Deployment Guide

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Changes in Revision 1

- Added slide about where to get the RWG .ISO images.
- Added slide about the Resource Calculator.
- Added slides around using Asset Manager to generate licenses.
- Minor changes on the slides text.

Intended Audience

This document provides an overview of how to configure a RUCKUS product for bare metal installation on an approved hardware platform. Step-by-step procedures for configuration are demonstrated. Some knowledge of the tools used to prepare installation is recommended.

This document is written for and intended for use by technical engineers with background in Wi-Fi design and 802.11/wireless engineering principles.

For more information on how to configure RUCKUS products, please refer to the appropriate user guide available on the RUCKUS support site at https://support.ruckuswireless.com/

Overview

This guide describes how to prepare and install the RUCKUS WAN Gateway in bare metal. It is divided into the following sections:

- Preparing a Boot Disk
- RWG Installation
- RWG Licensing
- Initial RWG Configuration

Preparing a Boot Disk

Download the RWG ISO File

Navigate to the RUCKUS support site at https://support.ruckuswireless.com/software, and select RUCKUS WAN Gateway (RWG) in the dropdown list. The **Downloads** tab will show the recommended ISO images. Download the latest recommended image to your computer.
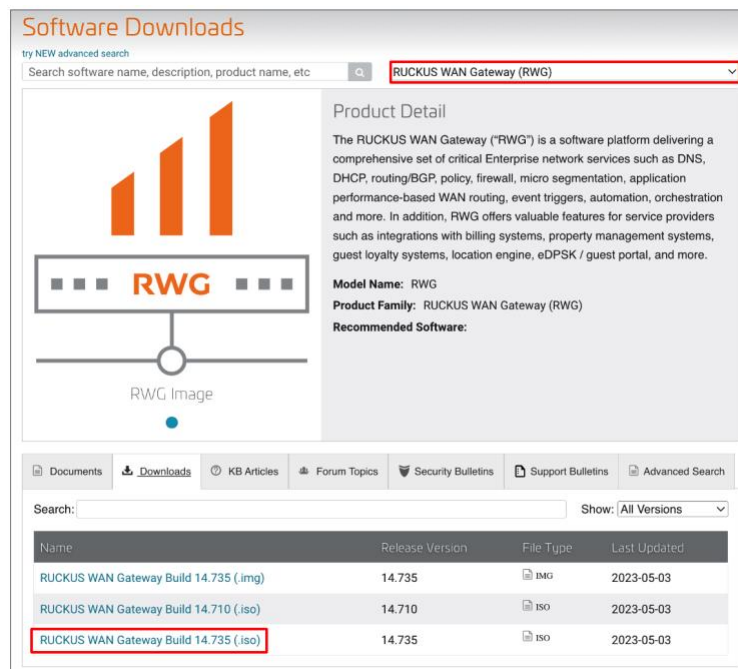

FIGURE 1 – RWG IMAGES AT THE RUCKUS SUPPORT PORTAL

The next section will cover how to create a bootable disk using the RWG image for a bare metal installation. A USB 3.0 flash drive with at least 8GB of storage space is required.

Rufus

Rufus is a Windows utility used to format and create bootable USB flash drives. Download Rufus at https://rufus.ie. After Rufus is downloaded and extracted to a directory, launch the executable.
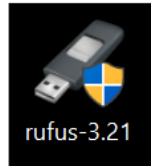

FIGURE 2 – THE RUFUS UTILITY

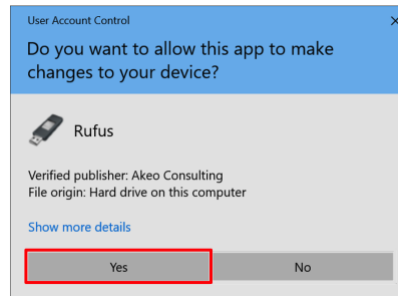When prompted, click on **Yes** to allow the utility to make changes to the device.

FIGURE 3 – ALLOW RUFUS TO MAKE CHANGES

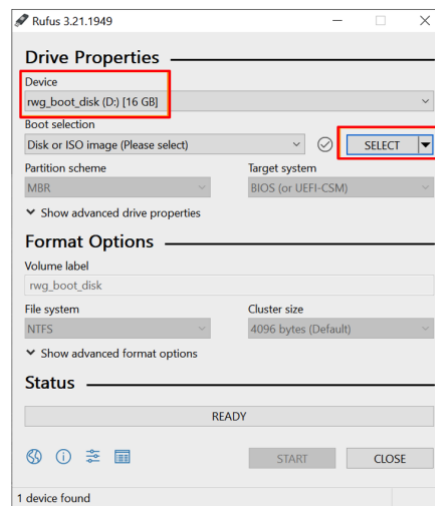When the application opens, confirm that the correct USB device is selected under **Device**.

FIGURE 4 - DRIVE PROPERTIES

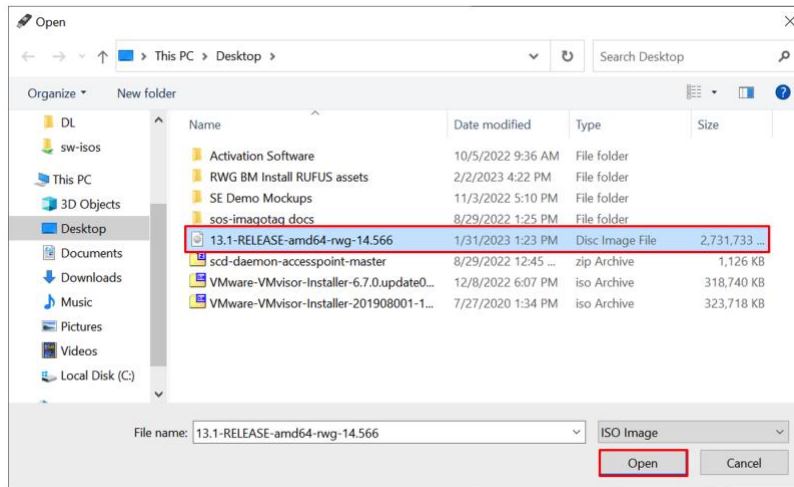Click on **Select** to find the .ISO file image, then click **Open** to load it.

FIGURE 5 - RWG IMAGE SELECTION

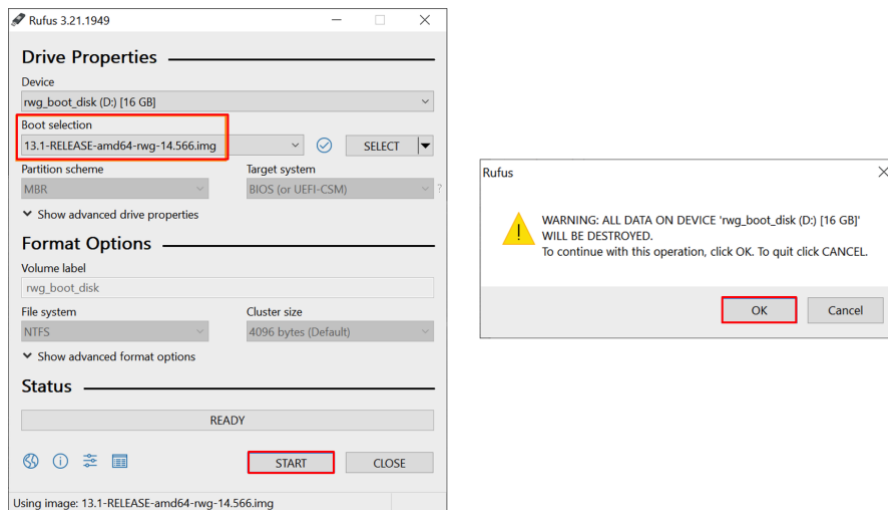Click **START**, then click **OK** at the warning prompt.

FIGURE 6 – START CREATING THE BOOTABLE THE USB DRIVE

The process should take approximately 5 minutes, depending on the USB drive's data transfer rate. When the process is complete, click **CLOSE**.
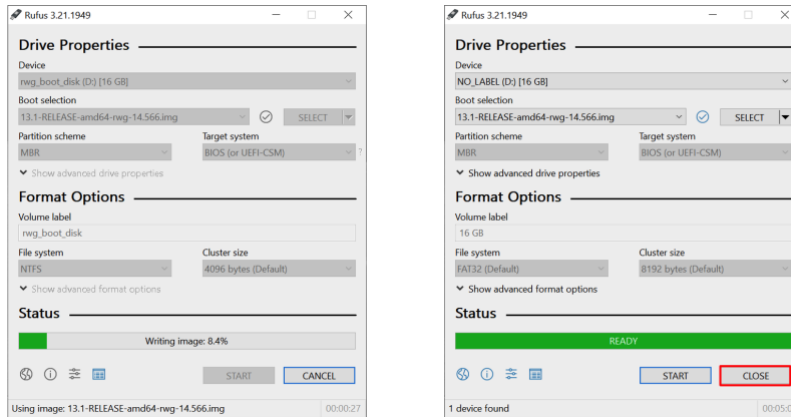

FIGURE 7 – IMAGING PROCESS COMPLETED

Balena Etcher

Balena Etcher is a MacOS tool to flash OS images to SD cards and USB drives. Download Balena Etcher at https://www.balena.io/etcher. After Balena Etcher is installed onto the computer, launch the application.

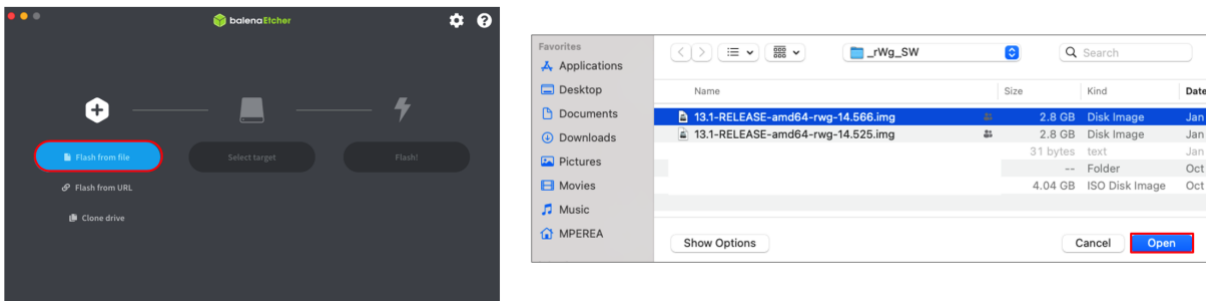Click on **Flash from file**, then find the RWG image and click **Open**.

FIGURE 8 - FLASH FROM FILE

Click **Select target** to select the USB drive. When prompted, select the correct drive to deploy to and click **Select(1).**
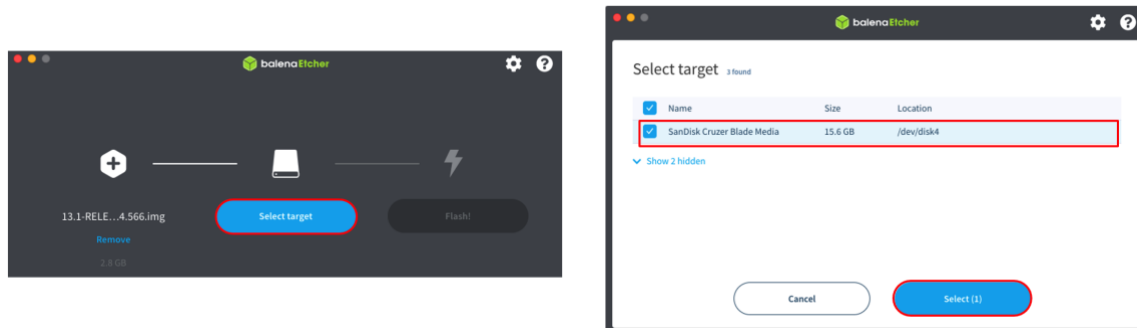

FIGURE 9 - SELECT TARGET

Click on **Flash** to begin the process. The process should take approximately 5 minutes, depending on the USB drive's data transfer rate.
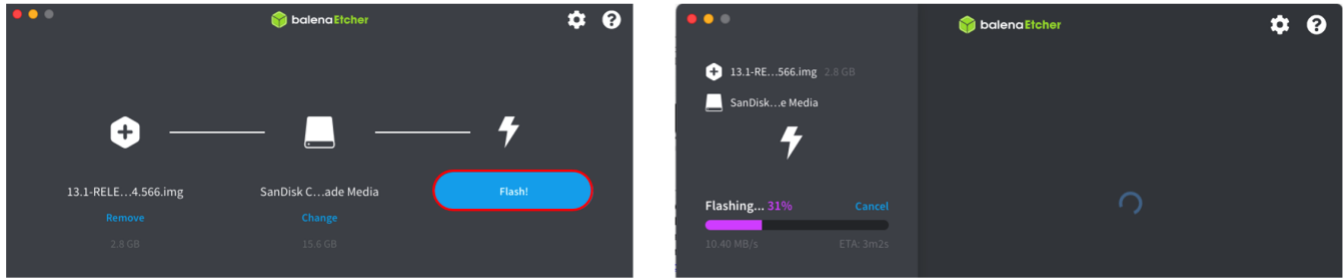

FIGURE 10 – FLASH!

After the flashing process completes, the application will run a verification process.
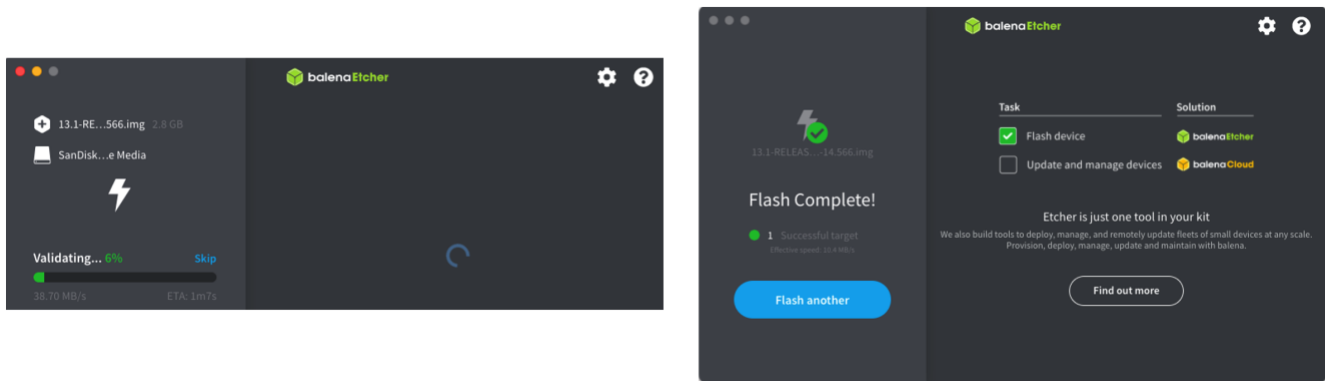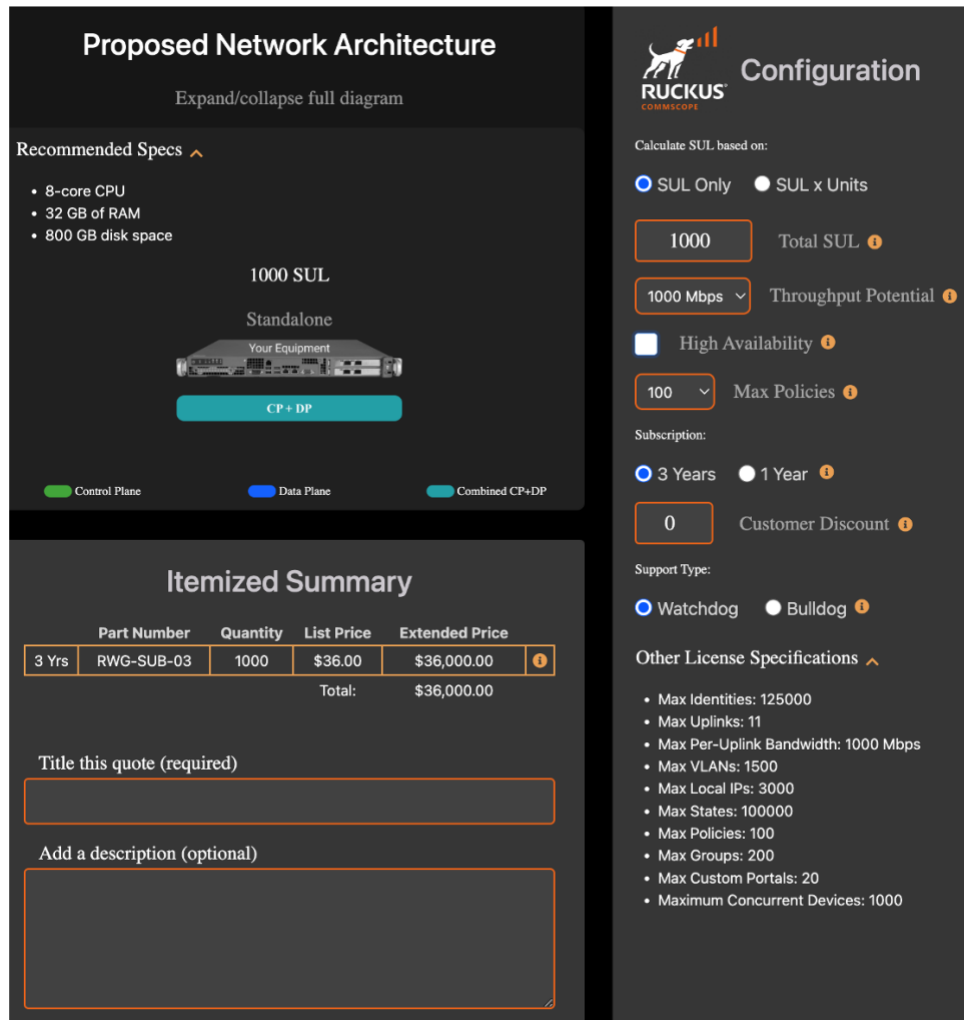

FIGURE 11 – FLASH COMPLETE!

When the process is complete, close the application and eject the drive, which is now ready for use.

RWG Installation

Installation Pre-Requisites

The installation requirements can be calculated using the **Resource Calculator Tool** available at https://store.stage.rgnets.com/configure. You need an user account and password to login.

FIGURE 12 – RESOURCE CALCULATOR

There are some additional points to ensure a successful installation:

- At least two network interfaces
- Hardware-based RAID is disabled

Network Interfaces

A minimum of two ethernet interfaces is required, but four are recommended for broader RWG deployment scenarios. The first network interface on the server is a DHCP client (named **ix0**, **igb0** or **em0** on bare metal machines). That interface will be utilized for the WAN uplink to the ISP. Connect it to your ISP's modem/router uplink. The last network interface on the server is a DHCP server (named **ix5, igb5** or **em5** on the mini-server shown below, which has six interfaces). That interface will be utilized for the LAN connection.

Note: The RWG license is tied to the hardware configuration. If the hardware changes, a new license is required.

FIGURE 13 – MINI-SERVER WITH 6 INTERFACES

Disable Hardware Based RAID

RWG employs a fully automated ZFS software RAID service, which requires all physical disks to be used upon installation, and all drives should be identical to guarantee consistent performance. ZFS is optimized for working with direct disk access, and will perform poorly in cases when used with a combined volume.

It is therefore considered best practice to <u>disable any hardware RAID</u> if there is a physical RAID controller present on the system. Please refer to your RAID Controller vendor or OEM server vendor for instructions on how to disable the physical RAID controller.

Booting from the USB Drive

Connect a monitor, keyboard and mouse to the **bare-metal** server. Insert the USB boot disk that was created earlier into a USB port on the server.

Most servers will boot from the hard disk by default, so you must change the boot order, or temporarily select the USB boot device. This is typically achieved by pressing **F1**, **F11**, **F12** or **DEL** at boot or **POST**. Consult your system's documentation for the correct key selection.
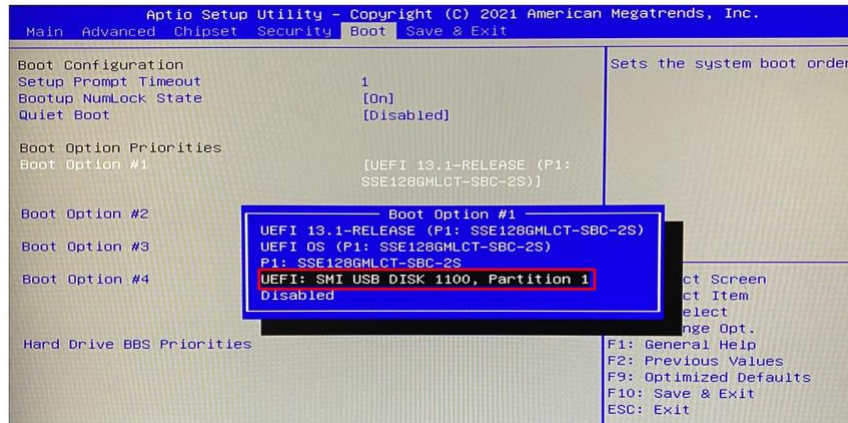

FIGURE 14 - BOOT CONFIGURATION

Save and exit the boot configuration.
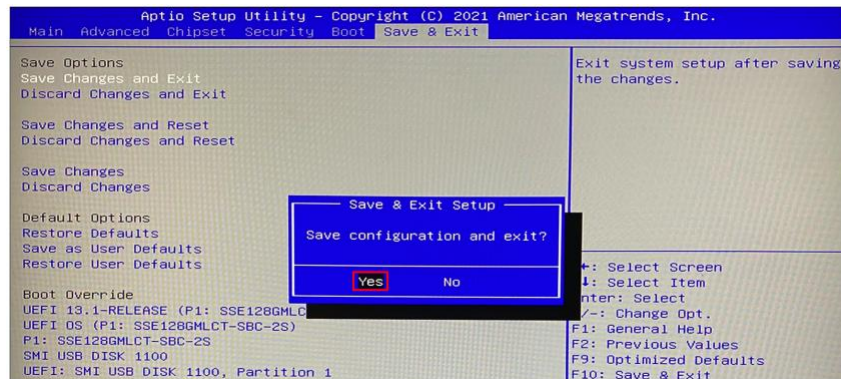
FIGURE 15 – SAVE THE BOOT CONFIGURATION

The system should restart and boot using the USB Boot disk.

Installer Wizard

The next screens will ask for confirmation to install RWG's Base OS and software. Click **Yes** to start the process.
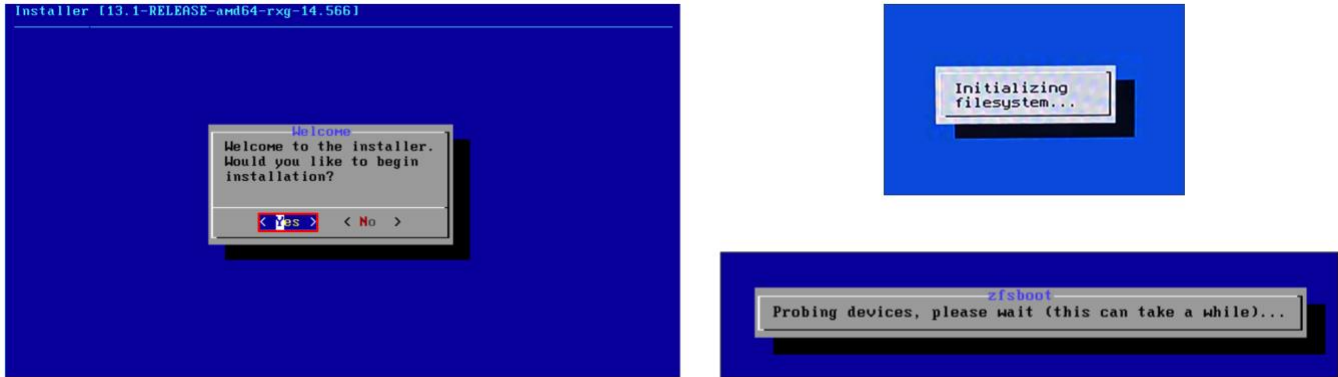
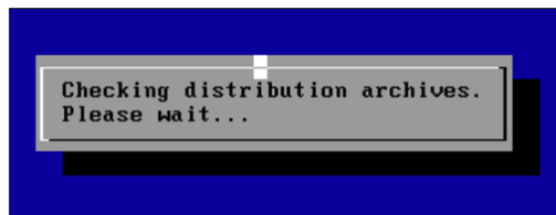FIGURE 16 - CONFIRM INSTALLATION

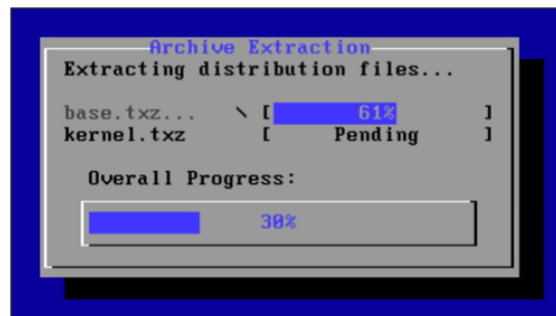
FIGURE 17 - CHECKING DISTRO ARCHIVES
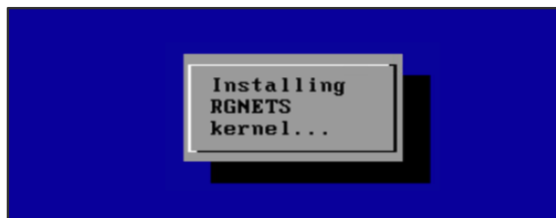

FIGURE 18 - DISTRO FILES EXTRACTION
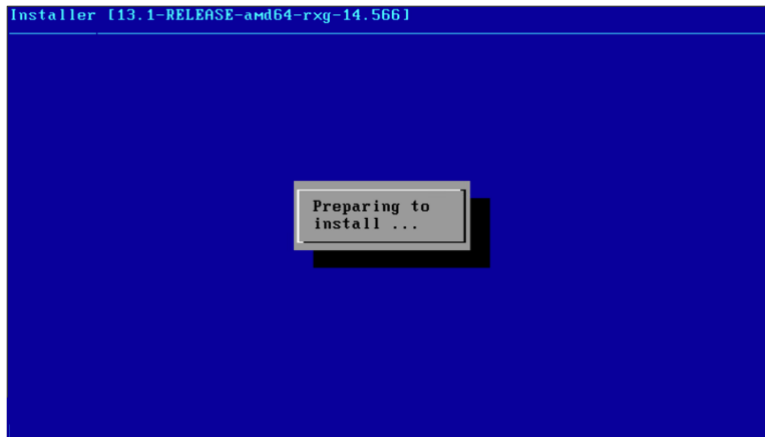

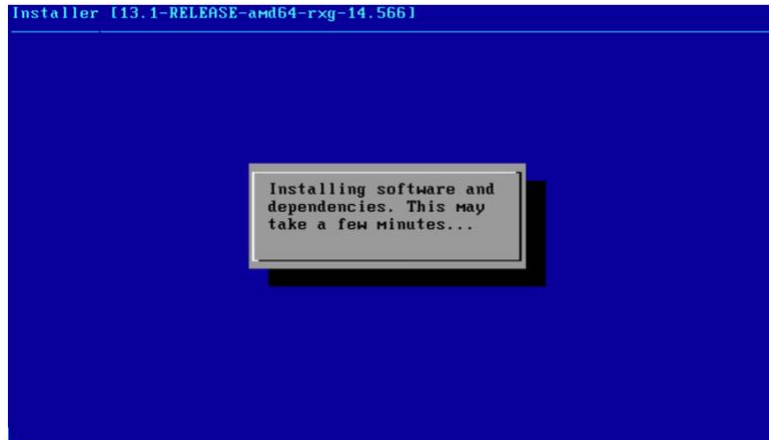FIGURE 19 - INSTALLING RWG KERNEL

FIGURE 20 - PREPARING TO INSTALL RWG SOFTWARE

FIGURE 21 – INSTALLING SOFTWARE AND DEPENDENCIES

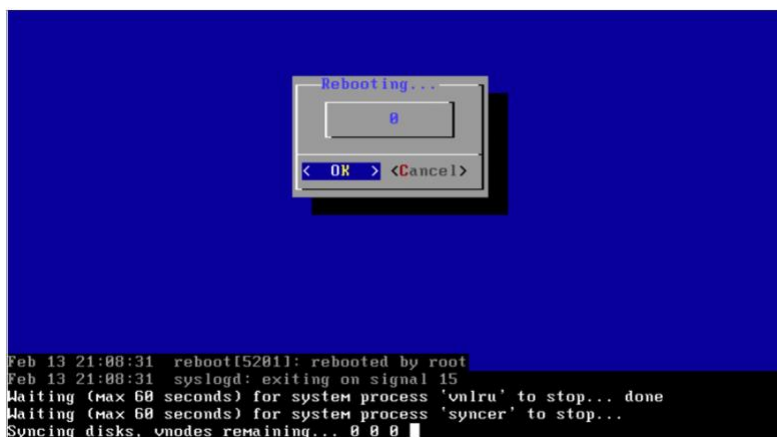After the installation is complete, the system will reboot automatically.

FIGURE 22 - REBOOTING AFTER INSTALLATION

System Initialization

After rebooting, the system will come back up with an initializing screen and ask that you wait at least ten minutes for the process to complete.

FIGURE 23 - WAIT FOR FIRST COMPLETE INITIALIZATION

The network interfaces will be shown, as well a **License Required** message.

FIGURE 24 – LICENSE REQUIRED

The system will acquire an IP address on the WAN interface from the DHCP server in the ISP router and the default address 192.168.5.1/24 will be assigned to the LAN interface.

FIGURE 25 – WAN AND LAN IP ADDRESSES

Initial Configuration Tool

The WAN and LAN IP address can be changed with the RWG configuration tool that loads after installation. Select the option **1** for WAN IP configuration changes, and option **2** for LAN IP configuration changes.

FIGURE 26 - CONFIGURATION TOOL

In this example we changed the LAN configuration. You will be prompted to enter a CIDR IP address and DHCP range.

FIGURE 27 – CHANGING THE LAN IP ADDRESS

RWG Licensing

The **Installation Unique Identifier (IUI)** is required to generate the RWG license. From the configuration tool, choose option **7** and copy the IUI.

Alternatively, you can open a web browser on a separate system and navigate to https://192.168.5.1/admin to view the GUI and copy the IUI. The web server may take a short while to display the page but will eventually show up. When the webpage loads, you can click on the **Copy** button under the IUI to copy it.
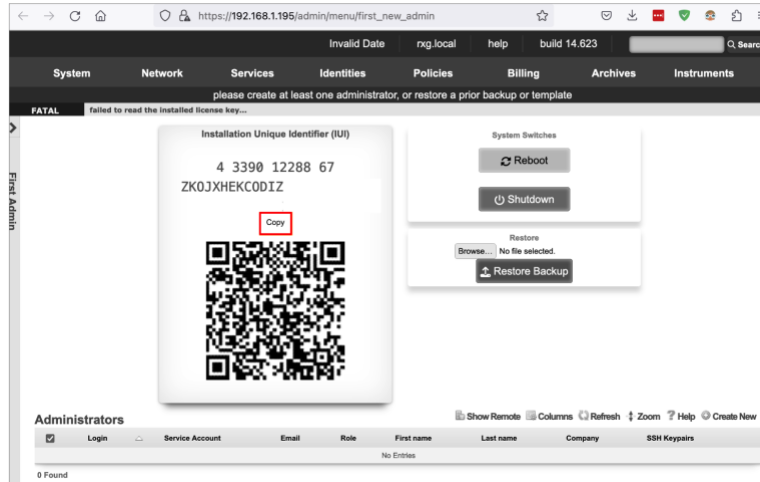

FIGURE 28 - COPY IUI FOR LICENSING PORTAL

Generating and Applying the License

The **Asset Manager** is available for RUCKUS SEs to create licenses for demos and POCs. Navigate to https://store.rgnets.com/asset_manager. You need an user account and password to login.
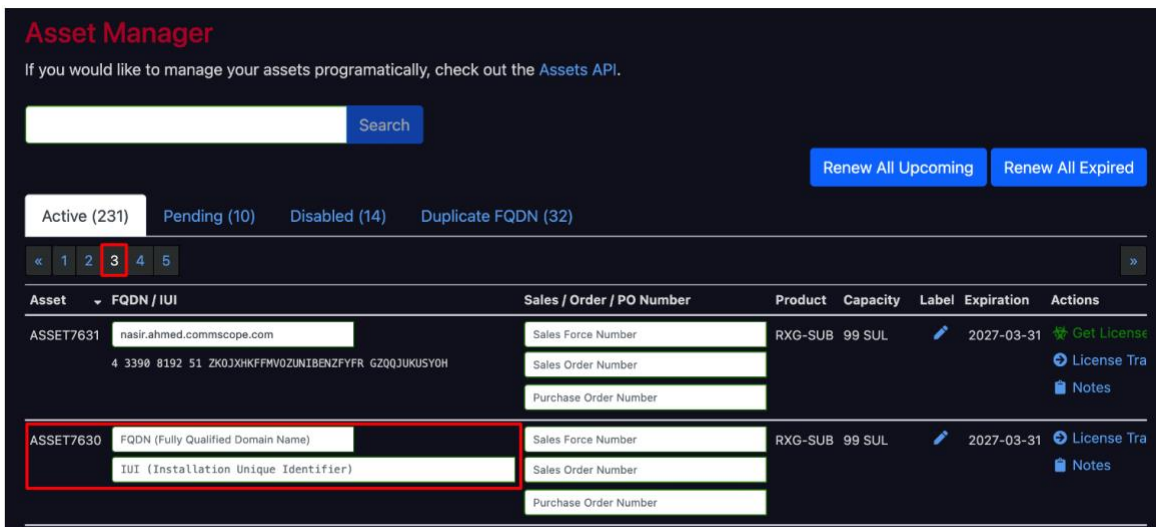

FIGURE 29 – ASSET MANAGER WITH AVAILABLE ASSET SHOWING

Enter the following information:

- **FQDN**: Enter the FQDN for your instance. If it is not defined yet, enter rxg.local. Click **Set FQDN** to complete.

- **IUI**: Paste the IUI you copied from your instance. Click **Set IUI** and the confirmation to complete.

IUI Confirmation

IUIs are immutable; please ensure you copy/paste the proper IUI.

4 2900 16384 102
XKHJYMOJWQETXUGICJRDWCOSEZJQKZOYJCYSDDGTEZAIHJDWLLWQZMASGIINOF

Are you sure you want to update the IUI for ASSET7630?

FIGURE 30 – ENTER THE FQDN AND IUI

Scroll right, then click **Get License** to see your license. Click **Copy to Clipboard** to copy it.
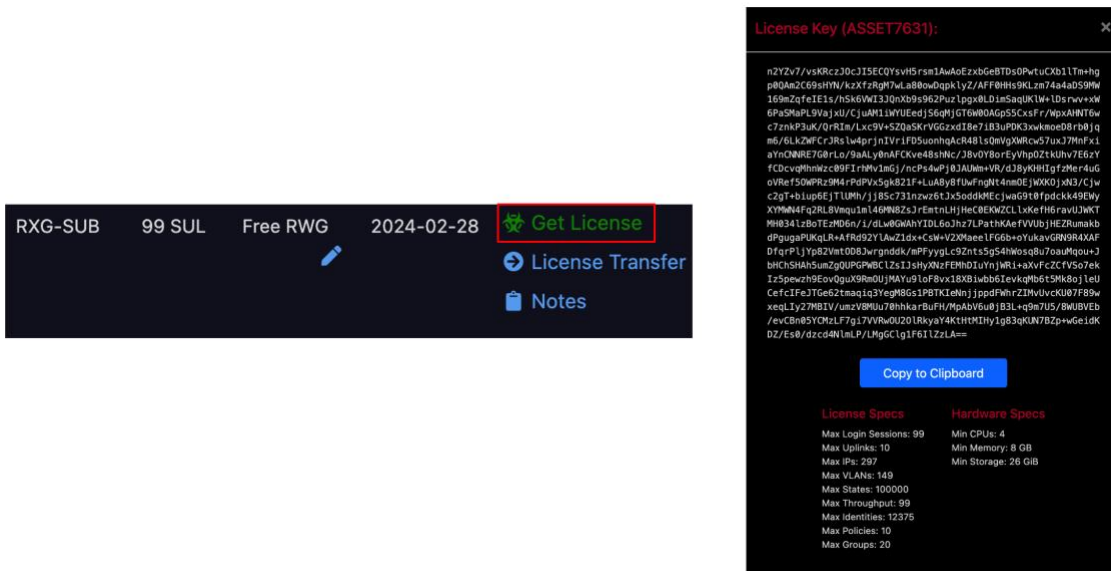

FIGURE 31 – GET LICENSE

If the RWG server has internet connectivity, you do not need to perform any additional steps, as the system will reach out to the Asset Manager server and apply the license automatically.

If the RWG server does not have internet connectivity, you need to paste the license manually. Navigate to https://192.168.5.1/admin, go to the **License Keys** section and click on **Edit**.
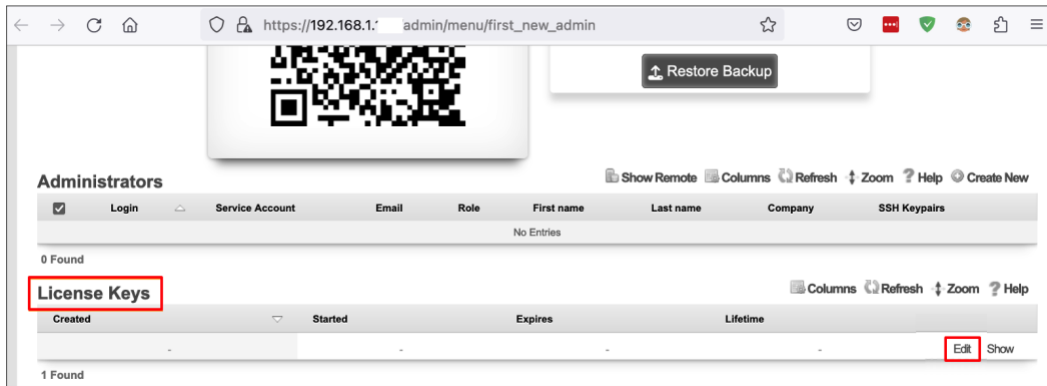

FIGURE 32 – EDIT LICENSE KEYS

Paste the license copied from the Asset Manager into the empty field and click **Update**.
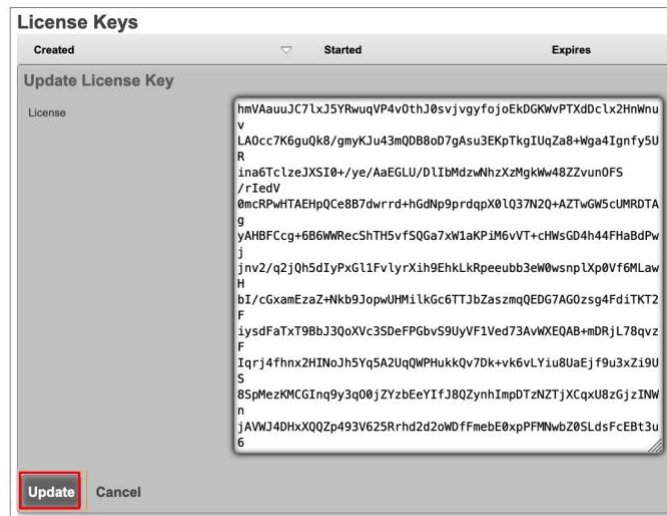

FIGURE 33 – PASTE THE LICENSE

RWG will reboot, the GUI will update and show the RWG logo, and the license file information will display in the **License Keys** section.
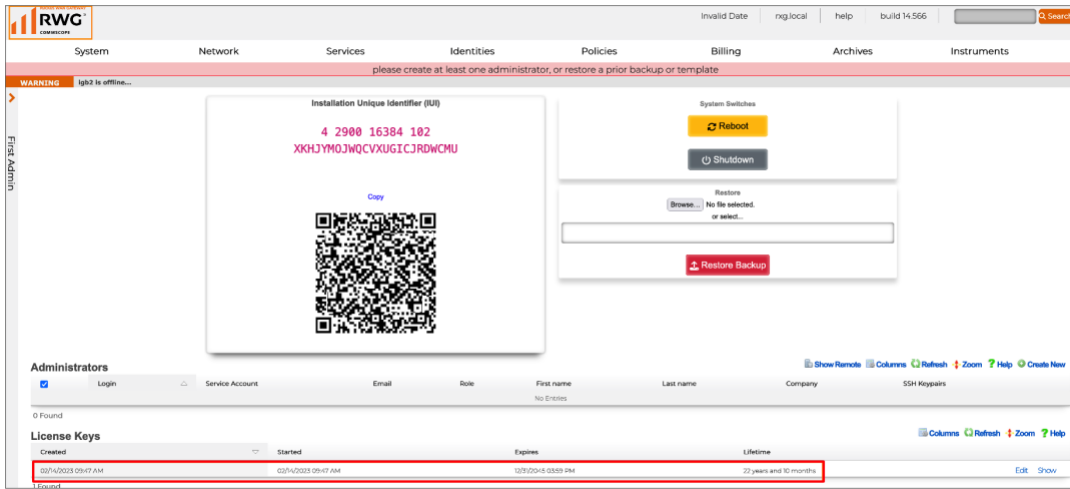
FIGURE 34 – LICENSE IS APPLIED

Initial RWG Configuration

Creating the First Admin Account

In the Admin GUI a message asking you to create at least one administrator account. To create the account, click on **Create New** in the **Administrators** section.
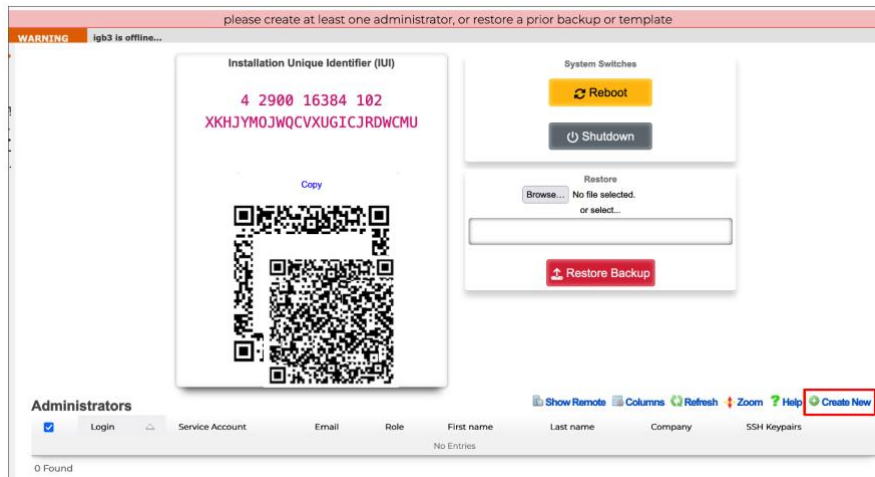
Enter the Administrator account information and apply the **Super User** role to the administrator account. Scroll down and click **Create** to finish.
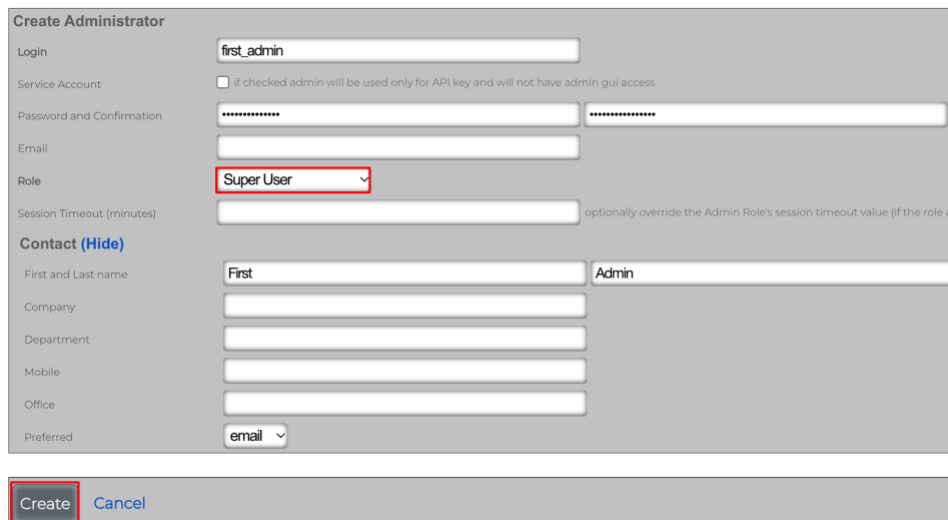
This concludes the bare metal installation. Other documents will cover the RWG's basic setup, adoption of devices, and step-by-step guides for different use cases.

RUCKUS solutions are part of CommScope's comprehensive portfolio for Enterprise environments (indoor and outdoor).

We encourage you to visit commscope.com to learn more about:

- RUCKUS Wi-Fi Access Points
- RUCKUS ICX switches
- SYSTIMAX and NETCONNECT: Structured cabling solutions (copper and fiber)
- imVision: Automated Infrastructure Management
- Era and OneCell in-building cellular solutions
- Our extensive experience about supporting PoE and IoT