

SmartCell Insight Release 2.1

Installation Guide

Part Number: 800-71328-001 Published: 23 August 2016

www.ruckuswireless.com

Contents

Copyright Notice and Proprietary Information About This Guide Document Conventions Related Documentation Documentation Feedback

1 Before You Begin

| System Requirements | 10 |
|--------------------------------------|----|
| Minimum Hardware Requirements | |
| Guidelines for Setting Up Data Nodes | 11 |
| Storage Requirements | 11 |
| Minimum Software Requirements | 11 |
| DHCP Server Requirements | 11 |
| NTP Server Requirements | 12 |

2 Installing SCI

| Installation Overview | 13 |
|--|----|
| Setting Up the Virtual Machine Using VMware ESXi | 14 |
| Setting Up the Virtual Machine Using AWS | 16 |
| Setting Up the Virtual Machine Using a Static IP Address | 17 |
| Setting Up the Nodes | 20 |
| Firewall Rules | 21 |
| Web API Setup | 22 |
| Secure Shell Access to SCI | 23 |

3 Configuring SCI

| Configuring SMTP | 24 |
|----------------------|----|
| Managing Controllers | 25 |
| Editing Controllers | 27 |

4 Configuring the Controller

| Configuring Controllers from the Web | UI24 | 9 |
|--------------------------------------|--------------|---|
| Example to add controllers: Sm | artZone 3.42 | 9 |

5 Managing Licenses

| Trial License | 31 |
|------------------------------|----|
| Upgrading to the SCI License | |

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About This Guide

This *SmartCell Insight 2.1 Installation Guide* provides instructions for installing and the initial setup of the Ruckus Wireless[™] SmartCell Insight (SCI) application.

This guide is written for service operators and system administrators who are responsible for managing, configuring, and troubleshooting Wi-Fi networks. It assumes basic working knowledge of local area networks, wireless networking, and wireless devices.

NOTE: Refer to the release notes shipped with your product to be aware of certain challenges when upgrading to this release.

Most user guides and release notes are available in Adobe Acrobat Reader Portable Document Format (PDF) or HTML on the Ruckus Wireless Support Web site at https://support.ruckuswireless.com/contact-us.

Document Conventions

Table 1: Text conventions on page 6 and Table 2: Notice conventions on page 6 list the text and notice conventions that are used throughout this guide.

Table 1: Text conventions

| Convention | Description | Example [Device Name] > | |
|-------------------------|--|---|--|
| message phrase | Represents messages displayed in response to a command or a status | | |
| user input | Represents information that you enter | [Device Name] > set ipaddr 10.0.0.12 | |
| user interface controls | Keyboard keys, software buttons, and field names | Click Create New | |
| Start > All Programs | Represents a series of commands, or menus and submenus | Select Start > All Programs | |
| ctrl+V | Represents keyboard keys pressed in combination | Press ctrl+V to paste the text from the clipboard. | |
| screen or page names | | Click Advanced Settings . The Advanced Settings page appears. | |
| command name | Represents CLI commands | | |
| parameter name | Represents a parameter in a CLI command or UI feature | | |
| variable name | Represents variable data | {ZoneDirectorID} | |
| filepath | Represents file names or URI strings | http://ruckuswireless.com | |

Table 2: Notice conventions

| Notice type | Description |
|-------------|--|
| NOTE: | Information that describes important features or instructions |
| CAUTION: | Information that alerts you to potential loss of data or potential damage to an application, system, or device |

| Notice type | Description |
|-------------|--|
| WARNING: | Information that alerts you to potential personal injury |

Related Documentation

For a complete list of documents that accompany this release, refer to the Release Notes.

Documentation Feedback

Ruckus Wireless is interested in improving its documentation and welcomes your comments and suggestions.

You can email your comments to Ruckus Wireless at: docs@ruckuswireless.com

When contacting us, please include the following information:

- Document title
- Document part number (on the cover page)
- Page number (if appropriate)

Before You Begin

1

In this chapter:

- System Requirements
- DHCP Server Requirements
- NTP Server Requirements

SmartCell Insight (SCI) is a massively scalable reporting and analytics engine, designed to collect data from Ruckus network equipment, analyze that data, and then present it using a wide variety of standard and custom reports.

System Requirements

You must be aware of the minimum hardware and software requirements to run SCI.

Minimum Hardware Requirements

To run SCI effectively, you must ensure that the installation environment meets the minimum hardware requirements.

The SCI cluster consists of a Master node and one or many Data nodes. The cluster can be fully functional with just the Master node. The Data node is optional, as it only helps to scale the processing power and storage capacity of the cluster.

Following are the minimum hardware requirements for the Master node in the SCI cluster:

Table 3: Minimum Hardware Requirements - Master Node

| Requirement | Quantity |
|-----------------------------|----------|
| Number of vCPUs | 8 |
| Memory | 32 GB |
| Root HDD (Root Volume) | 80 GB |
| Secondary HDD (Data Volume) | 500 GB |

Following are the minimum hardware requirements for the Data node in the SCI cluster:

Table 4: Minimum Hardware Requirements - Data Node

| Requirement | Quantity |
|-----------------------------|----------|
| Number of vCPUs | 4 |
| Memory | 20 GB |
| Root HDD (Root Volume) | 80 GB |
| Secondary HDD (Data Volume) | 500 GB |

Guidelines for Setting Up Data Nodes

The controllers that communicate with the SCI cluster can have a number of APs. The amount of data traffic that the cluster must handle depends on the number of APs in the controller. Therefore, you must setup the right number of Data nodes on the cluster to handle the AP traffic. Following are guidelines to setup Data nodes within the cluster, based on the number of APs in the controller:

Table 5: Guidelines to Setup Data Nodes

| Number of Data Nodes | Number of APs |
|----------------------|---------------|
| 0 | Up to 3,000 |
| 1 | Up to 10,000 |
| 2 | Up to 20,000 |
| 3 | Up to 30,000 |

NOTE: Add an additional Data node for every additional 10,000 APs

NOTE: This table is only a guideline and the actual hardware requirements would depend on various factors such as the number of clients, the number of sessions, and the type of server hardware.

Storage Requirements

The node must have a storage capacity to handle at least 1 GB of data per day, for every 1,000 APs.

Minimum Software Requirements

The minimum required virtualization software version is VMware ESXi 5.0 or above.

DHCP Server Requirements

Before the SCI cluster installation, ensure that a static IP address is assigned to the Master node and Data node. A DHCP server must be available to issue an IP address to the SCI virtual machine (VM).

NOTE: The IP address that is assigned to the nodes must be accessible.

To setup a VMware environment, the networking layer of VMware is used, which includes its own virtual routers and the DHCP server. Therefore, a dedicated DHCP server is not necessary.

NOTE: The IP addresses assigned to SCI VMs must not change throughout the lifetime of the deployment.

NTP Server Requirements

SCI must keep the correct time in order to report accurate statistics.

As an analytics system, SCI must make sure that all its statistics are reported with the correct time. Therefore, you must ensure that NTP servers are reachable by all elements of the ecosystem: APs, SZ's, ZoneDirectors, and SCI.

NOTE: In addition to ensuring access to an NTP server, you must also ensure that the time and date are correct. If you change the time after SCI is installed, it will cause serious issues within the SCI system. For example, when APs reboot, they would lose all measurements and aggregated statistics as the AP re-initializes its real-time clock through the NTP server.

If the SCI VM is unable to access the internet for NTP updates, it must be configured with a local NTP server. Modify the chrony configuration file at /etc/chrony.conf with the NTP server information.

Login to the SCI VM (master and data nodes) and add the following line to the chrony configuration file.

```
server <ntp-server-ip> prefer
```

For more information about using SSH to connect to SCI, see Secure Shell Access to SCI on page 23

Installing SCI

In this chapter:

- Installation Overview
- Setting Up the Virtual Machine Using VMware ESXi
- Setting Up the Virtual Machine Using AWS
- Setting Up the Virtual Machine Using a Static IP Address
- Setting Up the Nodes
- Secure Shell Access to SCI

SCI 2.1 can be installed as a virtualized cluster using VMware's vSphere Web Client or Amazon Web Services (AWS). The cluster is made up of Master and Data nodes as virtual machines (VMs).

Installation Overview

You must install SCI as a VM cluster. Setup and activate the Master nodes and Data node(s) (optional) within the cluster after installation is complete.

Ensure that you have identified an IP address for the Master and Data nodes that you are about to create (VMs).

NOTE: IPv6 is currently not supported, therefore IP addressing must only be in the IPv4 format.

WARNING:

- Do not power off the SCI instance during or after setup as this could corrupt the file system and disrupt SCI operation after reboot. If you want to restart the system, you must perform a "sudo reboot" from the CLI.
- Do not "yum update" on the SCI instances.

NOTE: This document assumes that the reader has working knowledge of VMware ESXi and/or AWS.

The following steps outline the installation process:

1. Create a VM for the Master node.

For more information about how to setup the VM, see Setting Up the Virtual Machine Using VMware ESXi on page 14 or Setting Up the Virtual Machine Using AWS on page 16.

2. Create a VM for the Data node.

For more information about how to setup the VM, see Setting Up the Virtual Machine Using VMware ESXi on page 14 or Setting Up the Virtual Machine Using AWS on page 16.

After the VMs are created, an IP address must be assigned to them.

NOTE: Ensure that you indicate the IP address to VMware ESXi or the VM manager software when starting up the VM. The network stack on the running VM is automatically set to get an IP address from the DHCP server, but it expects the DHCP server to always assign it the same IP address during it's lifetime.

NOTE: Ensure that the IP address is accessible to the nodes within the SCI cluster.

- **3.** Set up the Master node. For more information, see Setting Up the Nodes on page 20.
- Activate the Master node.
 For more information, see Setting Up the Nodes on page 20.
- **5.** Set up the Data node. For more information, see Setting Up the Nodes on page 20.
- 6. Activate the Data node.
- 7. Enter the login credentials to access the web UI.You will see the Master and Data nodes you created in the Admin > Status & Update page.
- 8. Configure the controllers that you want to add to the cluster.

This completes the SCI installation as a VM.

Setting Up the Virtual Machine Using VMware ESXi

VMware ESXi is an enterprise-class hypervisor used for deploying and serving virtual computers.

Follow these steps to install and configure the VM:

- **1.** Download the VMware ESXi software and ensure that it is running on a suitable host with proper network configuration.
- 2. From the VMware vSphere Web Client, set up and configure the VM.

NOTE: Ensure that the VM is setup based on the hardware specifications available at Minimum Hardware Requirements on page 10.

Figure 1: VMware vSphere Web Client

| IWare [®] vSphere Web Cli | | | | ౖU i root@localos - i Help | |
|------------------------------------|---|-----------------------------------|-----------------------------------|----------------------------|---------------------------|
| History E 🕑 🖡 | rsa-2.0-41 Actions - | | | E | |
| Networks | Getting Started Summary | Monitor Manage Related | | | ▼ 🗊 Recent Tasks |
| Datastores | | 😰 rsa-2.0-41 - Edit Settin | gs | ⑦ ▶ □ CPU USAGE 0 Hz | All Running Failed |
| | | Virtual Hardware VM Op | tions SDRS Rules vApp Options | MEMORY USAGE | rsa-2.0-41 |
| | POWERED OF | > 🔲 CPU | 8 🔹 | | |
| | | Memory | 32768 V MB V | STORAGE USAGE 150 GB | |
| | Open with VMRC 🚯 | + 🛄 Hard disk 1 | 50 GB V | | |
| | Download VMRC | ► Ard disk 2 | 100 GB V | | |
| | ✓ VM Hardware | ▶ ☑ SCSI controller 0 | LSI Logic Parallel | | |
| | ▶ CPU 8 CP | | VM Network 🗸 🗸 Connect | | |
| | Memory 3 | ▶ | Host Device 🔍 🗸 Connect | | |
| | Hard disk 1 50 G | Video card | Specify custom settings | | My Tasks - More Ta |
| | Hard disk 2 100 0 | WMCI device | | | Vork In Progress |
| | Network adapter 1 VM I | Other Devices | | | 🗇 rsa-2.0-41 - Edit Set |
| | CD/DVD drive 1 Power Video card 4 MB | . opgraad | Schedule VM Compatibility Upgrade | | |
| | Other Addit | | | | |
| | Compatibility ESXi | | | | |
| | | | | | - 🐯 Alarms |
| | | | | | All (1) New (1) Acknowle. |
| | Advanced Configuratio | | | | esxi-local-storage-1 |
| | EVC Mode N/A | | | | Datastore usage on disk |
| | ▼ Notes | New device: | Select Add | | |
| | | Compatibility: ESXi 5.1 and | later (VM version 9) OK | Cancel | |
| | | | | Calical | |

NOTE: The OVA file does not specify the minimum hardware requirements. Therefore, ensure that the hardware requirements are configured correctly.

NOTE: Ensure that the root and data volumes are set up as the **first** and **second** SCSI devices respectively, on the first SCSI controller of the VM, in order to be detected correctly.

NOTE: The network stack on the VM is automatically set to get an IP address from the DHCP server, but the VM always expects the DHCP server to assign the same IP address during its lifetime. Therefore, provision the VM with a **fixed** IPv4 address. The VMware vSphere Web Client requires this information when the VM is started.

If DHCP is not available, it is possible to set up the VM using a static IP address. See Setting Up the Virtual Machine Using a Static IP Address on page 17 for more information.

3. From the VMware vSphere Web Client, start the VM.

It could take up to 30 minutes for the VM to boot, depending on the VM resources.

You can press the **Esc** key when the VM is booting, to view the boot logs and troubleshoot failures, if any.

NOTE: You can use the same VM image to provision a Master node and Data node.

Setting Up the Virtual Machine Using AWS

Amazon Elastic Compute Cloud (Amazon EC2) is an Amazon Web Services (AWS) that allows you to create and run virtual machines in the cloud.

Contact Ruckus Wireless customer support and provide your AWS account ID, so that the company can share the SCI private AMI (Amazon Machine Image) number with you. For more information regarding AWS accounts IDs, see

http://docs.aws.amazon.com/general/latest/gr/acct-identifiers.html.

Follow these steps to install and configure the VM:

- 1. Based on the instructions in http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/usingsharedamis-finding.html, find the AMI and launch a VM instance.
- 2. Choose the type of instance you want to create. A good example is m4.2xlarge.

NOTE: The AMI will be located in US West (Oregon).

Figure 2: Choosing the type of instance

| | 2. Choose Instance Type | | | ag Instance 6. Configure Se | | | |
|------------|-------------------------------|--------------------------------|-------------------------|-----------------------------|----------------------------|-------------------------------|---------------------|
| -p.z. | Choose an Instance | итепсуенегации | | 19 | | | |
| irrently s | elected: m4.2xlarge (26 ECUs, | 8 vCPUs, 2.4 GHz, Int | el Xeon E5-2676v3, 32 0 | GiB memory, EBS only) | | | |
| | Family | Туре - | vCPUs (i) - | Memory (GiB) - | Instance Storage (GB) () - | EBS-Optimized Available (i) + | Network Performance |
| | General purpose | t2.nano | 1 | 0.5 | EBS only | - | Low to Moderate |
| | General purpose | t2.micro Free tier eligible | 1 | 1 | EBS only | - | Low to Moderate |
| | General purpose | t2.small | 1 | 2 | EBS only | - | Low to Moderate |
| | General purpose | t2.medium | 2 | 4 | EBS only | - | Low to Moderate |
| | General purpose | t2.large | 2 | 8 | EBS only | - | Low to Moderate |
| | General purpose | m4.large | 2 | 8 | EBS only | Yes | Moderate |
| | General purpose | m4.xlarge | 4 | 16 | EBS only | Yes | High |
| | General purpose | m4.2xlarge | 8 | 32 | EBS only | Yes | High |
| | General purpose | m4.4xlarge | 16 | 64 | EBS only | Yes | High |
| | General purpose | m4.10xlarge | 40 | 160 | EBS only | Yes | 10 Gigabit |
| | General purpose | m3.medium | 1 | 3.75 | 1 x 4 (SSD) | - | Moderate |

- **3.** Configure the instance you have chosen based on your requirements.
- **4.** Add storage to the instance.

Following are the minimum requirements to configure the instance:

- Hard disk 1 (Root volume): 50 GB
- Hard disk 2 (Data volume): 500 GB (choose /dev/sdb for Device).

Figure 3: Adding storage to the instance

| T AWS | • Services • | Edit 🗸 | | | | | | jason.cheow(| @ruckuswireless.co | Oregon - | Support - |
|----------------|---|-----------------------------|----------------|---------------------|--|-----------------------------|----------------|--------------|--------------------|----------|--------------|
| 1. Choose AMI | 2. Choose Instance Type | 3. Configure Instance | 4. Add Storage | 5. Tag Instance | 6. Configure Security Group | 7. Review | | | | | |
| | be launched with the fo f the root volume. You c | | | | BS volumes and instance sto stance, but not instance stor | | | | | | |
| Volume Type (i | Device (i) | Snapshot (i) | Size (GiB) | i Volume Typ | e (i) | IOPS (i) | Delete on Term | nination (i) | Encrypted (i) | | |
| Root | /dev/sda1 | snap-f5295cb3 | 50 | Magnetic | ٥ | N/A | | | Not Encrypted | | |
| EBS | C /dev/sdb | Search (case-insensit | 500 | Magnetic | 0 | N/A | | | | 8 | |
| most applicati | ons and also deliver a c le customers can get up | consistent baseline of 3 IO | PS/GiB. Set m | y root volume to Ge | nt of volume size, to meet th ineral Purpose (SSD). age. Learn more about free u | | | | | | |
| | | | | | | | Cancel | Previous | Review and Laur | | Tag Instance |

- 5. Tag the instance to manage it.
- **6.** Configure the security group so that traffic to and from the instance is secure. Review the instance and ensure all the configuration details are final.
- 7. Launch the instance.

It could take up to 30 minutes for the instance to boot.

You have successfully created a VM instance.

Setting Up the Virtual Machine Using a Static IP Address

If you are unable to use DHCP, you can use a static IP address for the VM.

NOTE:

The static IP can be set only when you set up a VM. Once the VM is set up, there is no option to change the IP address.

1. From the console, power on the instance (or reboot). The following screen appears.

Figure 4: Console



Select **Network Manager TUI** to the set the static IP address, and **Normal Boot** to start SCI.

2. Select Network Manager TUI.

The Network Manager TUI screen appears.

Figure 5: Network Manager TUI screen



- 3. Select Edit a connection.
- 4. Press Enter.

The following screen appears.

Figure 6: Selecting a wired connection



- 5. Select Wired Connection 1, or the default wired connection.
- 6. Select Edit.

The **Edit Connection** screen is displayed.

Figure 7: Edit

| Frofile name Hirrof connection 1 Device Stat2-68-80-80 (ess3) | |
|---|--------------|
| - ETHERRET | Cheel |
| - 1Pv4 CONTIGUENTION CArtonetics = 1Pv6 CONTIGUENTION Contametics | CSN040 |
| D21 Automatically connect D21 Automatically connect D21 Automatically connect | |
| | Cancel> 03K> |

 Select Show against the IPv4 configuration. The following screen appears.

Figure 8: Changing the connection

| Bit Connection | |
|---|-------------------|
| Profile name Mired connection 1 Device 20:02:60:00:30:00 (cond) | |
| ETHERNET If v4 CONFIGURATION Addresses Galessoy BNS servers Search domains Thereing One castem reades) (Edit) I Hower use this metaerk for default racia I lequire IDA addressing for this connection | (Show) (Hiske) |
| - 154 CHFIGINTIN - Octoertic) DO Actoentically connect | ditrad |
| Di swileble to all ssers | (Gausel) (DB) |

8. Change the connection type for the IPv4 Address to Manual.

Figure 9: Manual IPv4 connection selected

| | Litel connection 1 SC:(2:68:30:10 (encl) | |
|---|--|-----------------|
| - ETHERHET | | (Show) |
| [] Never use this | GML> GMML> GMML> GMML> GMM contour restes) GDALL> retwork for default roste | Olide> |
| 1 | Mecazing for this connection | |
| - 1946 CONFIGURATION (X) Automatically on (X) Awtishic to all | met. | (Bland) |
| | | (Canaral) (IIK) |

- 9. Fill up all the required details as per the network environment and select OK.
- 10. Select OK.

This should reboot the instance and continue to Normal Boot.

Setting Up the Nodes

You must setup the VM image created, as a Master node or a Data node so that the SCI cluster can be created.

Follow these steps to setup and activate the nodes:

 Launch a web browser and browse to the SCI set up page (https://<SCI IP address or domain name>).

The Ruckus Smart Access page appears.

The Ruckus Smart Access portal uses a self-signed SSL certificate, so you will receive an invalid certificate warning from your browser.

2. You can either select to set up the new VM as the Master Node in a new SCI cluster, or as a new Data Node in an existing cluster.

Figure 10: Ruckus Smart Access page

| How do you want to set up this new VM? | |
|--|--|
| • Create the Master Node of a new RSA Cluster | |
| Create a new Data Node to add to an existing RSA Cluster | |
| | |
| Set Up Node | |

- **3.** From Ruckus Smart Analytics, select the **Create the Master Node of a new RSA cluster** or **Create the Data Node of a new RSA cluster** as appropriate.
- 4. Click Set Up Node.

The setup process takes a few minutes. When set up is complete, an acknowledgment page appears with the Node IP and Node Token numbers.

NOTE: Remember to record the IP address and token number of the Master node as you will require this information to setup the Data node, and scale the cluster at a later time.

This information is also available in the **Admin** > **Status & Update** page, within the **Ruckus Smart Access** interface.

You will also need the **RSA Portal User** and **RSA Portal User Password** to log into the newly created user portal.

5. Click Activate Master Node or Activate Data Node as appropriate, to activate the nodes.

NOTE: Ensure that no ports are blocked by the firewall between all the nodes within the SCI cluster. For more information, see Firewall Rules on page 21

6. After activation is completed, the **Ruckus Smart Analytics** page appears. Login with user credentials to access the portal.

Firewall Rules

Firewall rules control incoming and outgoing data traffic between the SCI cluster and the controller interface.

The following firewall rules are observed for user access, controller access and NTP access.

| | Main Portal | SSH | Cloud Updapter | Diagnostics |
|-------------------|-------------------------|--|--|--|
| From | User IP | User IP | SCI Master Node IP and Data Node IPs | User IP |
| То | SCI Master Node IP | SCI Master Node IP and Data Node IPs | Internet (Static IP) | SCI Master Node IP |
| Port Number | 443 | 22 | 443 | 53000, 55070, 58090, 58081, 58080, 59090 |
| Protocol | HTTPS | SSH | HTTPS | HTTPS |
| Traffic Direction | Incoming traffic to SCI | Incoming traffic to SCI | Outgoing traffic from SCI | Incoming traffic to SCI |

Table 6: Firewall rules for User Access

| | SmartZone AP Stats (JSON) | SmartZone AVC Data | ZoneDirector Pull (XML) | ZoneDirector Push (XML) ZD 9.13 and above |
|-------------------|--|-------------------------|--|---|
| From | SCI Master Node IP and Data Node IPs | SmartZone IP | ZoneDirector IP | SCI Master Node IP and Data Node IPs |
| То | SmartZone IP | | SCI Master Node IP and Data Node IPs | ZoneDirector IP |
| Port Number | 8443 | 1883 and 8883 | 443 | 443 |
| Protocol | HTTPS | MQTT | HTTPS | HTTPS |
| Traffic Direction | Outgoing traffic from SCI | Incoming traffic to SCI | Outgoing traffic from SCI | Incoming traffic to SCI |

Table 7: Firewall rules for Controller Access

Table 8: Firewall rules for NTP Access

| | SmartZone AP Stats (JSON) |
|-------------------|--------------------------------------|
| From | SCI Master Node IP and Data Node IPs |
| То | NTP server IP |
| Port Number | 123 |
| Protocol | NTP |
| Traffic Direction | Outgoing traffic from SCI |

Web API Setup

You can setup the nodes using API calls.

You must issue the first API call to set up the VM as a Master node or Data node. The response to this call (JSON response) contains information about the node_type, node_ip and node_token.

Issue the second API call to activate the node. There is no response for this call.

NOTE: As the process of activation shuts down the Set Up web application, you may receive a HTTP read error from the curl request. Ignore this message.

Master Node

- curl -k -H "Content-Type: application/json" -X POST -d '{"node": {"node_type": "master"}}' https://[SCI IP or domain name]/nodes
- curl -ks -X PUT https://[SCI IP or domain name]/nodes/master/activate

Data Node

- curl -k -H "Content-Type: application/json" -X POST -d '{"node": {"node_type": "data", "data_node_master_ip": "[Cluster's Master Node IP]", "data_node_master_token": "[Cluster's Master Node Token]", "data_node_master_timeout": [Cluster's Master Node Verification Time Out (optional; as integer value in seconds)]]}' https://[SCI IP or domain name]/nodes
- curl -k -X PUT https://[SCI IP or domain name]/nodes/data/activate

Secure Shell Access to SCI

You can use Secure Shell (SSH) to login to a node.

Follow these steps to use SSH to configure the node (VM):

1. Open the VM console.

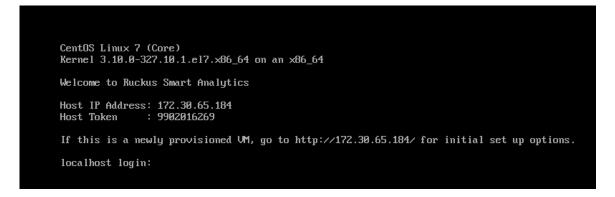
The IP address and token number of the node are displayed.

This information is also available in the Admin > Status & Update page, within the Ruckus Smart Access interface.

2. Using SSH, login to the node with your user name and password.

The node is now accessible and you can make the necessary configuration changes.

Figure 11: Sample SSH screen



Configuring SCI

3

In this chapter:

- Configuring SMTP
- Managing Controllers

After the nodes in the SCI cluster are setup and activated, SCI must be configured. You must add controllers for SCI to monitor and collect data. The SCI dashboard is populated with reports and trends after the controllers are added.

Configuring SMTP

You can configure the SMTP mail server to receive scheduled reports from SCI by e-mail.

Configuring the SMTP server is optional. If you do not configure the SMTP server, you will not receive any scheduled reports.

1. From the SCI dashboard, click Admin > Settings.

The **Settings** page appears with options to configure the SMTP settings.

Figure 12: SMTP configuration

| Overview | | SmartZone (SCG/SZ/vSZ) | | admin |
|---------------------|-----------------------------|------------------------------|---|-------|
| Network | | ZoneDirector | | admin |
| WLANS | | SmartZone (SCG/SZ/vSZ) | | admin |
| Cilents | | SmartZone (SCG/SZ/vSZ) | | admin |
| Applications | | SmartZone (SCG/SZ/vSZ) | | admin |
| Airtime Utilization | | SmartZone (SCG/SZ/vSZ) | | admin |
| Data Explorer | | SmartZone (SCG/SZ/vSZ) | | SeeHo |
| Admin 🗢 | | SmartZone (SCG/SZ/vSZ) | | admin |
| Status & Update | | | | |
| · · · | | | | |
| Diagnostics | Outgoing Mail Server (SMTP) | | |] |
| Settings | | | | |
| | Host: | | | |
| | Port: | 687 | | |
| | Username: | | | |
| | Password: | | | |
| | Password: | | | |
| | | | | |
| | Encryption: | STARTTLE | • | |
| | Encryption: From Email: | STARTTLS rea@uckusibs.com | • | |
| | | | - | |

- **2.** Configure the following information:
 - Host: type the name/IP address of the host
 - Port: type the port number
 - Username: type the user name to access the SMTP mail server
 - Password: type the password to access the SMTP mail server
 - Encryption: from the drop-down menu, select **Enable** to encrypt the e-mail, and **Disable** if you do not want to encrypt the e-mail.

- From Email: type the e-mail address from which the e-mail is to be sent
- 3. Click Update.

The SMTP configuration is updated.

Managing Controllers

You must add controllers to SCI to monitor and manage them. SCI analyzes data from the controller and provides information about the WiFi network performance.

Follow these steps to add a controller:

1. From the SCI dashboard, click Admin > Settings.

The Settings page appears with options to manage controllers.

Figure 13: Adding and deleting controllers

| Overview | Settings | | | | |
|---------------------|-----------------------------|------------------------------|------------------------|----------|----------------|
| Network WLANS | Controllers | | | | x Deleta + Add |
| Clients | System ID | | Туре | Location | User |
| Applications | | | SmartZone (SCG/SZ/vSZ) | | admin |
| Airtime Utilization | | | SmartZone (SCG/SZ/vSZ) | | ruckus.sci |
| Data Explorer | | | SmartZone (SCG/8Z/v6Z) | | admin |
| Admin 🔶 | | | ZoneDirector | | admin |
| Status & Update | | | SmartZone (SCG/SZ/vSZ) | | admin |
| Diagnostics | | | SmartZone (SCG/SZ/vSZ) | | admin |
| Settings | | | SmartZone (SCG/SZ/vSZ) | | admin |
| | | | SmartZone (SCG/SZ/vSZ) | | admin |
| | | | SmartZone (SCG/SZ/vSZ) | | SeeHo |
| | | | SmartZone (SCG/6Z/v6Z) | | admin |
| | | | | | |
| | | | | | |
| | Outgoing Mail Server (SMTP) | | | | |
| | Host: | email-smtp.us-west-2.amazona | ws.com | | |
| | Port: | 687 | | | |

2. In Controllers, click Add.

The **New Controller** dialog box appears.

Figure 14: New controller information

| New Controller | | × |
|----------------|--------------------|---|
| System ID: | | |
| Туре: | ZoneDirector | • |
| Location: | scheme://host:port | |
| Username: | | |
| Password: | | |
| | Create | |

- **3.** Provide the following information:
 - System ID: type the name of the controller you want to add to SCI

NOTE: The controller name should be unique and cannot be changed.

- Type: select the controller type from the drop-down menu
- Location: type the IP address of the controller
- Username: type the username to access the controller
- Password: type the password to access the controller

NOTE: The username and password must be created in the controller.

4. Click Create.

The new controller is listed under the **Controllers** section of the **Settings** page, and a confirmation message is displayed.

Figure 15: New controller is added

| Controllers | | | | | | | |
|--------------------|--------------|------------------------|----------------------|-------|--|--|--|
| Controller created | | | | | | | |
| 0 | System ID | Туре | Location | User | | | |
| 0 | Controller 0 | SmartZone (SCG/SZ/vSZ) | https://1.1.1.0:8443 | admin | | | |
| 0 | Controller 1 | SmartZone (SCG/SZ/vSZ) | https://1.1.1.1:8443 | admin | | | |
| | | | | | | | |

You have successfully added a controller for SCI to monitor.

You can delete a controller by selecting it from the **Controllers** section, and clicking **Delete**.

NOTE: The delete operation is irreversible. However, the controller with the same details can be added again.

Deleting a controller does not remove its data from the reports.

Editing Controllers

You can modify information about a controller that you have already added to SCI.

NOTE: You cannot modify the name (System ID) of the controller once it is created.

Follow these steps to edit the controller's information:

- From the SCI dashboard, click Admin > Settings. The Settings page appears.
- 2. Identify the controller that you want to edit, and select the appropriate check-box as shown.

Figure 16: Selecting the controller

| Overview | Settings | | | | |
|---------------------|-------------|-----------|------------------------|----------|----------------|
| Network | | | | | |
| WLANs | Controllers | | | | × Delete + Add |
| Clients | | System ID | Туре | Location | User |
| Applications | | | SmartZone (SCG/SZ/vSZ) | https:/ | admin |
| Airtime Utilization | | | SmartZone (SCG/SZ/v8Z) | https:// | ruckus.sci |
| Data Explorer | | | SmartZone (SCG/SZ/vSZ) | https:/ | admin |
| | | _ | ZoneDirector | https:/ | admin |
| Admin 🔻 | | | SmartZone (SCG/SZ/vSZ) | https:/ | admin |
| Status & Update | | | SmartZone (SCG/SZ/vSZ) | https:/ | admin |
| Diagnostics | | | SmartZone (SCG/SZ/vSZ) | https:/ | admin |
| Settings | | | SmartZone (SCG/SZ/vSZ) | https: | admin |
| | | | 0 | Las | 0 |

3. Click the controller row.

A dialogue box appears with controller information you can modify, as shown. Make necessary changes.

Figure 17: Editing controller information

| Ruck | 16. | | | | | | |
|---------------------|-------------|-----------|------------|------------------|---------------|----------|----------------|
| SmartCellInsig | | | SCI_14_vSZ | | × | | |
| Overview | | | System ID: | SCI_14_vSZ | | | |
| Network WLANs | Controllers | | Туре: | ZoneDirector | • | | × Delete + Add |
| Clients | | System ID | Location: | | | Location | Usor |
| Applications | | | Username: | admin | | , | admin |
| Airtime Utilization | | | Password: | | 7 | | ruckus.sci |
| Data Explorer | V | | | | | | admin |
| | | | | | Update Cancel | | admin |
| Admin 🤝 | | | | | | | admin |
| Status & Update | | | SmartZo | ine (SCG/SZ/vSZ) | https:/ | | admin |
| Diagnostics | | | SmartZo | ine (SCG/SZ/vSZ) | https:/ | | admin |
| | | | Smart7o | vna (SCG/SZ6/SZ) | https | | admin |

4. Click Update.

You have successfully edited the controller's information.

Configuring the Controller

In this chapter:

• Configuring Controllers from the Web UI

To understand the performance trends of a controller, you must add the controller to SCI and configure it's SCI settings to monitor it.

Configuring Controllers from the Web UI

After a controller is added to the SCI cluster for monitoring, you must configure the SCI settings of the controller from the controller's web UI. An example to manage the SCI settings for the Virtual SmartZone-Essesntials (vSZ-E) controller, version 3.4 is shown.

Example to add controllers: SmartZone 3.4

Adding a SmartZone controller

Follow these steps to modify the SCI settings from the vZS-E web UI:

1. In the vSZ-E web UI, click Configuration > System > SCI Setting.

The SCI Setting page appears.

Figure 18: vSZ-E SCI settings page

| ← → C 🕅 https://172.17.18.1 | 198:8443/wsg/index.jsp#d56 | 11bf4-bc54-4884-ad36-95b | 0155757604 | | | <u>が</u> |
|--|---|---|---|--------|----------------|--|
| ertificates on some APs need to be refreshed | I, please go to Administration->AP C | ertificate Replacement page to verify a | ind follow the Certificate Refresh Proc | | | tmin Super Admin <u>My Account</u> <u>Log Off</u> • Essentials (vSZ34e-ML-4 |
| | Dashboard | Monitor | Configuration | Report | Administration | |
| onfiguration >> SCI Setting | | | | | | |
| | SCI Setting | | | | | |
| dentity 🔻 | Enable SCI Server | | | | | |
| Notem | - | SCG04 | | | | |
| | SCI Server Host: * | | | | | |
| Log Settings | SCI Server Port: * 1883 Password: * •••• | | | | | |
| Event Management | Refresh Apply Cancel | | | | | |
| Event Threshold | Tencer Appro Cancer | | | | | |
| Northbound Portal Interface | | | | | | |
| System Time | | | | | | |
| External Email Server | | | | | | |
| External FTP Servers | | | | | | |
| External SMS Gateway | | | | | | |
| Certificate Store | | | | | | |
| SNMP Settings | | | | | | |
| SCI Setting | | | | | | |
| Manage User Agent Blacklist | | | | | | |
| Management Interface ACL | | | | | | |
| management interface view | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

- 2. Select the Enable SCI Server check-box.
- **3.** Configure the following SCI settings:
 - SCI System ID: type the unique name that was given while adding the controller.
 - SCI Server Host: type the SCI IP address or the domain name
 - SCI Server Port: set to 1883
 - Password: enter the password to access the SCI server

You have completed configuring the SCI server settings on the controller.

NOTE: The Master and Data node IP addresses must be *white-listed* on the controller for SCI to *pull* data from the controllers.

Managing Licenses

In this chapter:

- Trial License
- Upgrading to the SCI License

SCI supports a trial license which you can use to familiarize with the product, and also supports a permanent SCI license.

Trial License

SCI is provided with a built-in trial license. You can upgrade to the SCI license before the trial period ends.

The trial license:

- Is valid only for 90 days
- Does not limit the number of controllers or APs supported by SCI
- Must be upgraded to a SCI license within the validity period of the trial license
- Does not allow you to view reports after the validity period ends

Upgrading to the SCI License

After using SCI with the trial license, make sure that you upgrade to the permanent SCI license in order to benefit from the product.

Follow these steps to upgrade to the SCI license:

1. In the SCI web UI, click Admin > License.

The License page appears.

Figure 19: License page

| | CUS [°] | | Please contact our suppo | ort team to purchase license. | admin |
|--------------------|--------------------|-----------------------------|--------------------------|--|-------------------|
| Overview | License | | | | |
| Network | | | | | |
| WLANs | Feature | Start | Expiration | Notice | |
| Clients | INSTANCE-SCI-TRIAL | Jul 19 2016 15:59 | Oct 17 2016 15:59 | Limited time trial license. Please contact our support team to p | ourchase license. |
| Applications | - | Jul 19 2016 18:00 | Perpetual License | - | |
| Airtime | - | Jul 19 2016 18:00 | Perpetual License | - | |
| Utilization | Upload License | | | | |
| Data Explorer | Serial Number: | 1234567890MAIT | | | |
| Admin 🚽 | File: | Click here to select a file | | | |
| Status & Update | | Upload | | | |
| Diagnostics | | | | | |
| Settings | | | | | |
| License | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

- 2. Use the Serial Number shown here to activate your license.
- **3.** Click **File**, to upload the license file that you have downloaded from the Ruckus Support website.
- 4. Click Upload.

NOTE:

The number of AP licenses uploaded should at least be equal to, or more than the total number of active APs connected to the controllers which are configured in SCI.

Index

Α

accurate statistics 12 adding controllers 25 Amazon EC2 16 AWS 16

С

controller configuration 29 copyright information 4 correct time 12

D

data node guidelines 11 deleting controllers 25 dhcp 11

Ε

editing controllers 27

F

firewall rules 21

Н

hardware requirements 10

I

installation overview 13 installation prerequisites 10

L

legal <mark>4</mark>

Ν

ntp 12

S

```
sci configuration 24
sci license 31
setup data node 20
setup master node 20
setup sci cluster 20
smtp 24
software requirements 11
ssh 23
static ip address 17
storage requirements 11
```

т

trademarks 4 trial license 31

V

VMware ESXi 14

W

web api 22 web ui 29