total. Therefore, the "medium" virtual appliance configuration should be selected.

From the above specification tables, you can see that the minimum required virtual machines specifications for this virtual machine is:

- CPU: 10 vCPUs
- Memory: 24 GB
- Minimum hard drive storage: 200 GB

In addition, since 802.1x is required for this site, additional resources need to be added to the virtual appliance per the resources indicated in the 802.1x row of the "medium" configuration:

- CPU: 2 vCPUs
- Memory: 4 GB

Therefore the total virtual appliance size would be:

- CPU: 12 vCPUs
- Memory: 28 GB
- Minimum hard drive storage: 200 GB

5100 SERIES PHYSICAL APPLIANCES
(ForeScout Flexx Licensing)

ForeScout 5100 series appliances operate in ForeScout Flexx Licensing mode and are offered in several different sizes to meet your specific needs.

Performance Specifications	5110	5120	5140	5160
Devices[2,3]	Up to 100	Up to 1,000	Up to 5,000	Up to 20,000
Switch/WLAN devices[3]	Up to 4	Up to 20	Up to 100	Up to 400
802.1x Authentications per second[6]	Up to 5	Up to 11	Up to 42	Up to 166
Traffic Monitoring + Captive Portal (HTTP logins/minute)	Up to 100 [Mb/s] 25 [KPPS] Up to 5 HTTP logins/minute	Up to 1 [Gb/s] 250 [KPPS] Up to 10 HTTP logins/minute	Up to 5 [Gb/s] 1250 [KPPS] Up to 50 HTTP logins/minute	Up to 10 [Gb/s] 2500 [KPPS] Up to 200 HTTP logins/minute
Hardware Specifications	**5110**	**5120**	**5140**	**5160**
Form Factor	Shelf / Desktop	1RU 19" Rack Mount	1RU 19" Rack Mount	1RU 19" Rack Mount
Fixed Network Interfaces	4x10/100/1000 Mbps Copper	4x10/100/1000 Mbps Copper	4x10/100/1000 Mbps Copper	4x10/100/1000 Mbps Copper
SFP Network Interfaces	N/A	4 (2x1G/10G dual rate SR Fiber SFPs included in base configuration)	4 (2x1G/10G dual rate SR Fiber SFPs included in base configuration)	4 (2x1G/10G dual rate SR Fiber SFPs included in base configuration)
I/O Support	1 serial port (RJ45)	1 serial port (DB9)	1 serial port (DB9)	1 serial port (DB9)
USB Ports	2, USB 2.0-compliant	1 4-pin, USB 2.0-compliant and 1 5-pin micro-USB 2.0 management port (front), 2 9-pin USB 3.0-compliant (rear)	1 4-pin, USB 2.0-compliant and 1 5-pin micro-USB 2.0 management port (front), 2 9-pin USB 3.0-compliant (rear)	1 4-pin, USB 2.0-compliant and 1 5-pin micro-USB 2.0 management port (front), 2 9-pin USB 3.0-compliant (rear)
Video (VGA)	1 (DB15)	1 (DB15)	1 (DB15)	1 (DB15)
DVD-ROM	N/A	1	1	1
Hard Drives	1 HDD	3 HDD (RAID-1+HS) 600 GB	3 HDD (RAID-1+HS) 600 GB	3 HDD (RAID-1+HS) 600 GB

Environmental Specifications	5110	5120	5140	5160
Power Supply	1 @ up to 60W 100-240VAC (External)	2 750W AC redundant power supply units, 100-240 VAC, auto-ranging	2 750W AC redundant power supply units, 100-240 VAC, auto-ranging	2 750W AC redundant power supply units, 100-240 VAC, auto-ranging
Power Consumption (maximum)	45.3W	744W	744W	744W
Operating Temperature	5°C to 40°C (41°F to 104°F)	10°C to 35°C (50°F to 95°F)	10°C to 35°C (50°F to 95°F)	10°C to 35°C (50°F to 95°F)
Storage Temperature	0°C to 70°C (32°F to 158°F)	-40°C to 65°C (-40°F to 149°F)	-40°C to 65°C (-40°F to 149°F)	-40°C to 65°C (-40°F to 149°F)
Heat Dissipation (maximum)	N/A	2891 BTU/hr	2891 BTU/hr	2891 BTU/hr
Humidity	20%-90%	Operating (10% to 80%)	Operating (10% to 80%)	Operating (10% to 80%)
Appliance Dimensions (length, width, height)	11cm x 21.06cm x 4.45cm (7.13" x 8.29" x 1.75")	4.28cm x 48.18cm x 70.51cm (1.68" x 18.97" x 27.76")	4.28cm x 48.18cm x 70.51cm (1.68" x 18.97" x 27.76")	4.28cm x 48.18cm x 70.51cm (1.68" x 18.97" x 27.76")
Shipment Package (length, width, height) +Weight	38.1cm x 30.48cm x 16.51cm (15" x 12" x 6.5") Weight: 5.9 pounds	84.18cm x 62.87cm x 27.94cm (33.14" X 24.75" X 11.0") Weight: 61 pounds	84.18cm x 62.87cm x 27.94cm (33.14" X 24.75" X 11.0") Weight: 61 pounds	84.18cm x 62.87cm x 27.94cm (33.14" X 24.75" X 11.0") Weight: 61 pounds

Dedicated appliance for managing switch/WLAN devices

When a CounterACT Appliance does not manage any endpoints, but instead only manages switch/WLAN devices, the maximum number of switch/WLAN devices that the appliance can manage is as follows:

Performance Specifications	5120	5140	5160
Switch dedicated appliance: Maximum Number of Managed Switches[3,7]	Up to 700	Up to 1,900	Up to 1,900
Wireless dedicated appliance: Maximum Number of WLAN devices[3]	Up to 500	Up to 1,000	Up to 1,500

Dedicated appliance for traffic monitoring

When a CounterACT Appliance does not manage any endpoints, but instead performs traffic monitoring only, the maximum bandwidth that the appliance can manage is as follows:

Performance Specifications	5120	5140	5160
Traffic Monitoring	Up to 5 [Gb/s] 1250 [KPPS]	Up to 10 [Gb/s] 2500 [KPPS]	Up to 17 [Gb/s] 4250 [KPPS]

Physical Enterprise Manager deployment

Enterprise Manager Performance Specifications	5110	5120	5140	5160
Managed Appliances	N/A	Up to 10	Up to 100	Up to 200

The maximum number of CounterACT appliances that can be managed will vary based on several factors, including but not limited to, network environment, product configuration and use cases.

Supported SFPs (relevant to appliance models: 5120, 5140, 5160)

The following SFPs are supported on each of the ForeScout 51xx appliances:

Manufacturer	SFP Model	Details
Finisar	FCLF8521P2BTL	1000BASE-T 100m Gen2 RJ-45 Copper SFP
Finisar	FTLF1318P3BTL	1000BASE-LX 10km Industrial Temperature Gen 3 SFP Optical Transceiver
Finisar	FTRJ1319P1BTL	
Finisar	FTLF8519P3BNL	1000BASE-SX 500m Extended Temperature SFP Optical Transceiver
Finisar	FTLF8519P2BCL	
Finisar	FTLX1471D3BCV	10G/1G Dual Rate (10GBASE-LR and 1000BASE-LX) 10km SFP+ Optical Transceiver
Finisar	FTLX8574D3BCV	10G/1G Dual Rate (10GBASE-SR and 1000BASE-SX) 400m Multimode Datacom SFP+ Optical Transceiver
Amphenol[8]	571540003[1]	Direct Attach 10G

[1]This SFP option is not available for purchase through ForeScout.

[1] ForeScout Extended Modules are not included as part of the VM specification. In order to run extended modules on virtual appliances, it is required to allocate more hardware resources to the VM, depending on the module required and usage.

[2] Device count, as determined by ForeScout appliance, is the number of devices known to the appliance by either their MAC address and/or their IP address. Devices may be detected by the appliance when on site or off site, or they may be made known to the appliance via third-party integrations. A device may be counted more than once if it uses multiple IP addresses and/or multiple MAC addresses. Devices include user endpoints (such as laptops, tablets and smartphones), network infrastructure devices (such as switches, routers and access points), non-user devices (such as printers, IP phones, security equipment, medical devices, manufacturing equipment) and virtual machines. Device information is retained in the appliance from initial discovery until such time the information is purged, based on aging preferences set in the product.

[3] The maximum number of devices manageable will vary based on several factors, including but not limited to network environment, product configuration and use cases. It is recommended to manage the switch devices and the connected endpoints with the same appliance to achieve optimal performance. The recommended maximum number of switches that an appliance can manage assumes that 50 endpoints connect to a switch on average. In cases where the average switch device has more endpoints connected to it, such as stacked switch devices, the overall number of managed switch devices will be lower (example: if the average switch device has 100 endpoints connected to it, each switch device will be accounted as two switches).

[4] The hardware resources specified in brackets for different functions in the specification table refer to the resources that need to be added to the basic VM specification in case this functionality is required.

[5] The maximum bandwidth per E1000/ Hyper-V Network Adapter vNIC is 750Mb/s using 1G interface, and up to four (4) E1000/Hyper-V Network Adapter vNICs are supported on a single virtual appliance to obtain 3Gb/s aggregate monitoring bandwidth. Support for VMXNET3 interfaces is available for the VCT-2000/4000/10000: The maximum bandwidth per VMXNET3 vNIC is 1Gb/s using 10G interface, and up to two (2) VMXNET3 vNICs are supported on a single virtual appliance to obtain 2Gb/s aggregate monitoring bandwidth. Support for Hyper-V Network Adapter is available for the VCT-2000/4000/10000: The maximum bandwidth per interface is 1.2Gb/s using a 10G interface and up to three (3) Hyper-V Network Adapters are supported on a single virtual appliance to obtain 3.6Gb/s aggregate monitoring bandwidth. HTTP login is done by injecting HTTP redirect into an endpoint's browser session and authenticating it using Active Directory.

[6] Performance shown in the table is for 802.1x EAP-TLS authentications without Fast Reconnect.

[7] The appliance should be manually configured to a fixed number of subprocesses to work as a dedicated switch appliance. The number of subprocesses should be set to 10 for small virtual appliance, to 15 for medium virtual appliance, to 20 for the large virtual appliance and for the 5120 physical appliance and to 50 for the 5140/5160 . Instructions for configuring the number of subprocesses can be found in the Switch Plugin manual, under the section "Determining the Number of Sub-Processes to Run."

[8] This SFP option is not available for purchase through ForeScout

Appendix A
Test Environment

The specifications shown in this document are based on ForeScout's in-depth performance testing. The test environment used simulates common customer environments along with CounterACT modules and plugins that are typically used. *Your environment may differ from our test environment due to different configuration settings, amounts of network traffic, installed modules and other factors. Your observed performance will vary accordingly*.

- CounterACT Software version used: Version 8
- Performance was measured using default configurations values
- Endpoints: Windows endpoints were inspected with Remote Inspection (SecureConnector is also supported and delivers the same performance)
- Switch/WLAN devices: 50 endpoints connected to each switch/WLAN device (simulated with 500 MAC and 50 ARP addresses). Inspection was done with either CLI or SNMP for switch devices and SNMP for WLAN devices.
- The switch devices and the connected endpoints were managed by the same appliance
- Packet engine, including HTTP redirections using real-world network traffic
- 802.1x is tested for EAP-TLS
- The ForeScout best practices policy set was used. In addition, testing included policies that checked for the following:
  - The presence of a specific file name on an endpoint
  - MD5: If a file has been altered using MD5
  - Microsoft vulnerability: The presence of a specific vulnerability
  - NetBIOS: If the domain is X and the hostname is Y
  - Registry: If a key is present
  - Script: Run a script on an endpoint and return results
  - Shared Folders: List an endpoint's shared folders
  - Username: Whether a user is logged on with a certain username
- The results for the virtual appliances were tested using a 2.7GHz CPU

Appendix B
Sizing and Performance of CT and CEM Series Appliances

This appendix is dedicated to ForeScout virtual and physical appliances under the appliance-based licensing model.

CT and CEM Series Appliance Specifications

ForeScout CounterACT, under the appliance-based licensing model, can be deployed as a software-only solution or as a physical appliance. This section will help you determine sizing for your virtual or physical appliances. Large networks that require multiple physical or virtual appliances can be centrally managed by CounterACT Enterprise Manager.

VCT AND VCEM VIRTUAL APPLIANCES
(Appliance-Based Licensing)

ForeScout virtual appliances operating in the appliance-based licensing mode are offered in several different sizes to meet your specific needs. This section provides specifications for these virtual appliances on CounterACT 8.

ForeScout CounterACT and Enterprise Manager virtual appliances are supported on the following hypervisors:

- VMware ESXi v5.1, v5.5, v6.0, v6.5
- Microsoft Hyper-V Server 2012, 2012 R2, 2016
- KVM on Red Hat Enterprise Linux (RHEL)/CentOS 7.0

Hardware Requirements

- Maximum disk latency of 5ms
- Recommended I/O Read 200 MB/s or higher, I/O Write 200 MB/s or higher
- No CPU over commitment on virtual hosts
- The CPUs and memory must be dedicated/reserved to the virtual appliance
- Additional disk space may be required to store local debug logs; virtual drives up to 2 TB are supported

Note: In virtual environments, many factors, such as the type of CPU, hypervisor version, memory and network I/O options may impact the virtual appliance performance[1].

Note: The results shown below were tested using a 2.7Ghz CPU

Virtual CounterACT specifications

Performance Specifications	VCT-R	VCT-100	VCT-1000	VCT-2000	VCT-4000	VCT-10000
Devices[2,3]	Up to 100	Up to 500	Up to 1,000	Up to 2,500	Up to 4,000	Up to 10,000
Switch/WLAN devices[3]	Up to 4	Up to 20	Up to 20	Up to 100	Up to 100	Up to 200
802.1x Authentications per second[8]	Up to 5	Up to 10	Up to 10	Up to 42 (+2 vCPUs and 4 GB Memory)[4]	Up to 42 (+2 vCPUs and 4 GB Memory)[4]	Up to 86 (+4 vCPUs and 4 GB Memory)[4]
Traffic Monitoring[5] + Captive Portal (HTTP logins/minute)	Up to 100 [Mb/s] 25 [KPPS] 5 HTTP logins/ minute	Up to 1 [Gb/s] 250 [KPPS] 10 HTTP logins/ minute (+2 vCPUs and 4 GB Memory)[4]	Up to 1 [Gb/s] 250 [KPPS] 10 HTTP logins/ minute (+2 vCPUs and 4 GB Memory)[4]	Up to 3 [Gb/s] 750 [KPPS] 88 HTTP logins/ minute (+8 vCPUs and 12 GB Memory)[4]	Up to 3 [Gb/s] 750 [KPPS] 88 HTTP logins/ minute (+8 vCPUs and 12 GB Memory)[4]	Up to 3 [Gb/s] 750 [KPPS] 88 HTTP logins/ minute (+8 vCPUs and 12 GB Memory)[4]
Virtual Machine Specifications[1]	**VCT-R**	**VCT-100**	**VCT-1000**	**VCT-2000**	**VCT-4000**	**VCT-10000**
vCPUs	4 vCPUs	6 vCPUs	6 vCPUs	10 vCPUs	10 vCPUs	14 vCPUs
Memory	8 GB	14 GB	14 GB	24 GB	24 GB	32 GB
Minimum Hard Drive Storage	200 GB	200 GB	200 GB	200 GB	200 GB	200 GB

Virtual Enterprise Manager specifications

Enterprise Manager Performance Specifications	VCEM-05	VCEM-10	VCEM-25	VCEM-50	VCEM-100	VCEM-150	VCEM-200
CounterACT Appliances[1]	5	10	25	50	100	150	200
Virtual Machine Specifications	**VCEM-05**	**VCEM-10**	**VCEM-25**	**VCEM-50**	**VCEM-100**	**VCEM-150**	**VCEM-200**
vCPUs	4 vCPUs	4 vCPUs	8 vCPUs	8 vCPUs	8 vCPUs	10 vCPUs	10 vCPUs
Memory	12 GB	24 GB	16 GB	16 GB	16 GB	24 GB	24 GB
Minimum Hard Drive Storage	200 GB	200 GB	200 GB	200 GB	200 GB	200 GB	200 GB

Dedicated virtual appliance for managing switch/WLAN devices

When a CounterACT virtual appliance does not manage any endpoints, but instead, only manages switch/WLAN devices, the maximum number of switch/WLAN devices that the appliance can manage is as follows:

Performance Specifications	VCT-100	VCT-1000	VCT-2000	VCT-4000	VCT-10000
Switch dedicated appliance: Maximum Number of Managed Switches[3,9]	Up to 120	Up to 120	Up to 280	Up to 280	Up to 400
Wireless dedicated appliance: Maximum Number of WLAN devices[3]	Up to 140	Up to 140	Up to 250	Up to 250	Up to 360
Virtual Machine Specifications	**VCT-100**	**VCT-1000**	**VCT-2000**	**VCT-4000**	**VCT-10000**
vCPUs	6 vCPUs	6 vCPUs	10 vCPUs	10 vCPUs	14 vCPUs
Memory	14 GB	14 GB	24 GB	24 GB	32 GB
Minimum Hard Drive Storage	200 GB	200 GB	200 GB	200 GB	200 GB

Note: For any specific CounterACT deployment, appliance capacity to manage switch/WLAN devices can vary depending on multiple factors. For example, the actual number of endpoints connected to an device, the complexity of the policies being run or the rates used by the plugin to poll devices.

CT AND CEM SERIES PHYSICAL APPLIANCES
(Appliance-Based Licensing)

ForeScout CT and CEM Series appliances operate in appliance-based licensing mode and are offered in several different sizes to meet your specific needs.

CounterACT Appliance specifications

Performance Specifications	CT-R	CT-100	CT-1000	CT-2000	CT-4000	CT-10000
Endpoints[3]	Up to 100	Up to 500	Up to 1,000	Up to 2,500	Up to 4,000	Up to 10,000
Switch/WLAN devices[3]	Up to 4	Up to 10	Up to 20	Up to 50	Up to 80	Up to 200
Traffic Monitoring	Up to 100 [Mb/s] 25 [KPPS]	Up to 500 [Mb/s] 125 [KPPS]	Up to 1 [Gb/s] 250 [KPPS]	Up to 2 [Gb/s] 500 [KPPS]	Up to 4 [Gb/s][1] 1000 [KPPS]	Up to 6 [Gb/s][1] 2000 [KPPS]
Hardware Specifications	**CT-R**	**CT-100**	**CT-1000**	**CT-2000**	**CT-4000**	**CT-10000**
Chassis	1U desktop (steel slim line case)	1U 19” rack mount	1U 19” rack mount	2U 19” rack mount	2U 19” rack mount	2U 19” rack mount
Network Ports Options[7]	4 Copper	6 Copper	8 Copper	8 Copper	8 Copper	8 Copper
		4 Copper + 2 Fiber	4 Copper + 4 Fiber	4 Copper + 4 Fiber	4 Copper + 4 Fiber	4 Copper + 4 Fiber
					6 Copper + 2 Fiber 10G	6 Copper + 2 Fiber 10G
I/O Support	1 serial port (RJ45)	1 serial port (DB9)	1 serial port (DB9)	1 serial port (DB9)	1 serial port (DB9)	1 serial port (DB9)
USB Ports	2, USB 2.0-compliant	2 back-panel USB 2.0 + 1 front-panel USB 2.0	2 back-panel USB 2.0 + 1 front panel USB 2.0	2 back-panel USB 2.0 + 1 front panel USB 2.0	2 back-panel USB 2.0 + 1 front panel USB 2.0	2 back-panel USB 2.0 + 1 front panel USB 2.0
Video (VGA)	1 (DB15)	1 (DB15)	1 (DB15)	1 (DB15)	1 (DB15)	1 (DB15)
DVD-ROM	N/A	1	1	1	1	1
Hard Drives	1 HDD	3 HDD (RAID-1+HS)	3 HDD (RAID-1+HS)	3 HDD (RAID-1+HS)	3 HDD (RAID-1+HS)	3 HDD (RAID-1+HS)

CounterACT Appliance specifications – con't

Environmental Specifications	CT-R	CT-100	CT-1000	CT-2000	CT-4000	CT-10000
Power Supply	1 @ up to 60W 100-240VAC (External)	1 @ up to 750W 100-240VAC	2 @ up to 750W 100-240VAC	2 @ up to 750W 100-240VAC	2 @ up to 750W 100-240VAC	2 @ up to 750W 100-240VAC
Power Consumption (max)	45.3W	744W	744W	744W	744W	744W
Operating Temperature	5°C to 40°C (41°F to 104°F)	10°C to 35°C (50°F to 95°F) at 10% to 80% relative humidity (RH), with 26°C maximum dew point.	10°C to 35°C (50°F to 95°F) at 10% to 80% relative humidity (RH), with 26°C maximum dew point.	10°C to 35°C (50°F to 95°F) at 10% to 80% relative humidity	10°C to 35°C (50°F to 95°F) at 10% to 80% relative humidity	10°C to 35°C (50°F to 95°F) at 10% to 80% relative humidity
Storage Temperature	0°C to 70 °C (32°F to 158°F)	–40°C to 65°C (-40°F to 149°F) with a maximum temperature gradation of 20°C (68°F) per hour	–40°C to 65°C (-40°F to 149°F) with a maximum temperature gradation of 20°C (68°F) per hour	–40°C to 65°C (-40°F to 149°F) with a maximum temperature gradation of 20°C (68°F) per hour	–40°C to 65°C (-40°F to 149°F) with a maximum temperature gradation of 20°C (68°F) per hour	–40°C to 65°C (-40°F to 149°F) with a maximum temperature gradation of 20°C (68°F) per hour
Heat Dissipation (max)	N/A	2891 BTU/Hr	2891 BTU/Hr	2891 BTU/Hr	2891 BTU/Hr	2891 BTU/Hr
Humidity	20%-90%	20% to 80% (non condensing) at a maximum wet bulb temperature of 29°C (84.2°F)	20% to 80% (non condensing) at a maximum wet bulb temperature of 29°C (84.2°F)noncondens-ing) at a maximum wet bulb tempera-ture of 29°C (84.2°F)	10°C to 35°C (50°F to 95°F) at 10% to 80% relative humidity (RH), with 26°C (78.8°F) maximum dew point	10°C to 35°C (50°F to 95°F) at 10% to 80% relative humidity (RH), with 26°C (78.8°F) maximum dew point	10°C to 35°C (50°F to 95°F) at 10% to 80% relative humidity (RH), with 26°C (78.8°F) maximum dew point
Appliance Dimensions (length, width, height)	Size: 18.11cm x 21.06cm x 4.45cm (7.13" x 8.29" x 1.75")	Size: 4.28cm x 48.23cm x 70.05cm (1.68" x 18.98" x 27.57")	Size: 4.28cm x 48.23cm x 70.05cm (1.68" x 18.98" x 27.57")	Size: 8.74cm x 48.23cm x 72.29cm (3.44" x 18.99" x 28.46")	Size: 8.74cm x 48.23cm x 72.29cm (3.44" x 18.99" x 28.46")	Size: 8.74cm x 48.23cm x 72.29cm (3.44" x 18.99" x 28.46")
Shipment Package (length, width, height) +Weight	Size: 38.1cm x 30.48cm x 16.51cm (15" x 12" x 6.5") Weight: 5.9 pounds	Size: 91.44cm x 60.96cm x 27.94cm (36.0" x 24.0" x 11.0") Weight: 56 pounds	Size: 91.44cm x 60.96cm x 27.94cm (36.0" x 24.0" x 11.0") Weight: 57 pounds	Size: 96.52cm x 60.96cm x 28.58cm (38.0" x 24.0" x 11.25") Weight: 66 pounds	Size: 96.52cm x 60.96cm x 28.58cm (38.0" x 24.0" x 11.25") Weight: 66 pounds	Size: 96.52cm x 60.96cm x 28.58cm (38.0" x 24.0" x 11.25") Weight: 66 pounds

Dedicated appliance for managing switch/WLAN devices

When a CounterACT Appliance does not manage any endpoints, but instead only manages switch/WLAN devices, the maximum number of switch/WLAN devices that the appliance can manage is as follows:

Performance Specifications	CT-R	CT-100	CT-1000	CT-2000	CT-4000	CT-10000
Switch dedicated appliance Maximum Number of Managed Switches[3,7]	5	25	300	500	1,000	1,500
Wireless dedicated appliance Maximum Number of WLAN devices[3]	4	20	100	150	200	1,000

Physical Enterprise Manager specifications

Enterprise Manager Performance Specifications	CEM-05	CEM-10	CEM-25	CEM-50
CounterACT Appliances[1]	5	10	25	50
Hardware Specifications	**CEM-05**	**CEM-10**	**CEM-25**	**CEM-50**
Network Ports–Copper (RJ-45)	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
I/O Support	1 serial port (DB9)	1 serial port (DB9)	1 serial port (DB9)	1 serial port (DB9)
USB Ports	2 back-panel, USB 2.0+ 1 front-panel USB 2.0	2 back-panel USB 2.0 + 1 front-panel USB 2.0	2 back-panel USB 2.0 + 1 front-panel USB 2.0	2 back-panel USB 2.0 + 1 front-panel USB 2.0
Video (VGA)	1 (DB15)	1 (DB15)	1 (DB15)	1 (DB15)
CD-ROM	1	1	1	1
Hard Drives	3 HDD (RAID-1+HS)	3 HDD (RAID-1+HS)	3 HDD (RAID-1+HS)	3 HDD (RAID-1+HS)
Power Supply	2 @ up to 750W 100-240VAC	2 @ up to 750W 100-240VAC	2 @ up to 750W 100-240VAC	2 @ up to 750W 100-240VAC

Physical Enterprise Manager specifications – con't

Environmental Specifications	CEM-05	CEM-10	CEM-25	CEM-50
Power Consumption (max)	744W	744W	744W	744W
Operating Temperature	10°C to 35°C (50°F to 95°F) at 10% to 80% relative humidity (RH), with 26°C maximum dew point.	10°C to 35°C (50°F to 95°F) at 10% to 80% relative humidity (RH), with 26°C maximum dew point.	10°C to 35°C (50°F to 95°F) at 10% to 80% relative humidity	10°C to 35°C (50°F to 95°F) at 10% to 80% relative humidity
Storage Temperature	–40°C to 65°C (-40°F to 149°F) with a maximum temperature gradation of 20°C per hour	–40°C to 65°C (-40°F to 149°F) with a maximum temperature gradation of 20°C per hour	–40°C to 65°C (-40°F to 149°F) with a maximum temperature gradation of 20°C per hour	–40°C to 65°C (-40°F to 149°F) with a maximum temperature gradation of 20°C per hour
Cooling Requirement	2891 BTU/Hr	2891 BTU/Hr	2891 BTU/Hr	2891 BTU/Hr
Humidity	20% to 80% (non condensing) at a maximum wet bulb temperature of 29°C (84.2°F)	20% to 80% (non condensing) at a maximum wet bulb temperature of 29°C (84.2°F)	10°C to 35°C (50°F to 95°F) at 10% to 80% relative humidity	10°C to 35°C (50°F to 95°F) at 10% to 80% relative humidity
Chassis	1U 19" rack mount	1U 19" rack mount	2U 19" rack mount	2U 19" rack mount
Appliance Dimensions (length, width, height)	Size: 4.28cm x 48.23cm x 70.05cm (1.68" x 18.98" x 27.57")	Size: 4.28cm x 48.23cm x 70.05cm (1.68" x 18.98" x 27.57")	Size: 8.74cm x 48.23cm x 72.29cm (3.44" x 18.99" x 28.46")	Size: 8.74cm x 48.23cm x 72.29cm (3.44" x 18.99" x 28.46")
Shipment Package (length, width, height) +Weight	Size: 91.44cm x 60.96cm x 27.94cm) (36.0" x 24.0" x 11.0") Weight: 57 pounds	Size: 91.44cm x 60.96cm x 27.94cm) (36.0" x 24.0" x 11.0") Weight: 57 pounds	Size: 96.52cm x 60.96cm x 28.58cm (38.0" x 24.0" x 11.25") Weight: 66 pounds	Size: 96.52cm x 60.96cm x 28.58cm (38.0" x 24.0" x 11.25") Weight: 66 pounds

Performance Specifications	CEM-100	CEM-150	CEM-200
CounterACT Appliances[1]	100	150	200

Physical Enterprise Manager specifications – con't

Hardware Specifications	CEM-100	CEM-150	CEM-200
Network Ports–Copper (RJ-45)	8 10/100/1000 Mbps	8 10/100/1000 Mbps	8 10/100/1000 Mbps
I/O Support	1 serial port (DB9)	1 serial port (DB9)	1 serial port (DB9)
USB Ports	2 back-panel, USB 2.0+ 1 front-panel USB 2.0	2 back-panel USB 2.0 + 1 front-panel USB 2.0	2 back-panel USB 2.0 + 1 front-panel USB 2.0
Video (VGA)	1 (DB15)	1 (DB15)	1 (DB15)
CD-ROM	1	1	1
Hard Drives	3 HDD (RAID-1+HS)	3 HDD (RAID-1+HS)	3 HDD (RAID-1+HS)
Power Supply	2 @ up to 750W 100-240VAC	2 @ up to 750W 100-240VAC	2 @ up to 750W 100-240VAC
Environmental Specifications	**CEM-100**	**CEM-150**	**CEM-200**
Power Consumption (max)	744W	744W	744W
Operating Temperature	10°C to 35°C (50°F to 95°F) at 10% to 80% relative humidity	10°C to 35°C (50°F to 95°F) at 10% to 80% relative humidity	10°C to 35°C (50°F to 95°F) at 10% to 80% relative humidity
Storage Temperature	–40°C to 65°C (-40°F to 149°F) with a maximum temperature gradation of 20°C per hour	–40°C to 65°C (-40°F to 149°F) with a maximum temperature gradation of 20°C per hour	–40°C to 65°C (-40°F to 149°F) with a maximum temperature gradation of 20°C per hour
Cooling Requirement	2891 BTU/Hr	2891 BTU/Hr	2891 BTU/Hr
Humidity	10°C to 35°C at 10% to 80% relative humidity (RH), with 26°C (78.8°F) maximum dew point	10°C to 35°C at 10% to 80% relative humidity (RH), with 26°C (78.8°F) maximum dew point	10°C to 35°C at 10% to 80% relative humidity (RH), with 26°C (78.8°F) maximum dew point
Chassis	2U 19" rack mount	2U 19" rack mount	2U 19" rack mount
Appliance Dimensions (length, width, height)	Size: 8.74cm x 48.23cm x 72.29cm (3.44" x 18.99" x 28.46")	Size: 8.74cm x 48.23cm x 72.29cm (3.44" x 18.99" x 28.46")	Size: 8.74cm x 48.23cm x 72.29cm (3.44" x 18.99" x 28.46")
Shipment Package (length, width, height) +Weight	Size: 96.52cm x 60.96cm x 28.58cm (38.0" x 24.0" x 11.25") Weight: 66 pounds	Size: 96.52cm x 60.96cm x 28.58cm (38.0" x 24.0" x 11.25") Weight: 66 pounds	Size: 96.52cm x 60.96cm x 28.58cm (38.0" x 24.0" x 11.25") Weight: 66 pounds

The maximum number of CounterACT appliances that can be managed will vary based on several factors, including but not limited to, network environment, product configuration and use cases.

For customers using ForeScout CT and CEM series appliances with CounterACT 7, specifications are available at https://www.forescout.com/wp-content/uploads/2016/11/ForeScout-Product-Specifications.pdf.

[1] ForesScout Extended Modules are not included as part of the VM specification. In order to run extended modules on virtual appliances, it is required to allocate more hardware resources to the VM depending on the module required and usage.

[2] Device count, as determined by ForeScout appliance, is the number of devices known to the appliance by either their MAC address and/or their IP address. Devices may be detected by the appliance when on site or off site, or they may be made known to the appliance via third-party integrations. A device may be counted more than once if it uses multiple IP addresses and/or multiple MAC addresses. Devices include user endpoints (such as laptops, tablets and smartphones), network infrastructure devices (such as switches, routers and access points), non-user devices (such as printers, IP phones, security equipment, medical devices, manufacturing equipment) and virtual machines. Device information is retained in the appliance from initial discovery until such time the information is purged, based on aging preferences set in the product.

[3] Each CounterACT appliance, physical or virtual, is licensed for a specified device count. However, the maximum number of devices manageable will vary based on several factors, including but not limited to, network environment, product configuration and use cases. It is recommended to manage the switch devices and the connected endpoints with the same appliance to achieve optimal performance. The recommended maximum number of switches that an appliance can manage assumes that 50 endpoints connect to a switch on average. In cases where the average switch device has more endpoints connected to it, such as stacked switch devices, the overall number of managed switch devices will be lower (example: if the average switch device has 100 endpoints connected to it, each switch device will be accounted as two switches).

[4] The hardware resources specified in brackets for different functions in the specification table refer to the resources that need to be added to the basic VM specification in case this functionality is required.

[5] The maximum bandwidth per E1000/ Hyper-V Network Adapter vNIC is 750Mb/s using 1G interface, and up to four (4) E1000/ Hyper-V Network Adapter vNICs are supported on a single virtual appliance to obtain 3Gb/s aggregate monitoring bandwidth. Support for VMXNET3 interfaces is available for the VCT-2000/4000/10000: The maximum bandwidth per VMXNET3 vNIC is 1Gb/s using 10G interface, and up to two (2) VMXNET3 vNICs are supported on a single virtual appliance to obtain 2Gb/s aggregate monitoring bandwidth. Support for Hyper-V Network Adapter is available for the VCT-2000/4000/10000: The maximum bandwidth per interface is 1.2Gb/s using a 10G interface, and up to three (3) Hyper-V Network Adapters are supported on a single virtual appliance to obtain 3.6Gb/s aggregate monitoring bandwidth. HTTP login is done by injecting HTTP redirect into an endpoint's browser session and authenticating it using Active Directory.

[6] Requires ForeScout CounterACT 7.0 Service Pack 3.0 and above.

[7] Copper ports are 10/100/1000 RJ-45. Fiber ports are 1Gb/s, 1000Base-SX SFP; Fiber 10G ports are 10Gb/s, 10Gbase-SR SFP+.

[8] Performance shown in the table is for 802.1x EAP-TLS authentications without Fast Reconnect.

[9] The appliance should be manually configured to a fixed number of subprocesses to work as a dedicated switch appliance. The number of subprocesses should be set to 10 for VCT-100/VCT-1000, to 15 for VCT-2000/VCT-4000 to 20 for VCT-10000. Instructions for configuring the number of subprocesses can be found in the Switch Plugin manual, under section "Determining the Number of Sub-Processes to Run."

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