

IGEL OS(RPI4) for NComputing RX420(IGEL)

STEP-BY-STEP GETTING STARTED GUIDE



Version 1.01 - March 11, 2021

Current Released Software: IGEL OS (RPI4) 11.01.100

IMPORTANT

Please verify you have the latest version of this 'Getting Started Guide' and the others, as things do change. The newest versions are available [here](#).

The screenshot displays the IGEL Community website. At the top, there is a navigation bar with the IGEL Community logo and links for 'Get Started!', 'CP Store', 'Blog', 'Events', 'Links', 'Training', and 'More'. Below the navigation bar, a banner reads: 'Installing and Configuring IGEL Software has never been easier as when you follow the IGEL Community Step-by-Step Getting Started Guides!'. The main content area features two sections. The first section is titled 'IGEL Software Suite Step-by-Step Getting Started Guides'. It includes a paragraph: 'This guide walks you, step-by-step, through what is required for you to get up and running in a proof-of-concept or lab scenario.' Another paragraph states: 'In approximately an hour's worth of work, you will have a fully working IGEL software-defined end-point management solution consisting of the IGEL Workspace Edition, IGEL Universal Management Suite (UMS), and IGEL Cloud Gateway (optional).' Below this, it says 'All this, screen-shot by screen-shot!' and provides a link: '[IGEL Software Suite Step-by-Step Getting Started Guide](#)'. The second section is titled 'IGEL OS(RPI4) for NComputing RX420(IGEL) Step-by-Step Guide'. It begins with: 'In this step-by-step guide, you will learn how to customize the IGEL OS look and feel and even lock it...'. To the right of each section is a small thumbnail image of the respective guide's cover page.

NOTICE

Written and Maintained by Douglas A. Brown & Sébastien Pérusat.

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IGEL Endpoint Management. Designed in Germany, Made from Genius!

The above legalese aside, this is a product of the IGEL Community. Please feel free to do with it as you choose; share it, contribute to it, and use it! But, please do not Sauté!

Changelog

This guide is always a work in progress. Below is the list of changes added to each version. Please stay tuned for future releases [here](#).

Date	Version	Description of Changes
2/25/2021	1.0	<ul style="list-style-type: none">▪ First Version
3/11/2021	1.01	<ul style="list-style-type: none">▪ Updated known limitations▪ Fixed misc. typos▪ Updated links in additional resources section▪ Fixed numbers mistakes

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Introduction

1. IGEL OS(RPI4) for RX420(IGEL) Overview

Welcome to the IGEL OS(RPI4) for NComputing RX420(IGEL) Getting Started Guide. This document aims to 1) introduce you to the new RPI4 device from IGEL and 2) walk you through getting the RPI4 setup and running.

As noted, IGEL has released an Arm version of the IGEL OS, the next-gen edge OS for cloud workspaces, in collaboration with NComputing and their RX420 Raspberry Pi device.

IGEL OS(RPI4) is purpose-built for enterprise access to Citrix environments.

The IGEL OS (RPI4) is:

- Citrix Ready HDX optimized
- Easy, efficient enterprise management & control
- Ships with a Chromium browser
- Supports native dual 4K displays
- Experimental support for Citrix Workspace Hub & Casting (Coming soon)
- Optimized for GPU offloading
- 802.1x (PEAP, EAP-TLS, EAP-TTLS) support
- Much more...



2. NComputing RX420(IGEL) Hardware Details

The NComputing RX420(IGEL) ships with the following hardware specifications:

- Embedded IGEL OS for Arm with 30-day Starter license (90-day license is available when registering the RPI4 during the Welcome Wizard)
- Built-in 5GHz & 2.4GHz 802.11 a/b/g/ ac Wi-Fi
- 2GB system RAM
- 16 GB internal Micro SD card
- 2x USB 3.0 ports and 2x 2.0 ports
- Dual micro-HDMI video ports supporting resolutions up to 4K @ 60Hz single display or 4K@30Hz dual display.
- Integrated Gigabit Ethernet and 802.11 a/g/b/ac Wi-Fi (5GHz & 2.4GHz)
- 2 USB 3.0 and 2 USB 2.0 high-speed ports with transparent USB redirection
- Integrated power button
- Active thermal cooling solution (yes, a fan)
- Enterprise-grade casing enclosure
- Less than 10W power consumption
- Power adapter with sleep mode
- VESA mount kit included in the box
- FCC/CE commercially certified



For a detailed list of hardware specifications, visit the NComputing RX420(IGEL) product page at <https://www.ncomputing.com/products/RX-series/RX420%28IGEL%29>

3. Known Limitations

The IGEL OS(RPI4) for NComputing RX420(IGEL) operating system is a new release for IGEL and has a few known limitations. Also, it is not at feature parity with the IGEL OS x86 version. Please refer to the [Unsupported Feature List](#) in the Appendix of this guide.

Below are a few common questions. Please reach out to your IGEL Presales engineers, NComputing, or feel free to ask inside the [IGEL Community](#) if you have any questions.

What is the maximum resolution the NComputing RX420(IGEL) can support?

NComputing RX420(IGEL) thin clients support screen resolutions up to 3840 x 2160 (4K) @ 60Hz with a single display, up to 2x 1920 x 1080 (FullHD) @ 60Hz in dual-display setups, or 2x 3840 x 2160 (4K) @ 30Hz in dual display setup.

What is the maximum resolution used in Citrix sessions configured for full-screen video codec (H.264)?

The full-screen video codec (the H.264 codec) works most effectively when the decoding will be accelerated with the client's hardware. The H.264 hardware acceleration on the client for the Citrix session supports resolutions up to 1920x1080 @ 60Hz. Any Citrix session with higher resolutions will have to be configured not to use the full-screen video codec. The HDX protocol decoding on the client will be solely done by software means, which can cause suboptimal performance in some scenarios. NComputing and IGEL generally recommend using screen resolutions up to 1920x1080 for the best Citrix experience when using either single or dual display.

Important Information:

- Use the NComputing RX420(IGEL) hardware, adapters, and power supply as nothing else is supported by IGEL support.
- Setting up an NTP Server is crucial as the RX420(IGEL) does not contain a CMOS Battery
- H.264 is available but on one display output and limited to Full HD
- Custom Partitions developed for the x86 version of the IGEL OS are not supported on the IGEL OS(RPI4). If you want to use them, you will need to change them to support the correct Arm architecture
- It is best practice to first connect the RX420(IGEL) via a Network before booting the device for the first time.
- Please try first cabled HID devices before starting with wireless versions
- If you want to (re-)install IGEL OS on your RX420 please don't use the OSC. A separate recovery Guide will follow.
- If you want to (re-)image your RX420 via PXE / TFTP, this isn't available on Rapsberry Pi Platform.
- There is no BIOS Settings you can access, so you can't press DEL Key to access the BIOS.

4. Unboxing

When you purchase the RX420(IGEL) with IGEL OS(RPI4), you will receive it in a fancy little box, as shown below.



The following items are comes packaged with the NComputing RX420(IGEL):

1. The NComputing RX420(IGEL) Raspberry Pi thin client
2. Safety information, a notice of certification, and two pages of important notes you will want to read
3. VESA mounting brackets
4. USB power cord, with the corresponding outlet plugs for your region of purchase



If you are connecting your RX420(IGEL) device to a monitor, you will also need to purchase the Micro HDMI to HDMI Adapter kit, as shown below. Inside the box, you will receive two Micro HDMI to HDMI cables that will allow you to connect two HDMI compatible displays to your NComputing RX420(IGEL) device.

Beware, make sure the Micro HDMI to HDMI cable is fully inserted into the port on the RX420(IGEL). If not, you may experience issues with flashing or dysfunctional displays.



Important! Be careful when disconnecting the RX420(IGEL) from its power source before proper shutdown as it may damage the device.

To properly shut down the device, use the shutdown menu item within the IGEL OS. If you must, hold the power button down for more than 7 seconds until the device powers down.

5. IGEL Software Suite Getting Started

If you are new to IGEL software and installing the IGEL suite of products for the first time, it is highly recommended you take a look at the **IGEL Software Suite: Step-by-Step Getting Started Guide**.

This guide aims to provide you with the tools, knowledge, and understanding to download IGEL's software and perform basic installation and configuration without being forced to read many manuals and numerous web support articles.

This guide walks you, step-by-step, through what is required for you to get up and running fast.

In approximately an hour's worth of work, you will have a fully working IGEL software-defined endpoint management solution consisting of the IGEL OS (x86 edition), IGEL Universal Management Suite (UMS), and IGEL Cloud Gateway (optional).



All this, screen-shot by screen-shot!

At a minimum, the IGEL Software Suite: Step-by-Step Getting Started Guide helps you install the required IGEL UMS management tool and leaves you with a basic understanding of the rest of the IGEL Software stack. It is highly recommended for anyone new to IGEL.

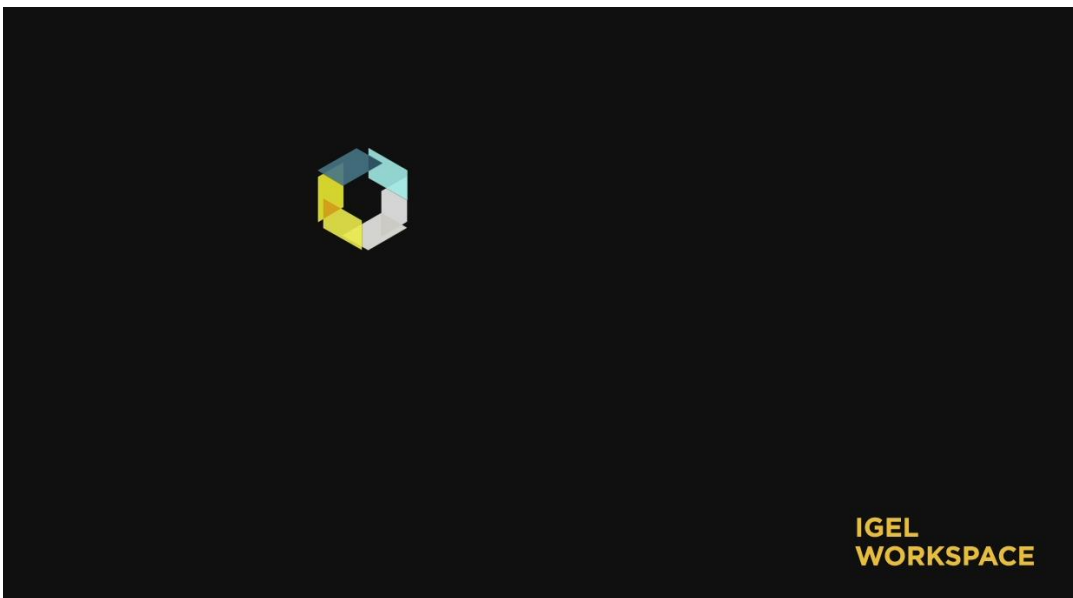
To learn more and download the IGEL Software Suite: Getting Started Guide, please visit <https://www.igelcommunity.com/igel-getting-started-guide>.

6. First Boot

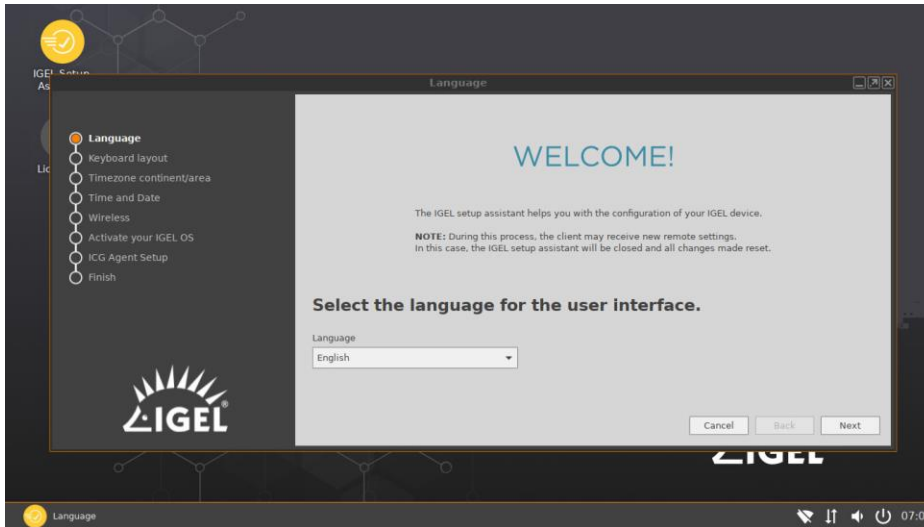
You are ready to get started. Time plug in the displays, keyboard, mouse, network cables, and the power cable (last). How exciting!

The following defines the best practices for setting up the NComputing RX420(IGEL):

1. It is crucial to note that the RX420(IGEL) will power on automatically when you plug in the power cable. Be ready for it. It is critical to connect all cables (displays, keyboard, mouse, and network) before attaching the power cable.
2. Once the RPI4 starts up, you should see the following boot screen. If you see anything else, please contact your local IGEL Presales Engineer.



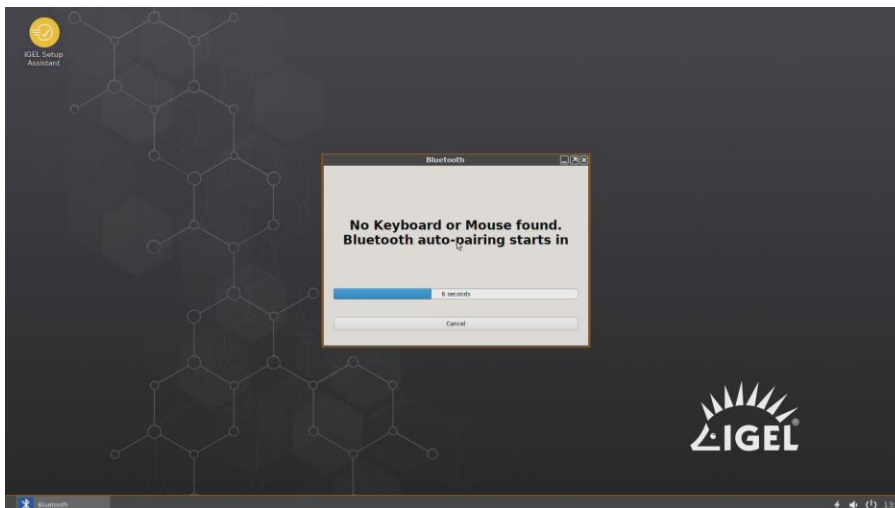
- Once NComputing RX420(IGEL) with IGEL OS(RPI4) boots, you will be brought to the desktop, and the Welcome Wizard should launch.



- However, if you do not have a wired keyboard and mouse plugged in, you will need to configure it.

By default, IGEL OS will try to auto pair your keyboard and mouse, though if you run into trouble, you might see the following screen. If you do, please refer to the **Using Bluetooth Tool KB** article - <https://kb.igel.com/igelos-11.05/en/using-bluetooth-tool-42011232.html>.

It is a best practice first to use cabled HID devices before configuring your Bluetooth devices.



The next step is to register the IGEL OS RPI4 with the IGEL UMS and get some apps, sessions, and configurations installed.

Device Registration

1. IGEL OS(RPI4) Registration

The IGEL OS was designed to be paired with and managed by the IGEL Universal Management Suite (UMS) tool. Though you can configure most settings and sessions locally, it is best to register the IGEL RPI4 with an IGEL UMS server to get centralized management's full benefits.

The following section details the different methods for registering an IGEL OS endpoint with the IGEL UMS.

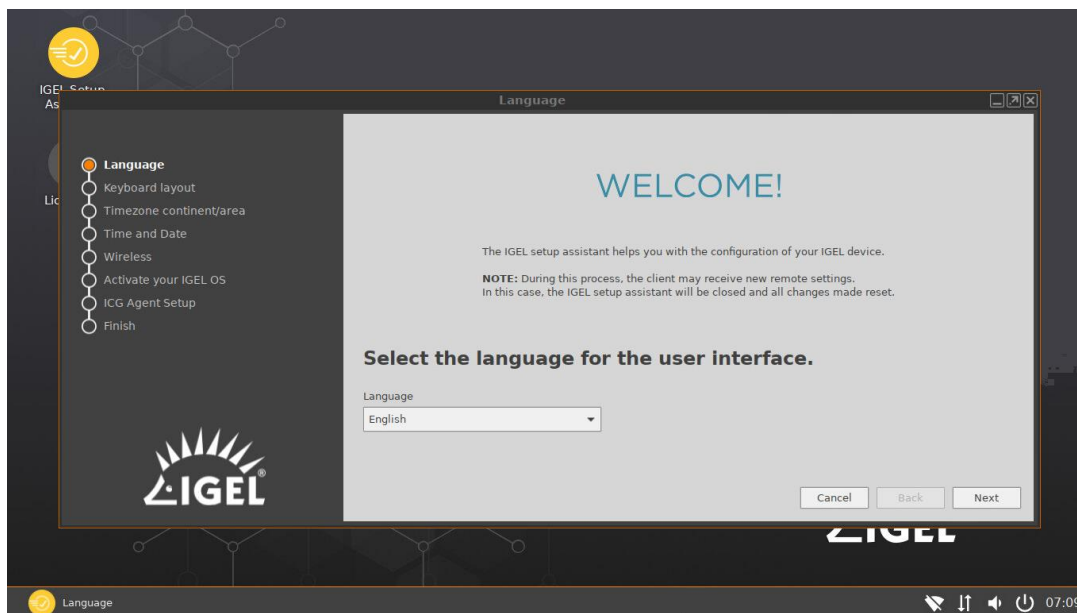
2. Registering the IGEL OS with the Welcome Wizard

When you first boot any IGEL OS-based device, you will be presented with a **Welcome Wizard**. This wizard allows the user to perform basic configuration, register for the full 90-day evaluation license, and register the IGEL OS with the IGEL Cloud Gateway. In most cases, you will register the devices from the UMS, but it can come in handy to do it locally.

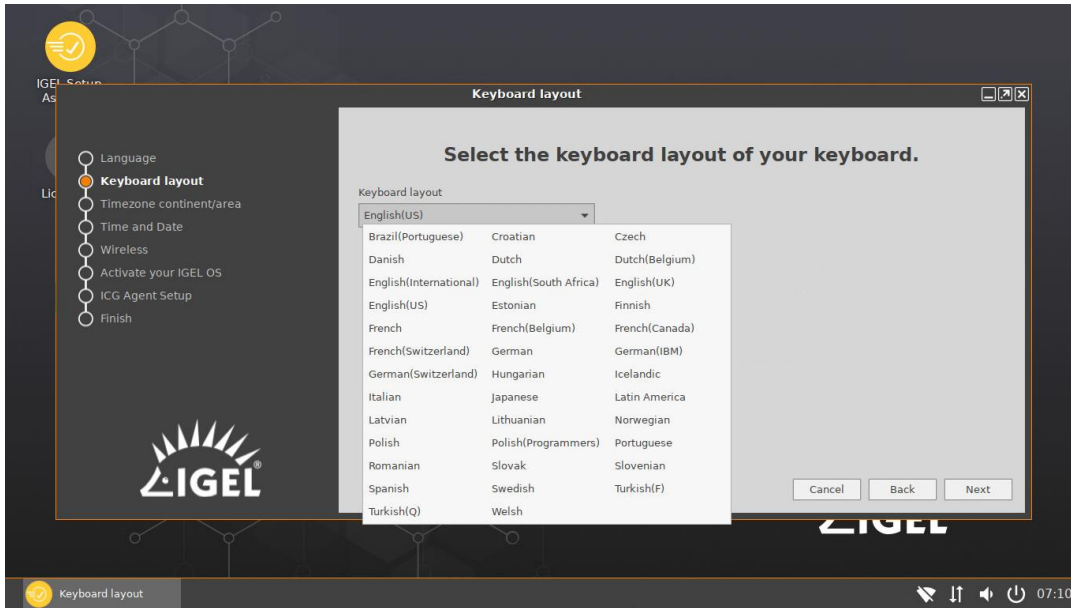
If you plan on registering the IGEL RPI4 from the IGEL UMS, please skip this section and advance to the [Registering the IGEL RPI4 through the IGEL UMS](#) section.

The following steps detail how to register your new RPI4 with the IGEL UMS from the device:

1. Select the desired language and click the **Next** button to continue.

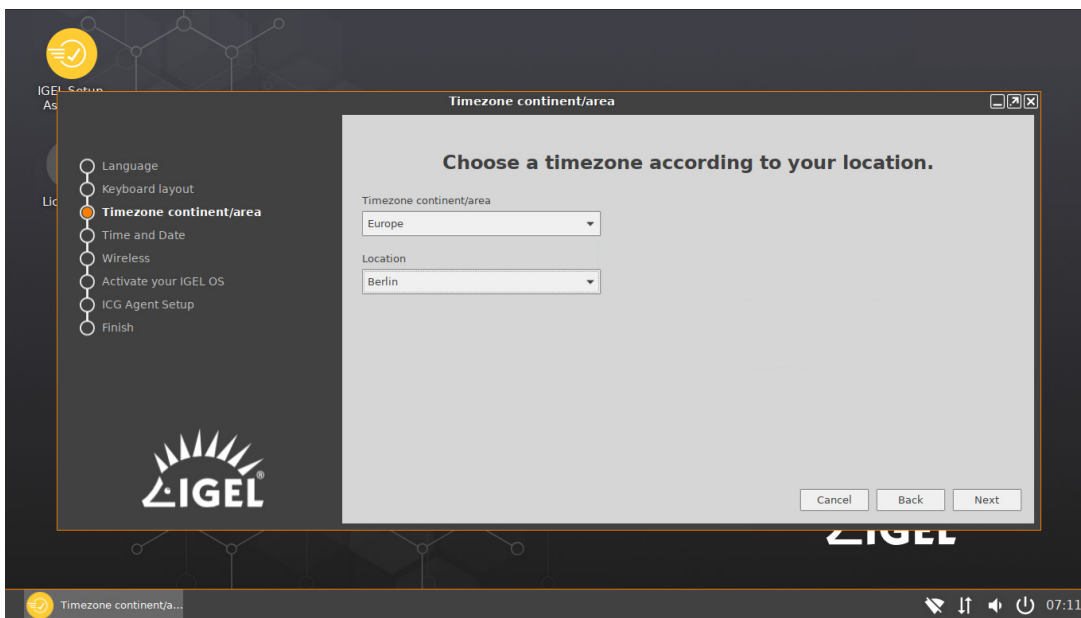


- Select the keyboard layout the device's users require and click the **Next** button to continue.



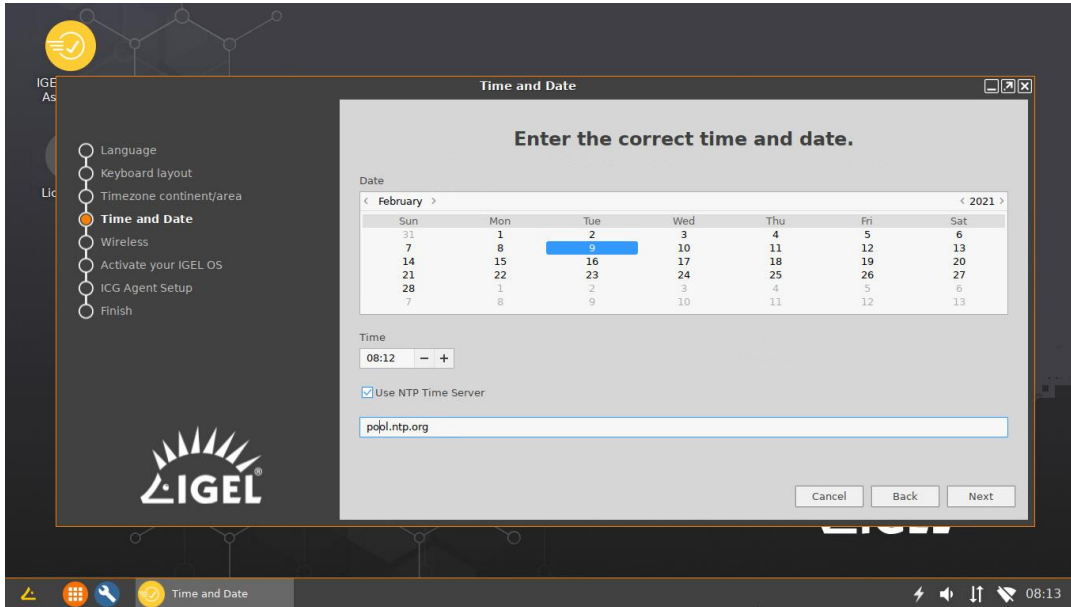
- You are prompted to select the time zone. This can be done during the **Welcome Wizard**, but it is also a best practice to configure it via IGEL UMS profile as the RX420(IGEL) does not have an onboard CMOS battery. We will document how to configure NTP time later in this guide. Stay tuned.

Select the desired time zone and location and click the **Next** button to continue.



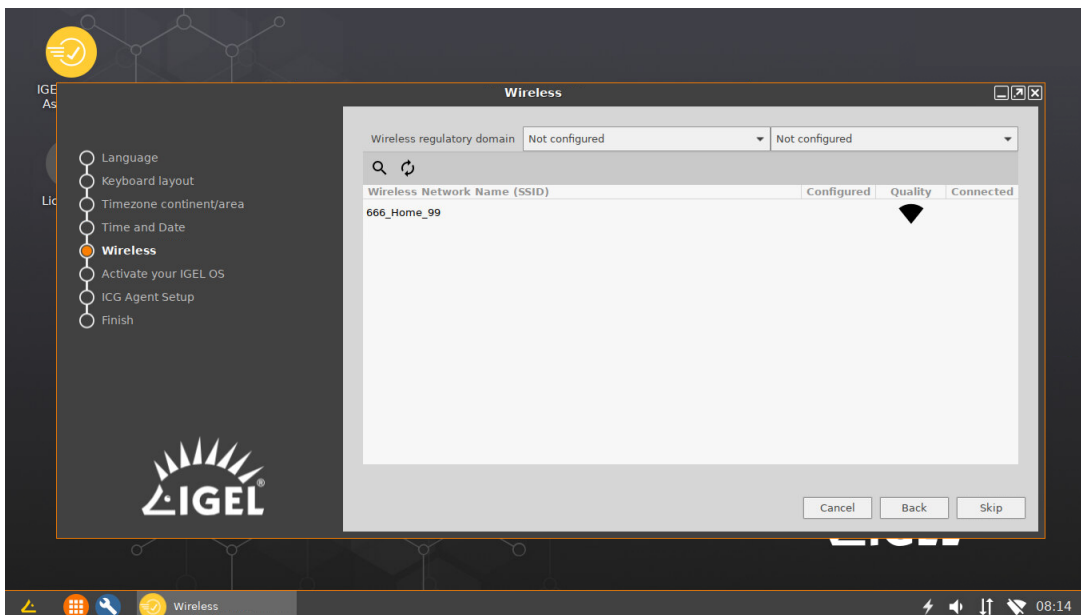
- As with the time zone, you can configure the time and date centrally. Though, for now, let's set the NTP time server locally.

Click to check the **Use NTP Time Server** text box and enter an NTP server into the associated text box. Once finished, click the **Next** button to continue.



- If you are using wireless access, please select the correct access point. For this example, the RX420(IGEL) is connected via a network cable, and hence you are not required to configure wireless.

Configure as required and click the **Skip** or **Next** button to continue.



6. Now for the thousand-dollar question, what type of license will you use? This all depends on and has user experience consequences. Let me explain.

All IGEL OS instances come with a starter license. This is a license that allows you to work for 30 days without being required to license the device. If you would click Cancel to the Welcome Wizard, you will utilize the Starter license and can still use the IGEL OS, but you will miss one critical feature, the multimedia codec (MMCP). This is very important as today's world is graphically intense and includes an abundance of multimedia content. To give the best user experience in a virtual environment, it is best to render audio and video content locally on a device when multimedia content is encountered; however, doing so requires the appropriate codecs to decode media content rendered on the device.

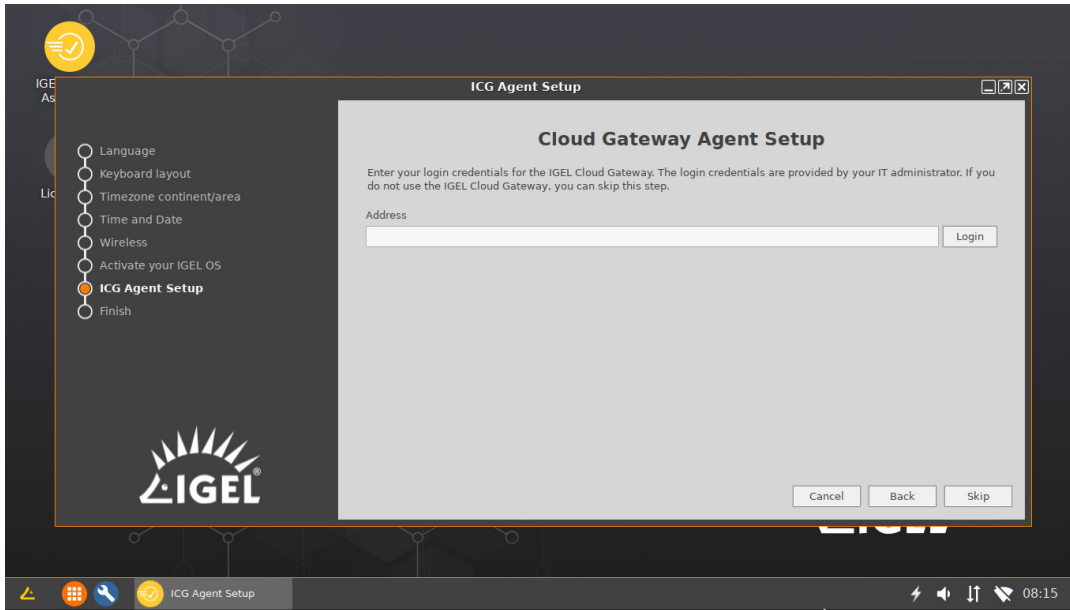
It is highly recommended you add a license by requesting a fully-featured 90-day evaluation license via the Welcome Wizard or purchase a full license from IGEL Sales.

In this guide, we will be deploying a full IGEL OS license to the device. One more thing to remember, the IGEL RPI4 might run the IGEL OS for the Arm architecture, but it is still the IGEL OS, and it uses the same license as an x86 IGEL OS device does. You can always move an existing license to an IGEL RPI4 device.

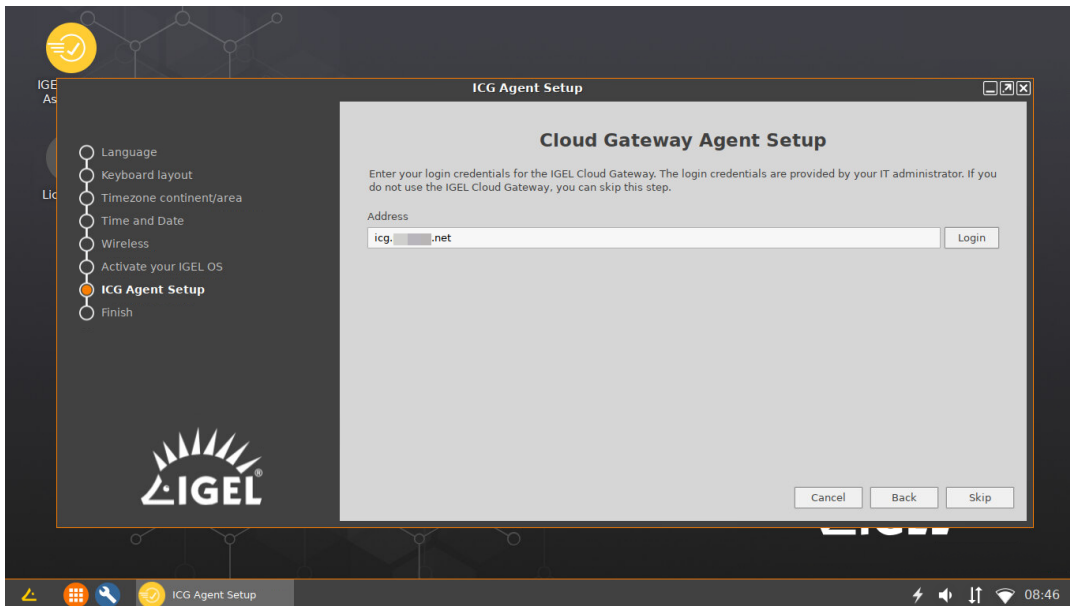
Select the **Managed License Deployment** radio button and click **Next** to continue.



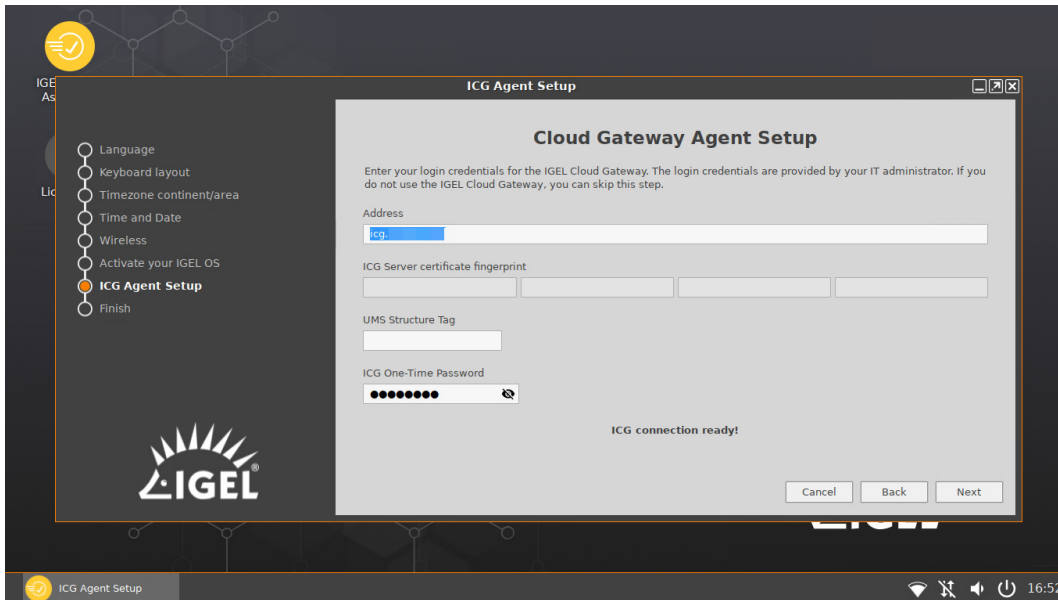
7. Next, you are prompted to connect to the IGEL Cloud Gateway (ICG). If you will not be utilizing ICG, click the **Skip** button and fast forward to step 11.



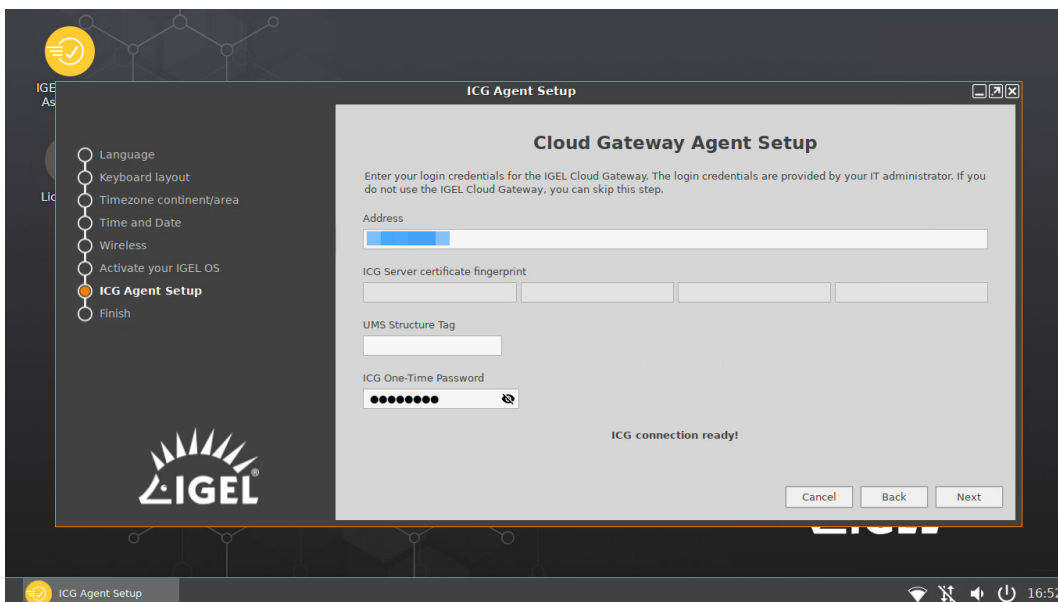
8. To connect to a Cloud Gateway server, enter the domain name of the ICG server in the **Address** text box and click the **Login** button.



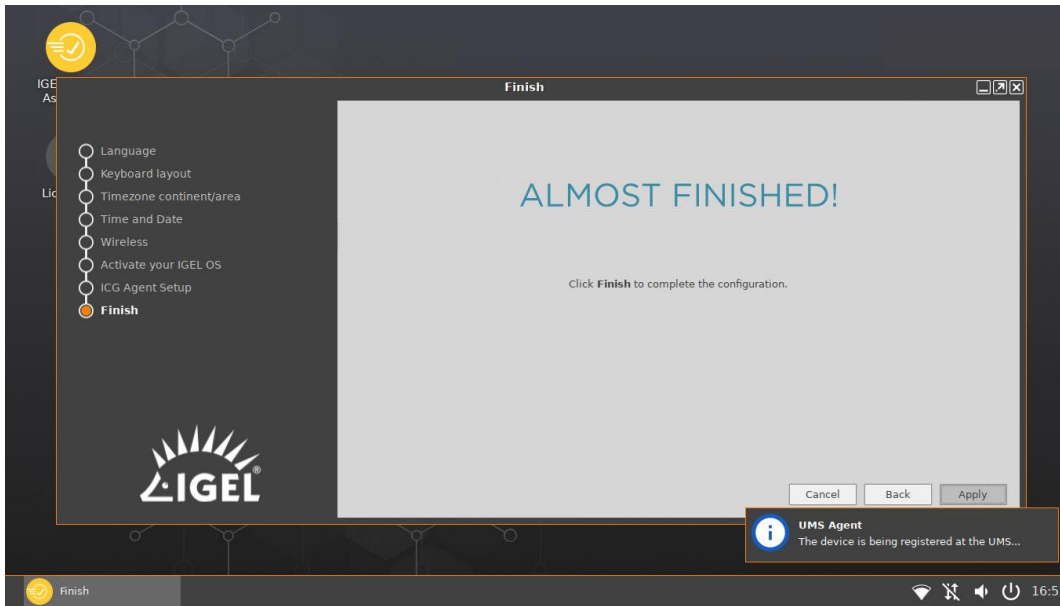
- Next, you are prompted to authenticate with the IGEL Cloud Gateway. Depending on how your ICG server was set up, enter an ICG server certificate fingerprint or ICG One-Time password and click the **Login** button.



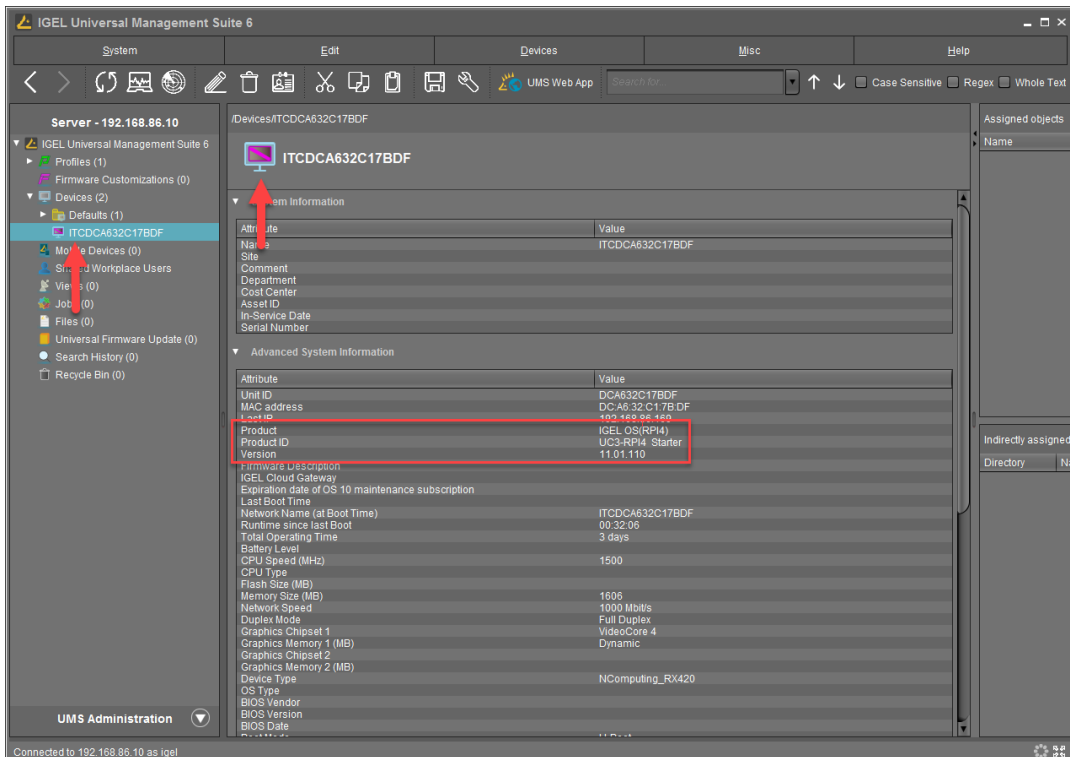
- If the stars align, you should be prompted with the **ICG connection ready!** text! Click **Next** to continue.



11. You are "Almost Finished!" If you choose to connect to an IGEL Cloud Gateway server, you should see a notification popup notifying you the RPI4 is being registered with the IGEL UMS.



12. Flip back to the IGEL UMS, and you will see your newly registered device listed. Though, you will notice the device image is purple, meaning the device is not fully licensed. Please do not fret. We will add a full license later in this document.



3. Registering the IGEL OS from the IGEL UMS

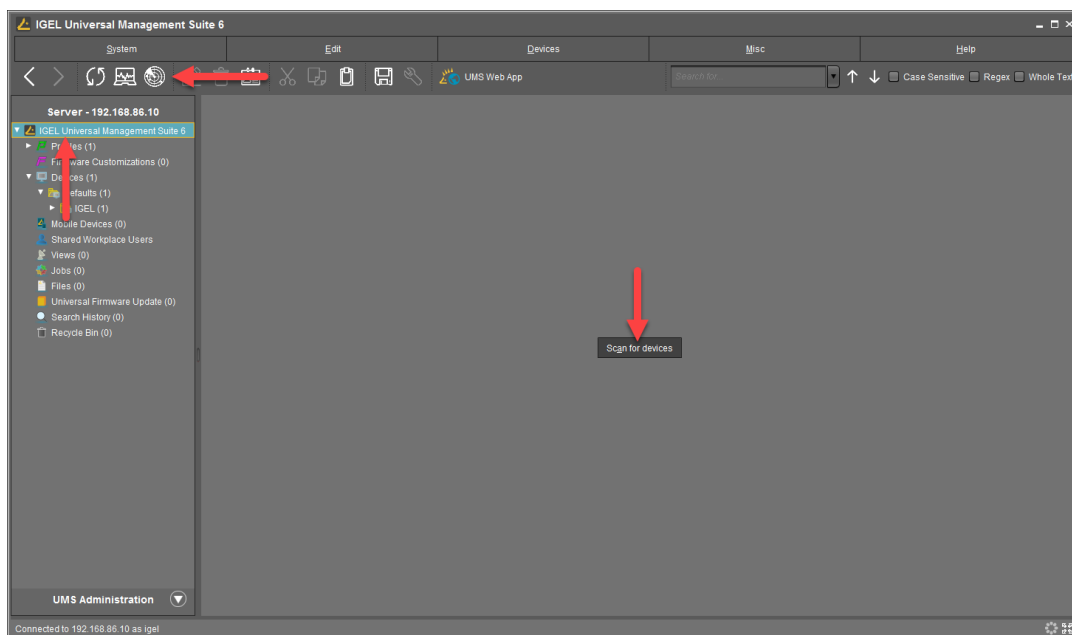
You are ready to register your IGEL RPI4 with the IGEL UMS server.

Note: If you are connecting to a UMS server via an ICG, you are not required to register the device as that process is performed when setting up the ICG session on the client device.

The following details how to configure the UMS to find and register IGEL OS instances and import them into the UMS:

1. Click to select the **IGEL Universal Management Suite 6** node to expose a big button prompting you to scan for devices, thus find all new devices.

Click the **Scan for devices** button to continue.



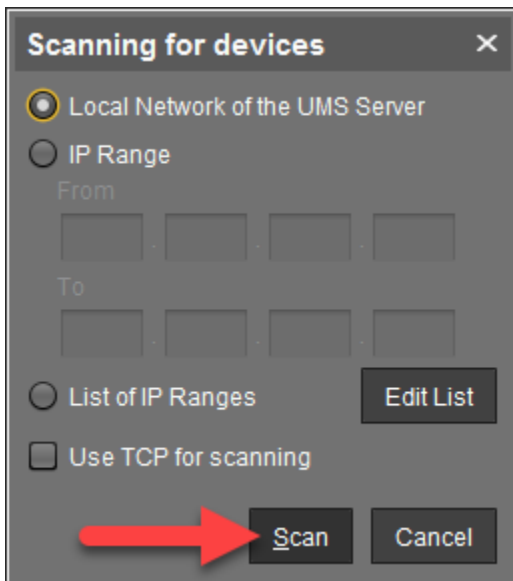
2. The **Scanning for devices** windows opens, prompting you to define the network you wish to scan.

For more information on importing and managing IGEL devices, please refer to [Managing Thin Clients in IGEL UMS 5 \(Universal Management Suite\)](#) video along with the [Searching for Devices](#) KB article.

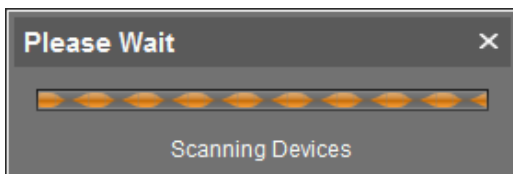
If the UMS experiences problems finding your clients, please verify you have connectivity between hosts. UDP should be open between the IGEL OS and UMS. Try the checkbox **Use TCP for scanning** to help with figuring out if this is the problem. You can try scanning a specific IP Range when **Use TCP for scanning** is checked.

For more information, refer to the [Registration of a Device fails](#) and [Device Scan or Online Check fails](#) KB articles.

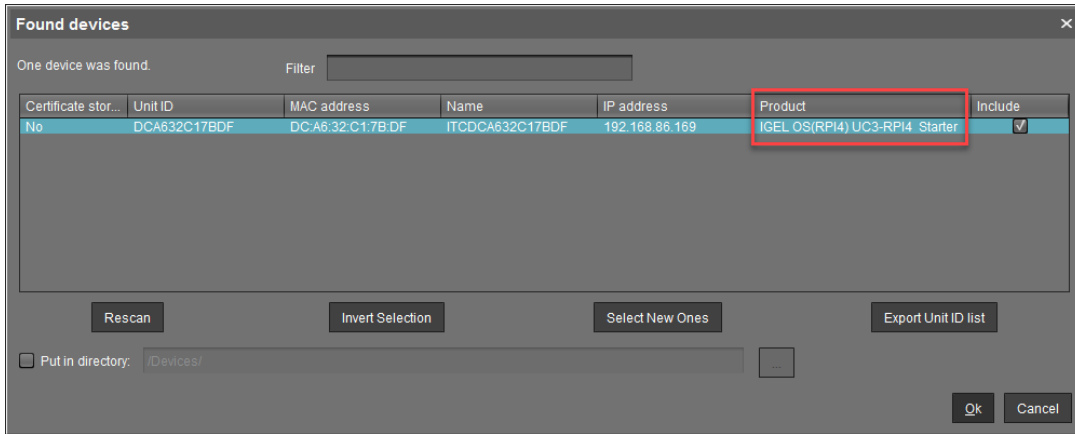
Click the **Scan** button to scan for devices on the specified network.



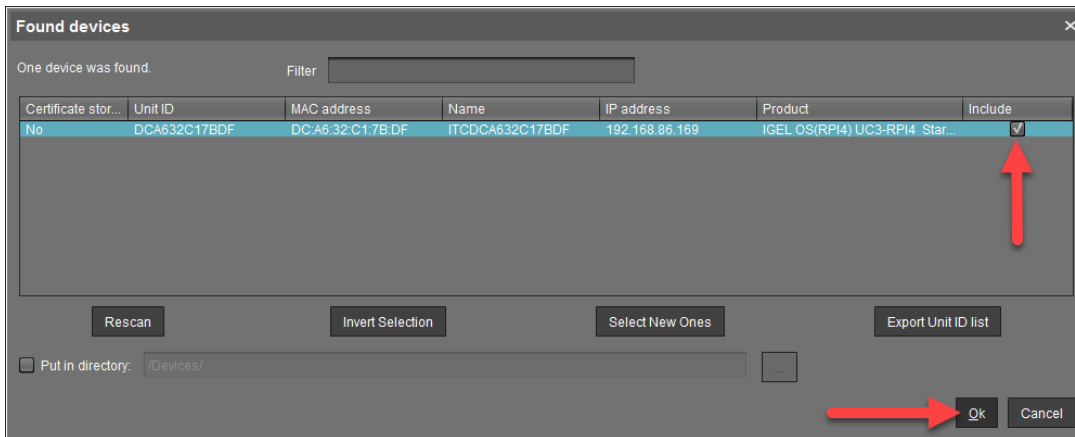
3. The UMS scans the desired network(s) for any available IGEL OS device.



- The **Found devices** window opens, listing the IGEL OS devices that were found during the scan. If you do not see your device, make sure port 30005 is not blocked within your network. If the **Certificate stored** column states **Yes**, the device has already been imported or is connected to another IGEL UMS sever.



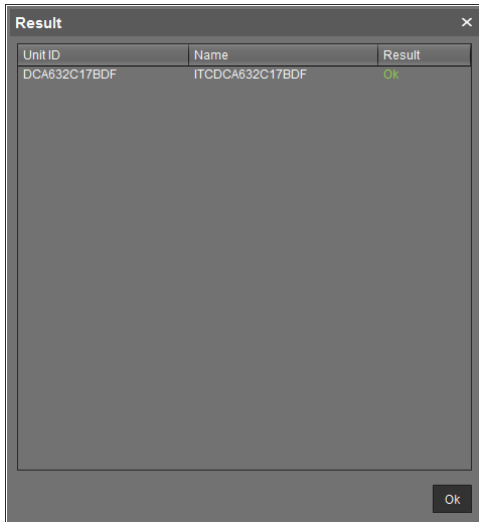
- Click to check the **Include** checkbox of the IGEL OS device you wish to import and click the **Ok** button to continue.



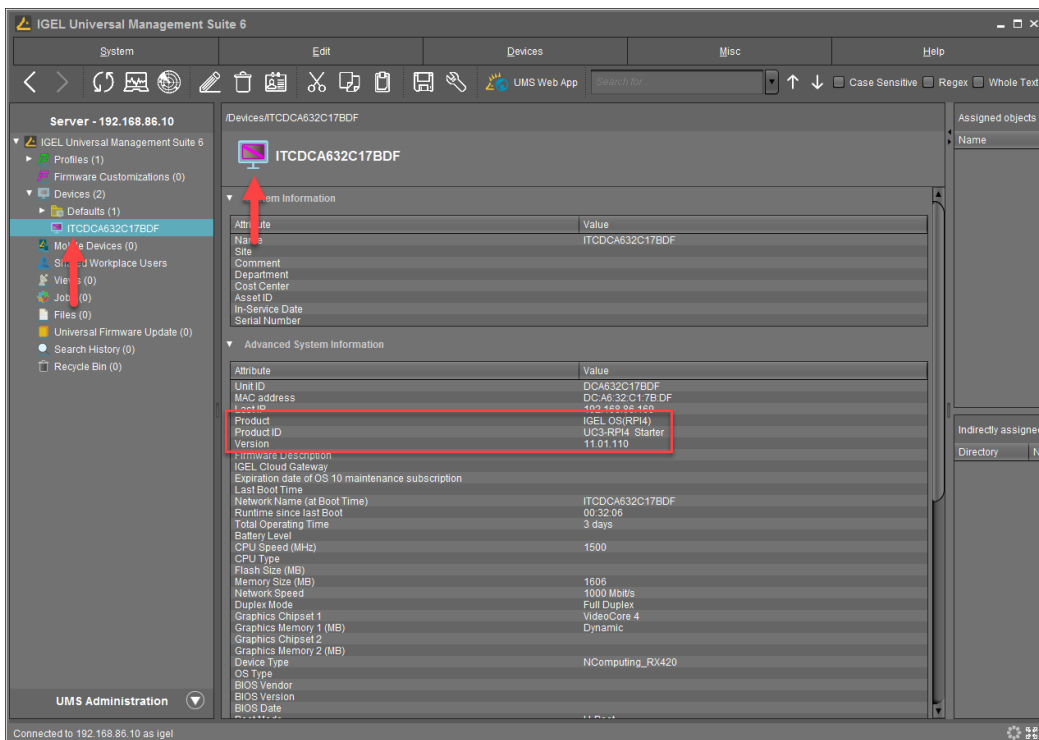
- The **Result** window opens and lists your newly registered device.

If you do not see a lovely green **Ok** text, please refer to the **Registration of Devices fails** knowledgebase article - <https://kb.igel.com/endpointmgmt-6.06/en/registration-of-a-device-fails-37281897.html>.

Click the **Ok** button to continue.

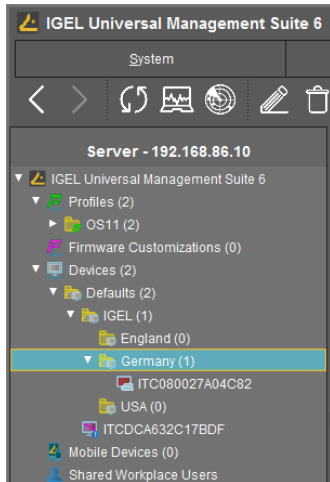


- Flip back to the IGEL UMS, and you will see your newly registered device listed. Though, you will notice the device image is purple, meaning the device is not fully licensed. Again, no worries. We will add a full license later in this document.



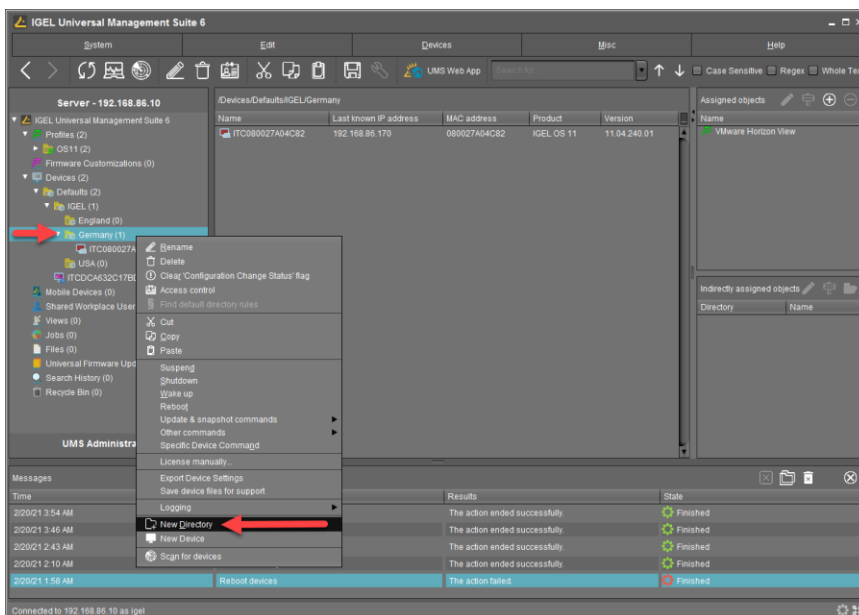
8. The next step is to add a bit of organization. Of course, if you are an existing customer and this is not your first device, then you might not need this step. If you built your IGEL UMS using the steps in the [IGEL Software Suite - Step-by-Step Getting Started Guide](#), it is recommended to complete the following steps to allow some organization of the different device architectures.

When you created the devices folder structure, you did so with x86 in mind, but now you have Arm devices. It is recommended to make a couple of new folders to house the x86 devices and your Arm devices.



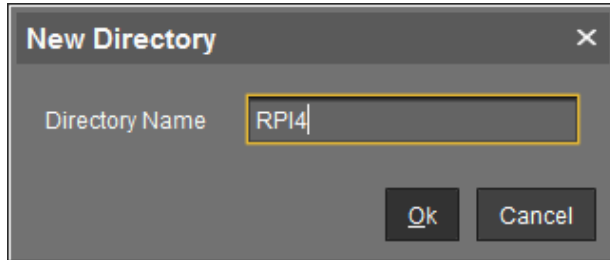
9. Where you create these new folders is up to you. We will make the new folders under the folder that currently contains your x86 devices.

Right-click on the device's root folder and click the **New Directory** link.

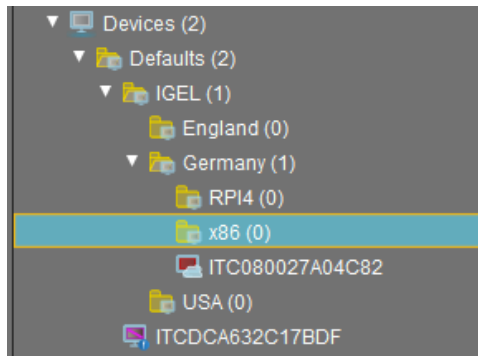


10. The **New Directory** window opens. Since you will be creating two new folders, one for x86 and one for Arm, you will need to create two new folders. For the first, assign the desired name, for example, RPI4.

Once finished, click the **Ok** button to create the directory.

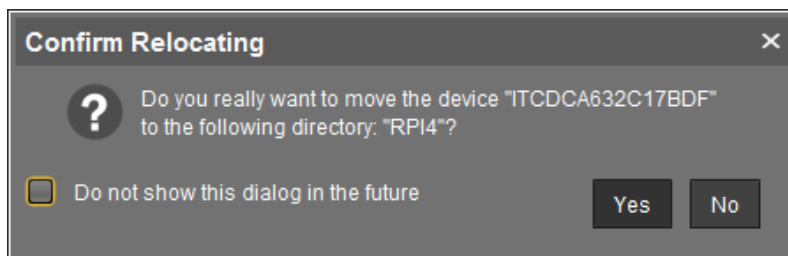


11. Create one more folder for your x86 devices until your folder structure looks somewhat as shown below.



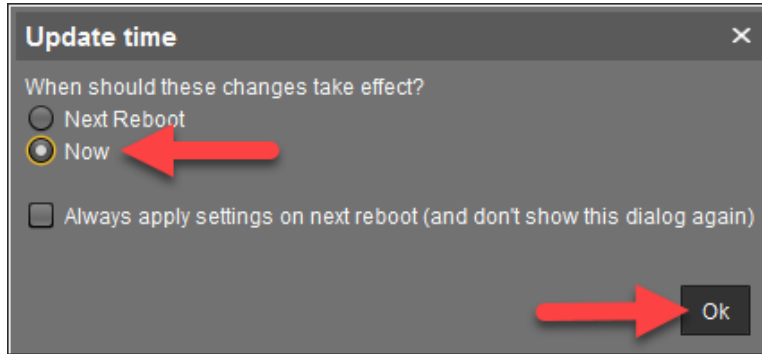
12. Now you are ready to move the devices into the newly created folders. All you need to do is drag them from their current location to the new folder.

Upon moving a device, you will receive a popup, like the one shown below. Click the **Yes** button to confirm your desire to move the device.

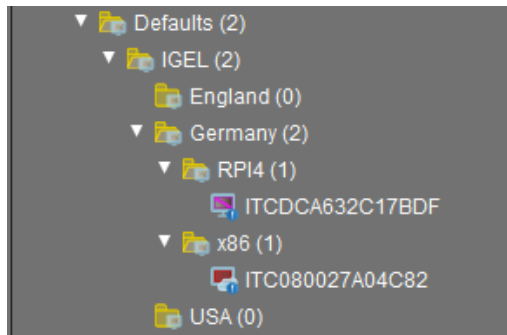


13. You are prompted to specify at what time the new settings will take effect. You can have the profile take effect the next time the user reboots the OS or can make the changes take effect right NOW! Yes, it is that powerful: real-time changes, no reboots required! This is up to you and your organizational policies.

For this example, click the **Now** radio button and click **Ok** to apply this change in real-time.



14. Move any remaining devices to the correct folders now.



You are done and ready to create some basic UMS profiles to start configuring your new NComputing RX420(IGEL) with IGEL OS(RPI4) devices. Yippie, we are moving right along!

Profiles and Licensing

1. Basic Configurations and Profiles

It is time to start creating some basic configurations for your new NComputing RX420(IGEL) with IGEL OS(RPI4) device(s). Of course, with the IGEL UMS, there are six ways till Sunday to customize the IGEL OS so you can go crazy, but for this guide, we will create only a couple.

- Setup centralized time and date configuration via an NTP Server
- Enable the ability to shadow IGEL OS devices.

In future revisions of this guide, we will add more, but for now, this is a good start.

2. How to Configure NTP Server via UMS Profile

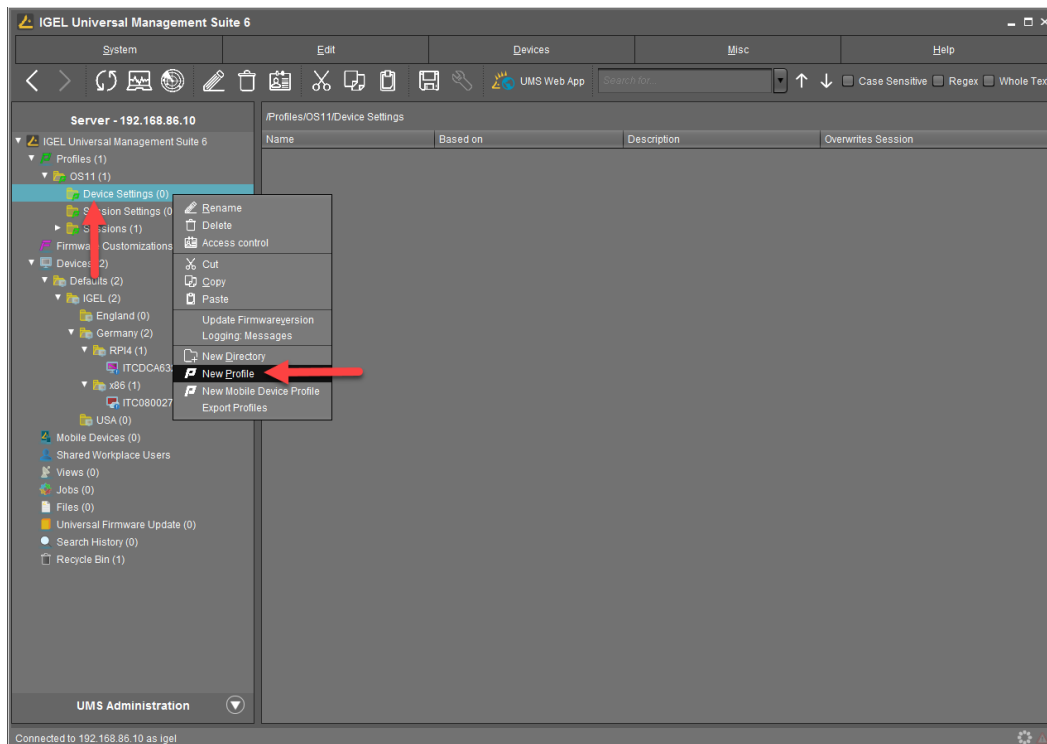
It is best to configure your IGEL OS devices' time and date to an NTP Server using the Network Time Protocol via an IGEL UMS profile. The Network Time Protocol (NTP) is used to synchronize a computer client or server to another server known as a reference time source.

Important! Configuring your IGEL RPI4 devices with an NTP Server is crucial as the NComputing RX420(IGEL) device does not have an onboard CMOS battery. Thus, upon powering off the device, you will lose the correct time and date.

The following steps detail how to configure the IGEL OS time and date using an IGEL UMS profile:

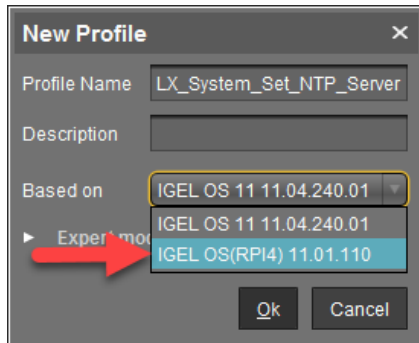
1. From the IGEL UMS console, you will need to make a new profile. Where this Profile is stored is the first question. If you are new to IGEL and followed the [IGEL Getting Started Guide](#), you would have created a basic folder structure, as seen in the image below. If you a long-standing IGEL customer, you would have built out a profile folder structure of your own. At the end of the day, where you store the profile is up to you but please remember, some order is a good thing.

Right-click on the folder you wish to store the NTP profile and click the **New Profile** link.

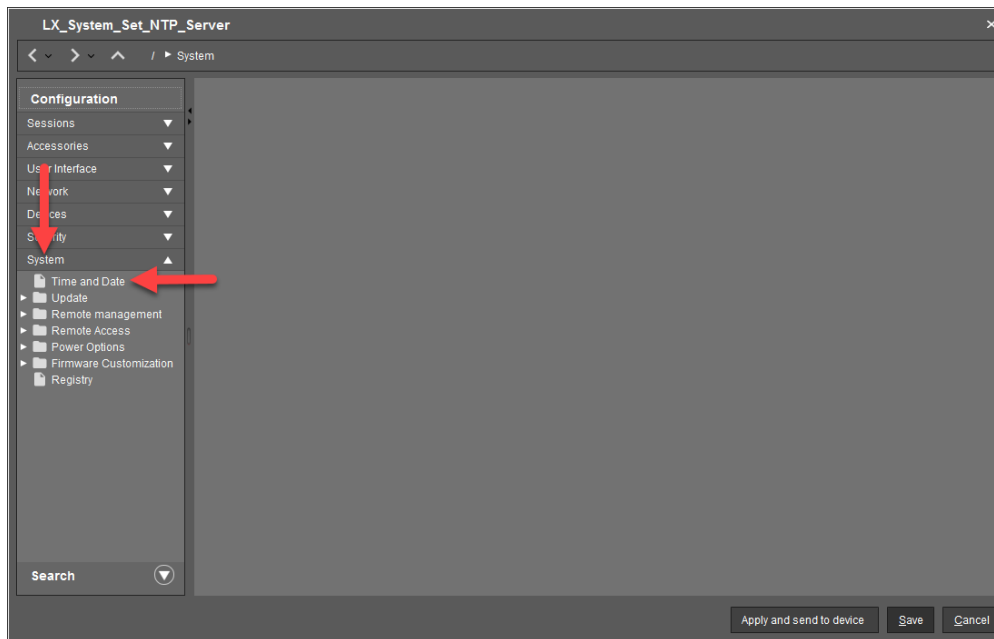


2. Enter a descriptive name in the **Profile Name** text box. Next, from the **Based on** combo box, select the firmware version of the device you will be applying this profile. For this guide, we are configuring the new IGEL OS RPI4. You will need to select the **IGEL OS(RPI4)11.01.110** entry.

Once finished, click the **Ok** button to continue.



3. The profile properties window opens, prompting you with the many possible configurations you can make with the IGEL UMS. To configure the NTP, click to expand the **System** node and then click on the **Time and Date** link.

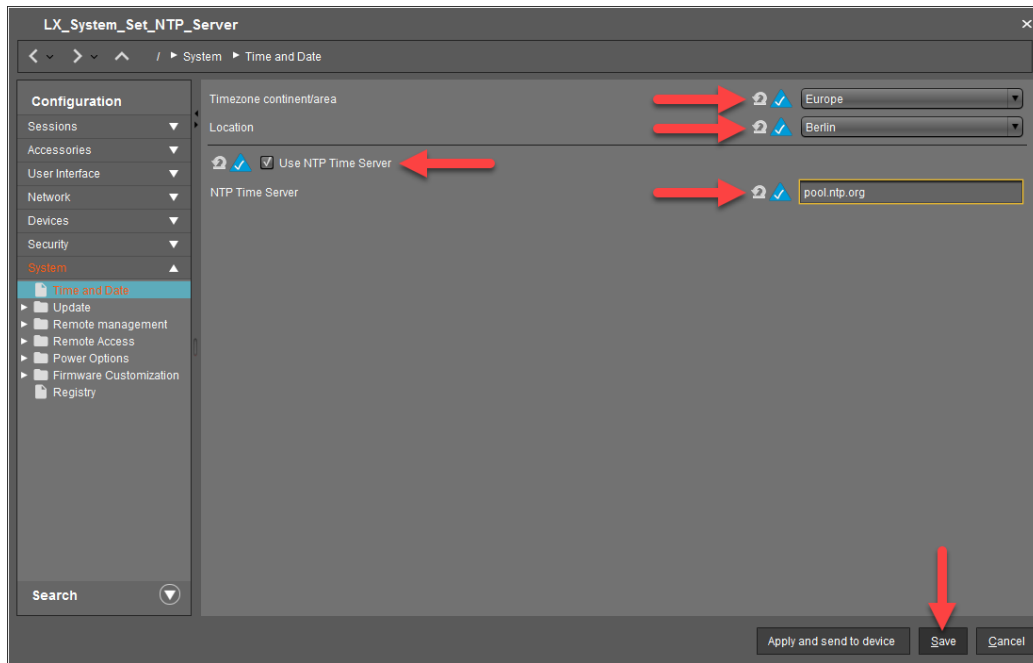


4. The **Time and Date** profile settings page allows you to define the time zone, location, and if you would like to use an NTP Time Server. Yes, we do!

Click on the yellow triangles for the **Timezone continent/area** and the **Location** to enable editing. Select the desired setting from the corresponding combo box.

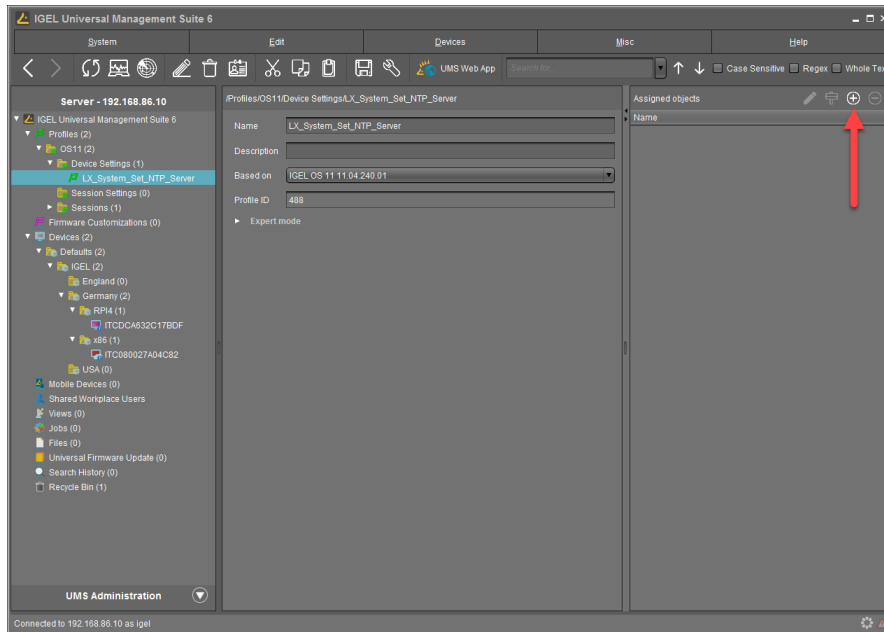
Click on the yellow triangle next to the **Use NTP Time Server** to enable editing and check the checkbox. Enable the corresponding text box and enter your desired NTP Server's DNS name, as shown below.

Once finished, click the **Save** button to continue.

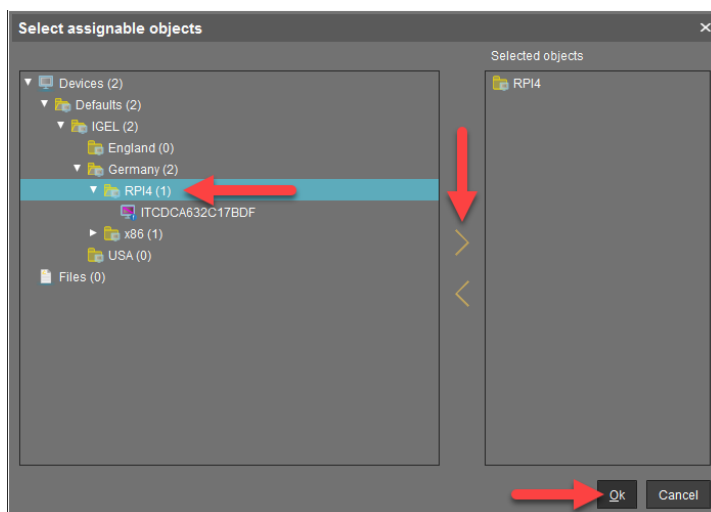


- The profile is created and is ready to be assigned to your new devices. Click the + icon located in the top right of the IGEL UMS.

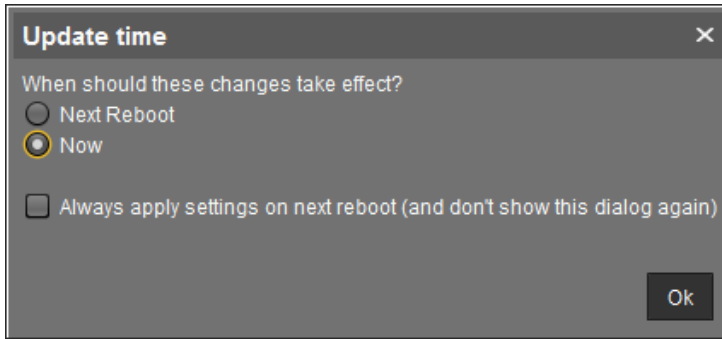
Note: IGEL UMS profiles can be assigned in numerous ways. For example, you can assign them one at a time or in bulk. You can assign a device to a profile folder or a specific profile to a particular device. You can assign based on the specific situation. It is truly flexible, and the sky is the limit. For this example, we are simply assigning our new profile to our devices after it is created to keep it simple.



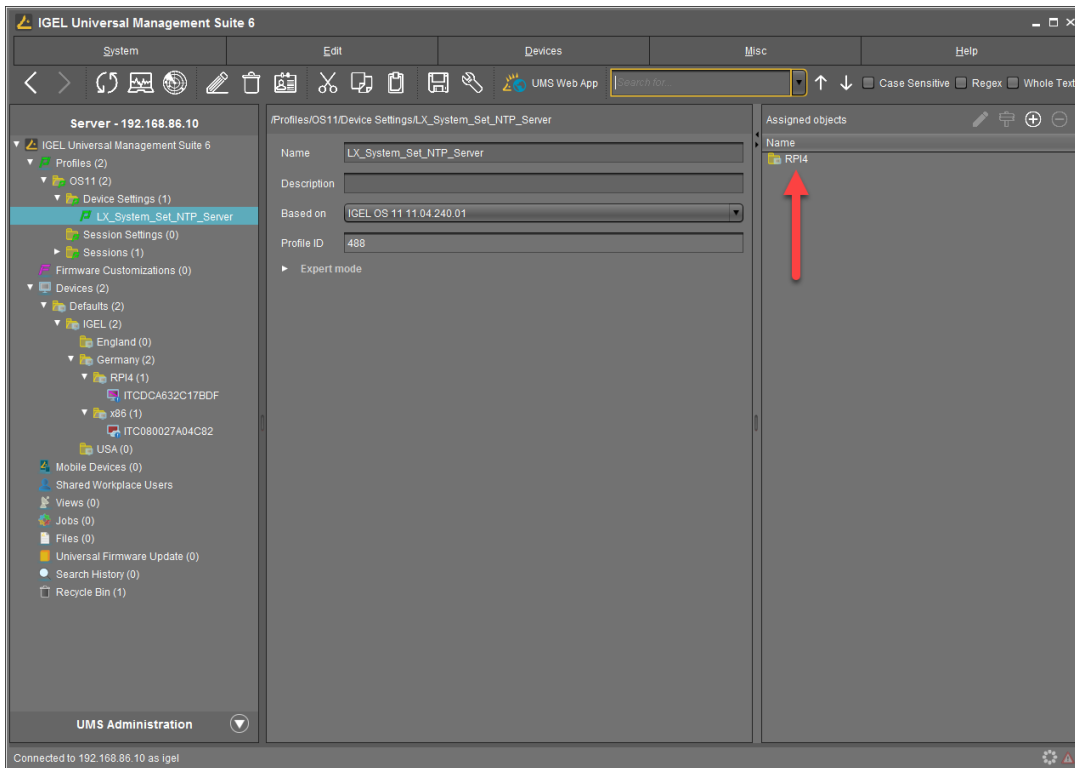
- The **Select assignable objects** window opens, prompting you to select the device folders or device you wish to assign to the selected profile. All you need to do is select the desired level of configuration, click the > button to move it to the **Selected objects** pane, and then click **Ok** to save the assignment.



7. You are prompted to specify at what time the new settings will take effect. For this example, click the **Now** radio button and click **Ok** to apply this change in real-time.



8. The new profile is created, saved, and assigned, as shown below. If you flip over to your NComputing RX420(IGEL), you might see the correct time, time zone, and date have been set. Life is good, or at least on time.

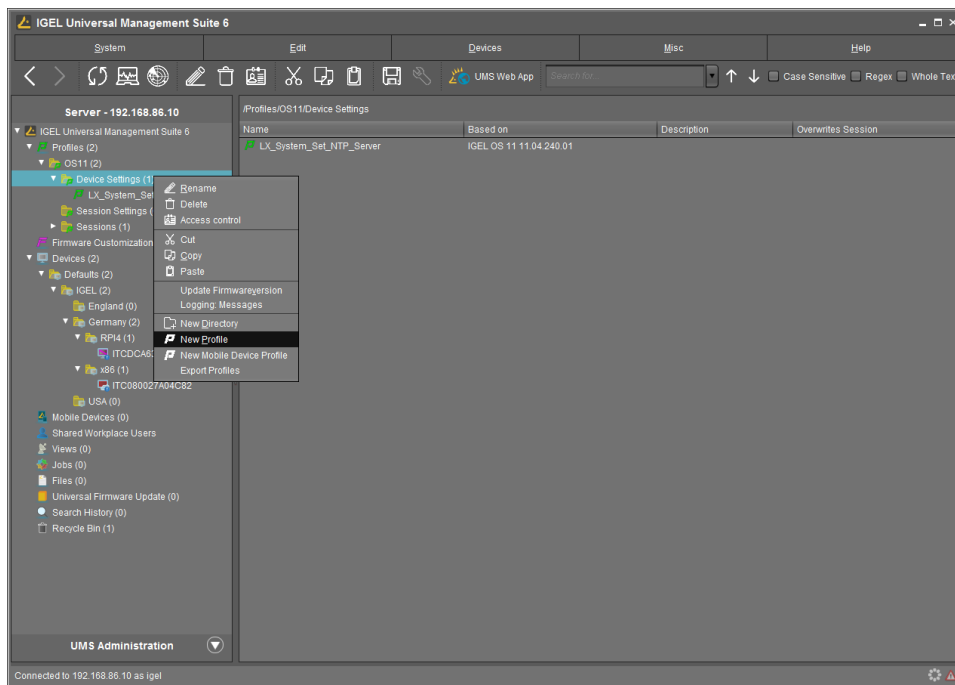


3. How to Configure Shadowing via UMS Profile

The next area you might want to configure is to add the ability to shadow or remotely view and control the NComputing RX420(IGEL) device. No problem, we can do that too.

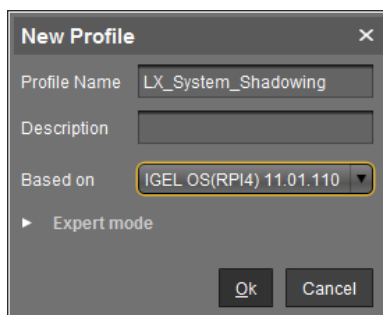
The following steps detail how to create a UMS profile to configure shadowing of an IGEL OS device.

1. From the left window of the UMS, expand the **Profiles** node and right-click on the desired folder, and click **New Profile**.



2. The **New Profile** window opens. Enter the name of the profile in the **Profile Name** text box. Make this title descriptive, so you and others understand its purpose. Next, don't forget to select the correct firmware version from the **Based on** combo box.

Click the **Ok** button to continue.



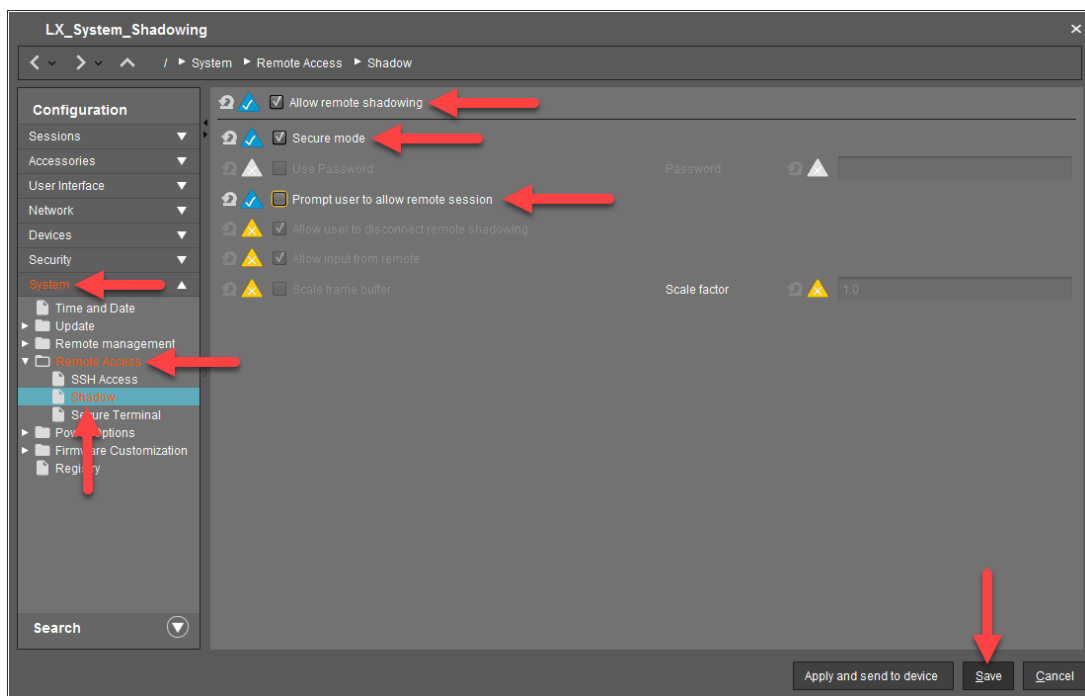
- You are brought to the profile settings windows screen. Click to expand the **System** > **Remote Access** nodes and click to open the **Shadow** configuration page.

The **Shadow** profile properties window opens, displaying the many settings you have at your disposal. The first thing you need to do is enable shadowing. To do this, click the yellow triangle to the left of the **Allow remote shadowing** entry and click to check its corresponding checkbox.

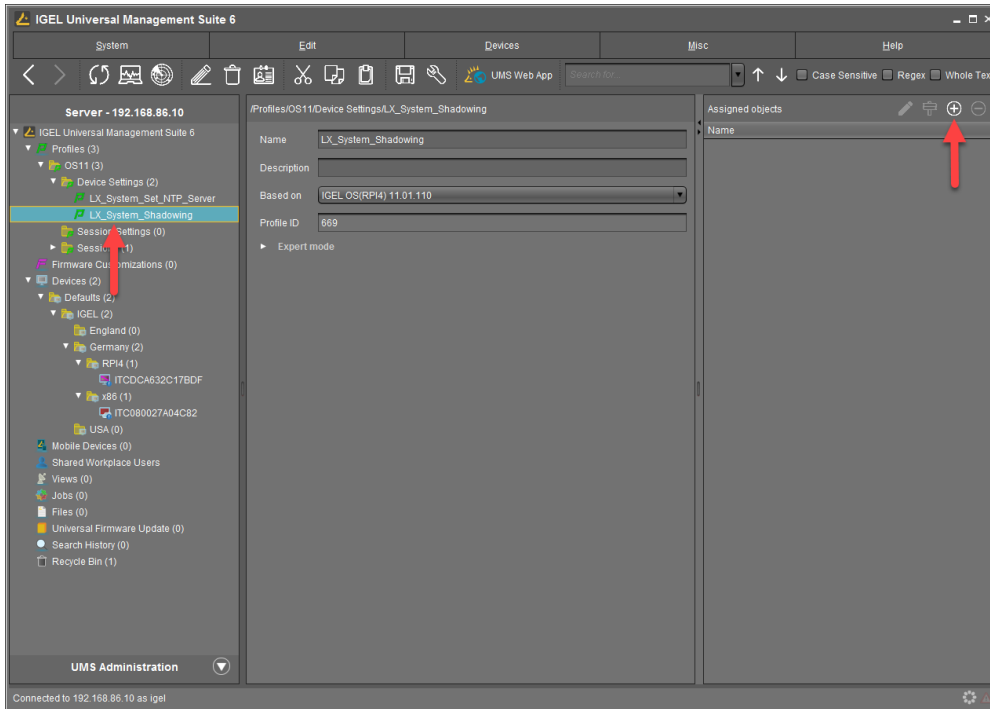
If you would like your remote session to be encrypted, click the yellow triangle, and check the **Secure mode** checkbox.

Next, for testing purposes, you might want to uncheck the **Prompt user to allow remote session** checkbox. This will enable you to verify shadowing is working without a user at the endpoint accepting the connect. Do not forget to re-enable this setting before using it on a company network since users want to get notified before getting shadowed, as it might be required by law.

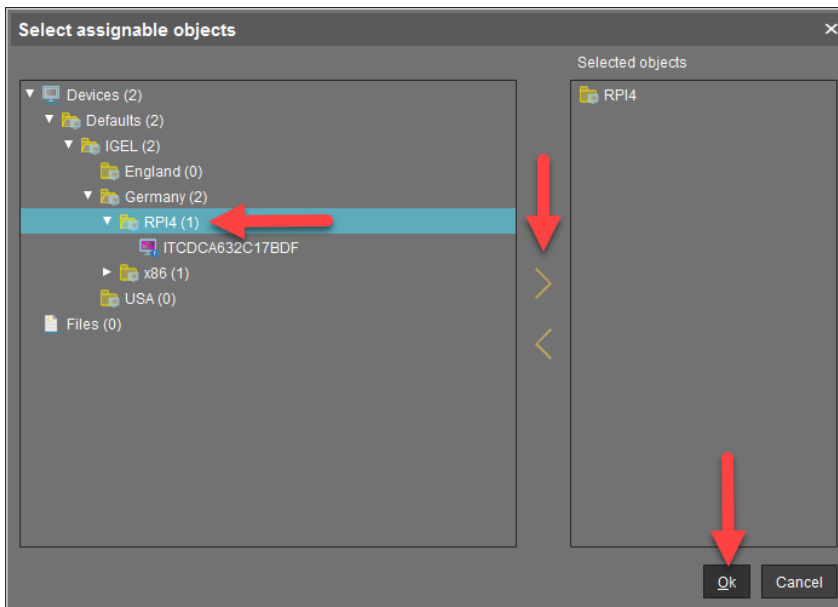
Once finished, click the **Save** button.



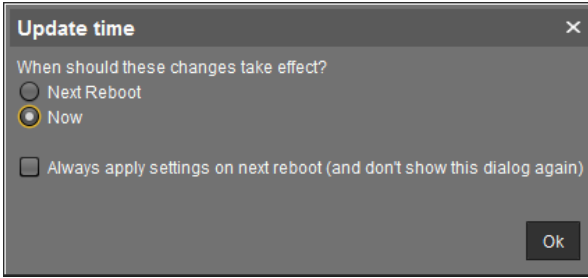
4. The shadowing profile is created, and you are ready to assign it to your devices. Click the + icon located in the top right of the UMS.



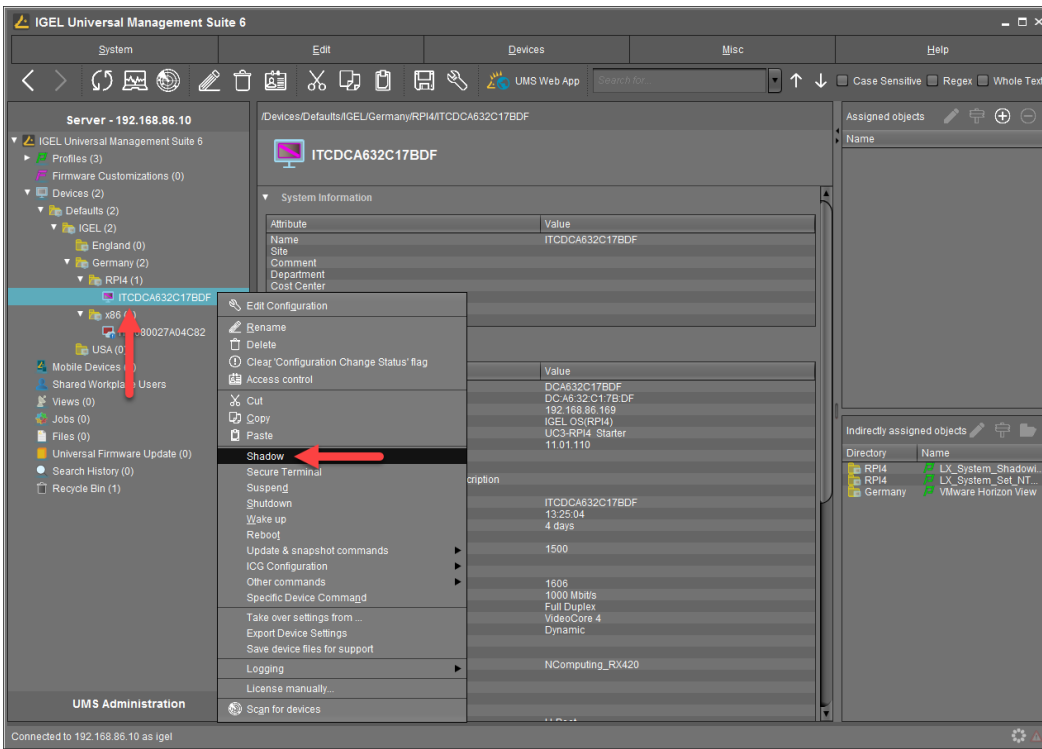
5. The **Select assignable objects** window opens, prompting you to select the device folders or device you wish to assign to the selected profile. Select the desired level of configuration, click the > button to move it to the **Selected objects** pane, and then click **Ok** to save the assignment.



- You are prompted to specify at what time the new settings will take effect. For this example, click the **Now** radio button and click **Ok** to apply this change in real-time.



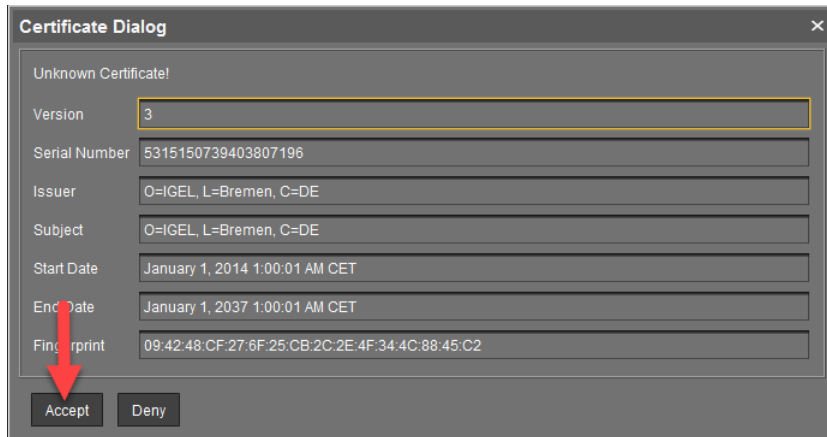
- You are ready to test! Right-click on the desired device and click the **Shadow** link.



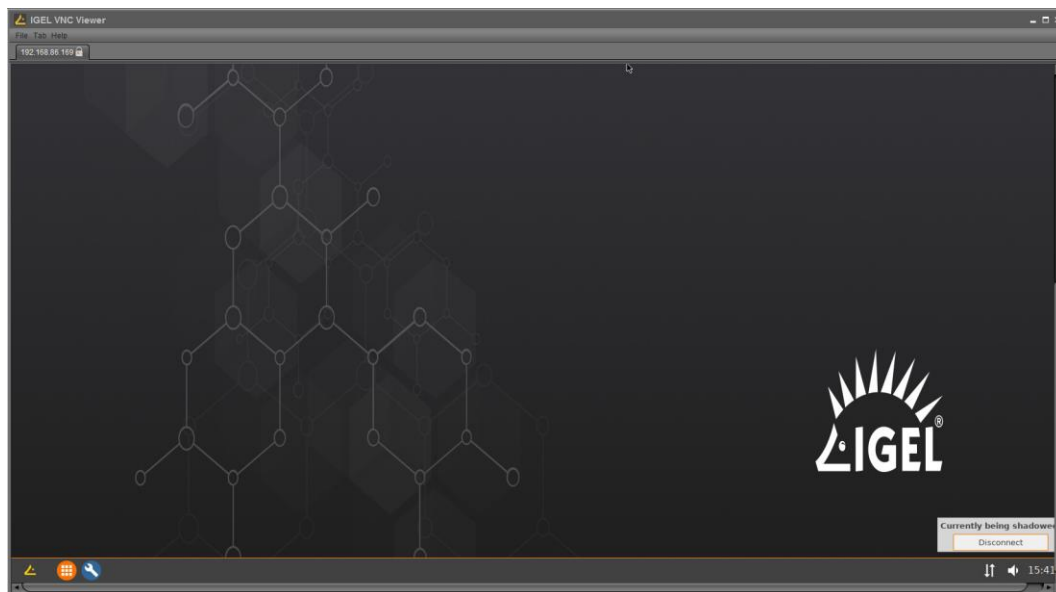
- The **Connect with** window opens. Based on our simple shadow profile, there is no need to enter any details. All you need to do is click the **Connect** button to start shadowing the device.



- If this is the first time, you are prompted to accept the certificate. As you have not configured a signed certificate of known origin, you must accept the default UMS certificate. You can trust us. Click the **Accept** button to start shadowing.



- Yippie! The **IGEL VNC Viewer** opens, and you should see the device's desktop. You are in like Flynn.



4. Licensing

By default, the IGEL OS(RPI4) for NComputing RX420(IGEL) is delivered with the 30-day Starter license. This license is a full Workspace Edition and Enterprise License Pack license that allows you to get up and running quickly. But it does NOT include the multimedia codec pack. This means your users will not get the best experience in the highly graphical and media-rich world we live in today.

IGEL also provides a 90-day evaluation license. This is a full license with both Workspace Edition and Enterprise License Pack but includes the multimedia codec pack. To get this license, all you need to do is configure it within the IGEL OS Welcome Wizard.

Of course, contact your local IGEL representative and buy a license. This is the best way to go. It lasts for the period of your license, and it comes with no limits, of course.

For this guide, we have documented using a retail license. This is a getting started guide, so we do not go through everything. Please refer to the IGEL Knowledge base for an explanation of all the different licensing options and configurations.

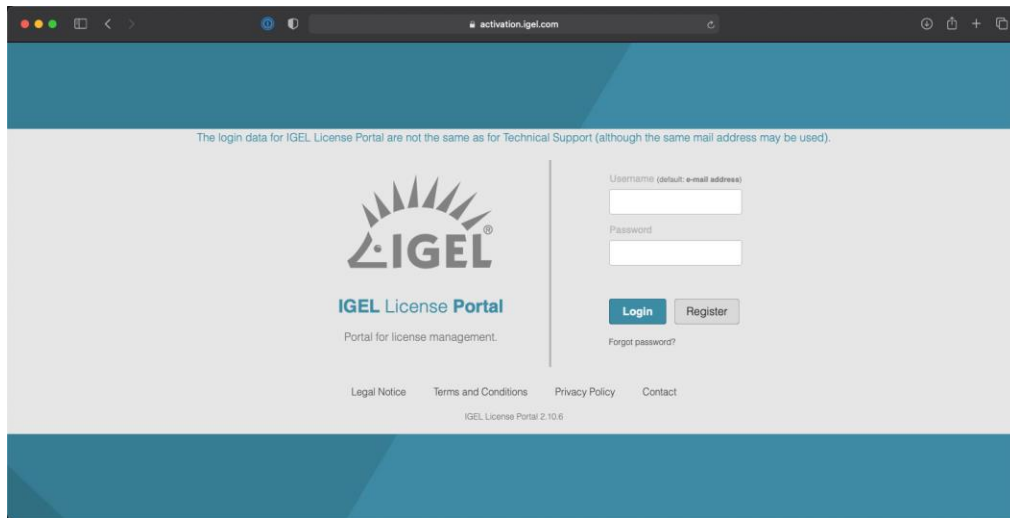
For more information on licensing, visit the following resources:

- **IGEL License Portal (ILP) - User Guide**
<https://kb.igel.com/licensesmore-igelos11/en/the-igel-license-portal-ilp-user-guide-10325018.html>
- **Set up Automatic License Deployment (ALD) with ALD Token**
<https://kb.igel.com/licensesmore-igelos11/en/set-up-automatic-license-deployment-ald-with-ald-t Ok en-26029121.html>

- Once you have received your IGEL OS Workspace Edition license (Enterprise Licensing Pack optional), you are ready to license the IGEL OS(RPI4) operating system.

Open your favorite browser and browse to <http://activation.igel.com>, and log in to the IGEL License Portal.

Note: if you do not already have an account, you will need to register.



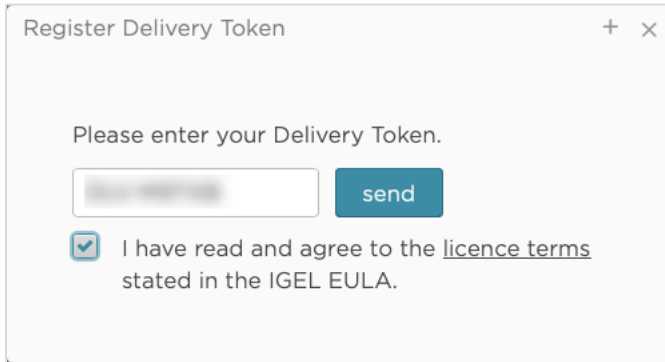
- You are brought to the IGEL License Portal Home page for your license packs, consumption, and upcoming expiring licenses.

Click the **Register Delivery Token** button to start the process of procuring a .lic file.

Manage	Product	Addons	Product Pack ID	Status	Expiration date	Volume	Comment
⊕	EMP		EMP-2AV40	NEW	NO END DATE YET	0/3	
⊕	WE		WE-NSREM	ACTIVATED	2022-02-20	1/3	

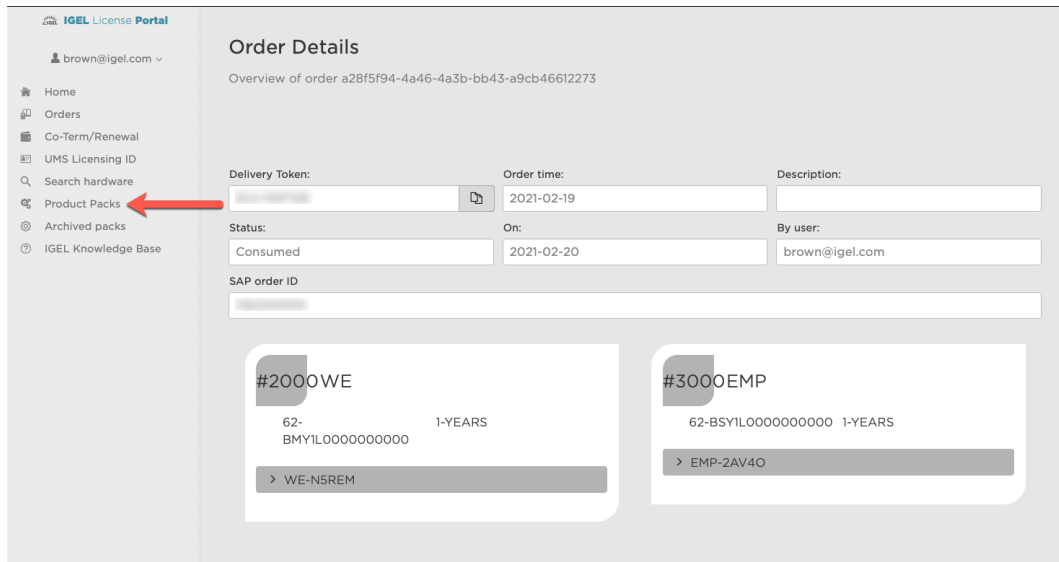
3. The **Register Delivery Token** window opens, prompting you to enter your Delivery Token. If you do not have a delivery token, you will need to contact IGEL Sales.

Please enter a valid Delivery Token in the text box and check the **I have read and agree to the license terms stated in the IGEL EULA** checkbox. Once completed, click the **Send** button.



The image shows a dialog box titled "Register Delivery Token" with a close button (X) in the top right corner. The main text reads "Please enter your Delivery Token." Below this is a text input field containing a blurred token and a blue "send" button. At the bottom, there is a checked checkbox followed by the text "I have read and agree to the [licence terms](#) stated in the IGEL EULA."

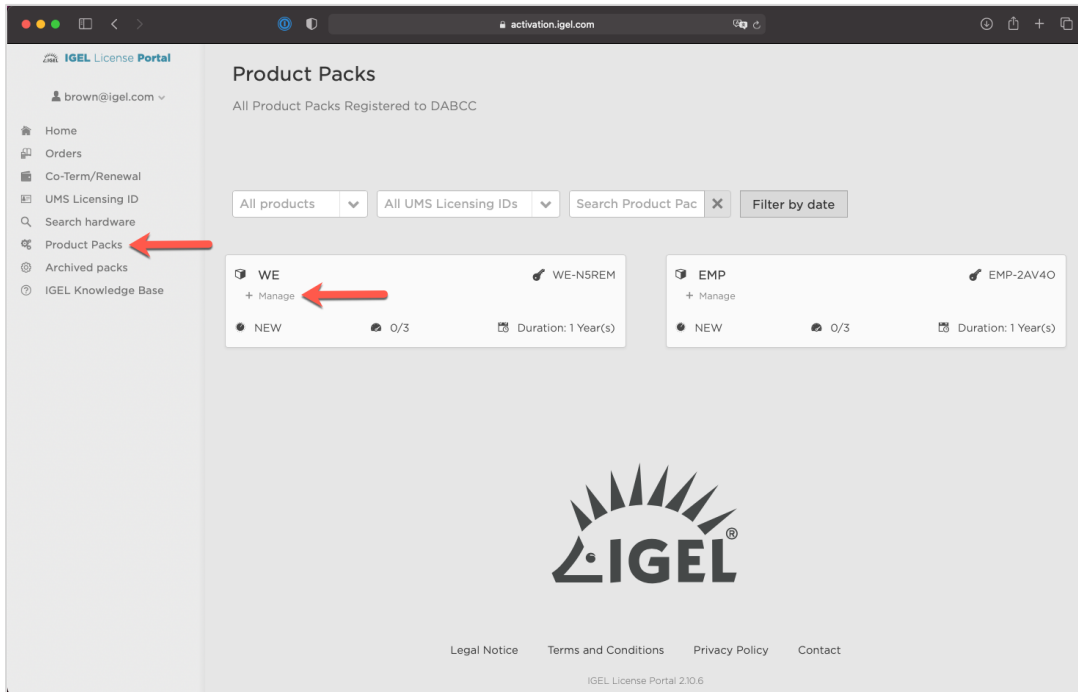
4. Your Delivery Token is activated, and you are brought to the Order Details page. Click the **Product Packs** link in the left menu.



The image displays the "IGEL License Portal" interface. On the left is a navigation menu with items: Home, Orders, Co-Term/Renewal, UMS Licensing ID, Search hardware, Product Packs (highlighted with a red arrow), Archived packs, and IGEL Knowledge Base. The main content area is titled "Order Details" and shows an overview of order a28f5f94-4a46-4a3b-bb43-a9cb46612273. It contains several input fields: Delivery Token (blurred), Order time (2021-02-19), Description (empty), Status (Consumed), On (2021-02-20), and By user (brown@igel.com). Below these is a field for SAP order ID. At the bottom, there are two product pack cards: "#2000WE" with details "62-BMY1L0000000000 1-YEARS" and a link "> WE-NSREM"; and "#3000EMP" with details "62-BSY1L0000000000 1-YEARS" and a link "> EMP-2AV40".

5. The **Product Packs** page lists all the IGEL products you have registered. You will see all the new products you just licensed. You will see a WE pack (for Workspace Edition) that consists of three licenses, and zero have been activated in the example below. You will also see three inactive EMP (Enterprise License Pack) licenses.

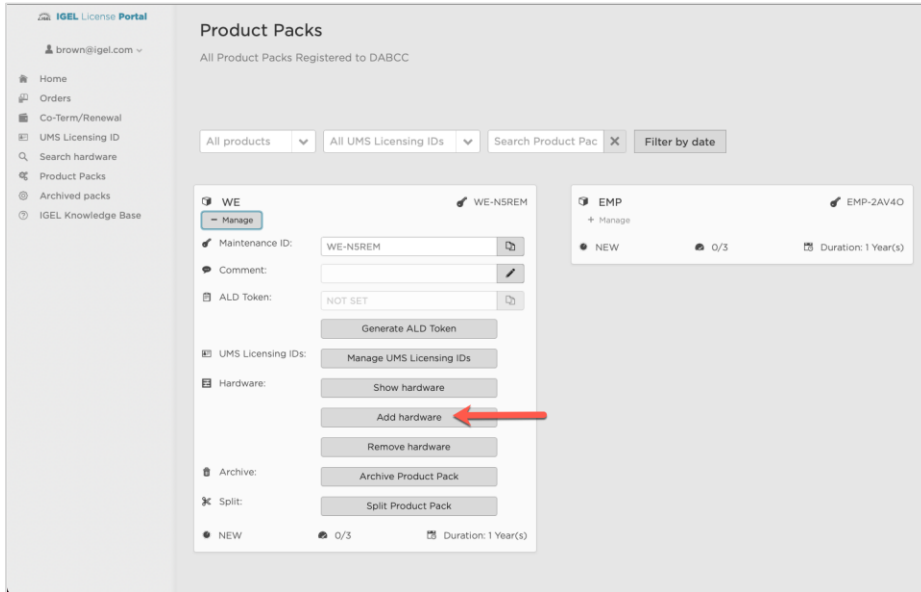
To license the IGEL RPI4 for use, you first need to add a Workspace Edition license. Click the **Manage** link located in the **WE** box.



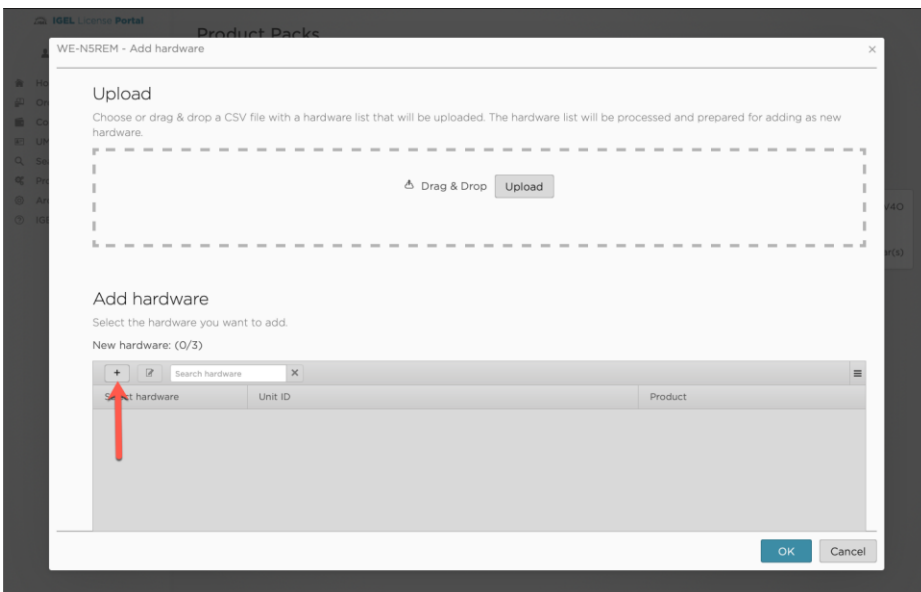
- The Workspace Edition box opens, and you are presented with more items to view and configure. Though, we are concerned with only one.

To assign a license to a device, you will need to set it to the MAC address(es) of the IGEL RPI4(s) you wish to license.

Click the **Add Hardware** button.

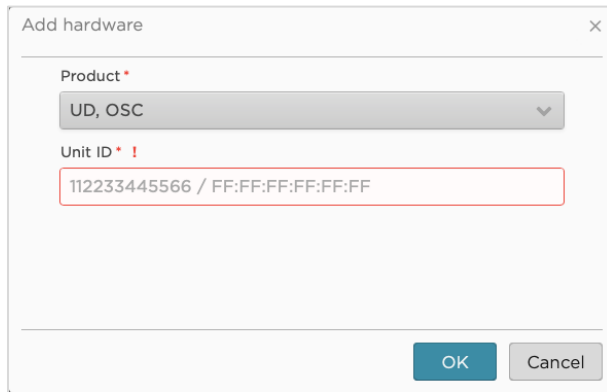


- There are a few ways you can add Mac addresses to the IGEL License Portal. You can upload a CSV file or enter each manually. If you have many devices to license, uploading is for sure your best choice. Though, the purpose of this document we only have one, so adding one is not a big choir. Click the + icon to continue.



8. The **Add hardware** window opens, asking you to enter the Unit ID (or MAC address) of the device you wish to license.

The default option is to license a UD hardware device (which would be the same as an IGEL RPI4) or OSC (IGEL OS Creator). If you click to expand the list, you will see you can also choose UD Pocket from the list.

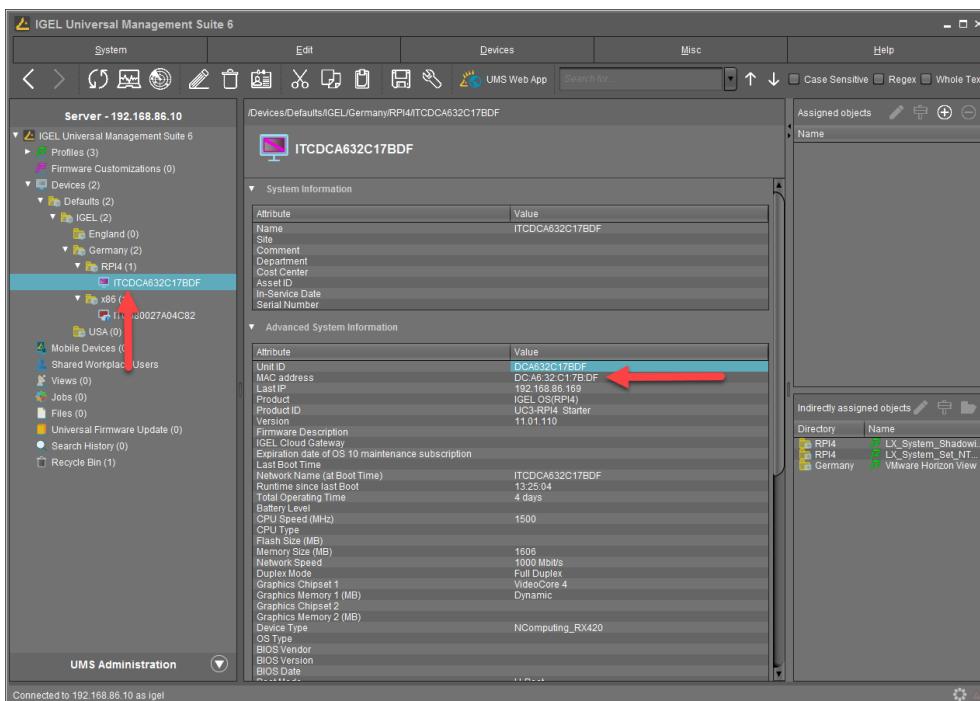


The 'Add hardware' dialog box has a title bar with a close button. Below the title bar, there is a 'Product' dropdown menu currently showing 'UD, OSC'. Below that is a 'Unit ID' field with a red border, containing the text '112233445566 / FF:FF:FF:FF:FF:FF'. At the bottom of the dialog are two buttons: 'OK' and 'Cancel'.

9. If you don't have the MAC address memorized, and who does? Or you don't have it written down anywhere. You will need to go back to the IGEL UMS and procure it, simply enough.

Click to select the IGEL RPI4 device from the left menu. The device's properties will be listed on the right, and you will be able to copy the MAC address from there.

Highlight the MAC address and hit the **CTRL C** key to add the MAC address to your computer's clipboard.

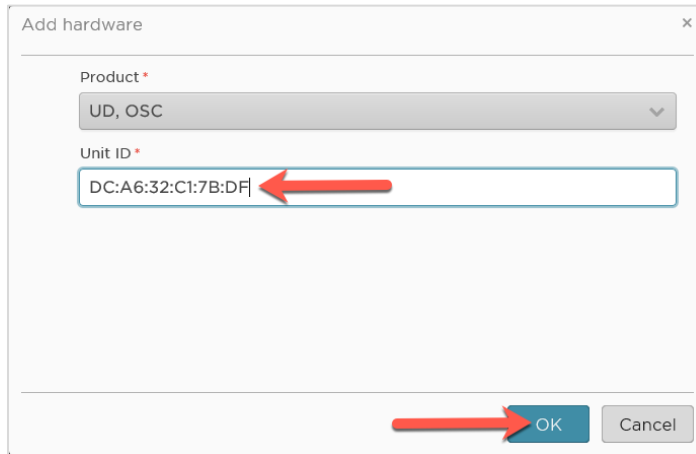


The screenshot shows the IGEL Universal Management Suite 6 interface. The left sidebar has a tree view with 'RPI4 (1)' selected under 'Germany (2)'. The main pane shows the properties for device 'ITCDCA632C17BDF'. A red arrow points to the 'MAC address' field, which contains 'DC:A6:32:C1:7B:DF'.

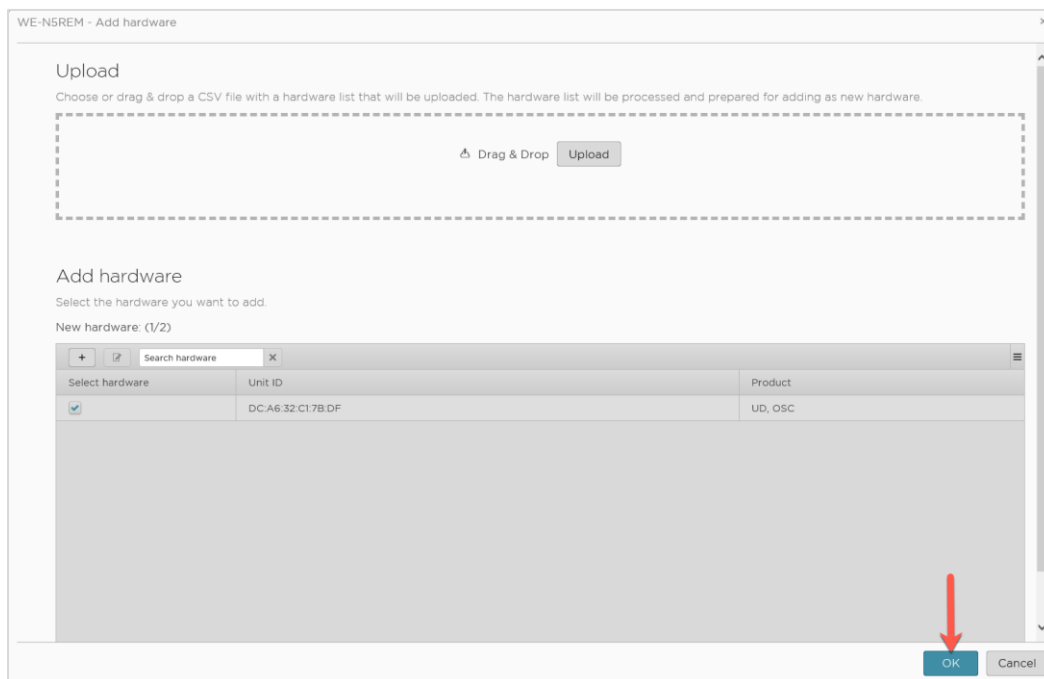
Attribute	Value
Name	ITCDCA632C17BDF
Site	
Comment	
Department	
Cost Center	
Asset ID	
In-Service Date	
Serial Number	

Attribute	Value
Unit ID	ITCDCA632C17BDF
MAC address	DC:A6:32:C1:7B:DF
Last IP	192.168.88.169
Product	IGEL OS(RPI4)
Product ID	UC3-RPI4_Starter
Version	11.01.110

10. Flip back to your browser, paste the MAC address in the **Unit ID** text box, and then click the **Ok** button to add your RX420(IGEL) hardware to the license pack.

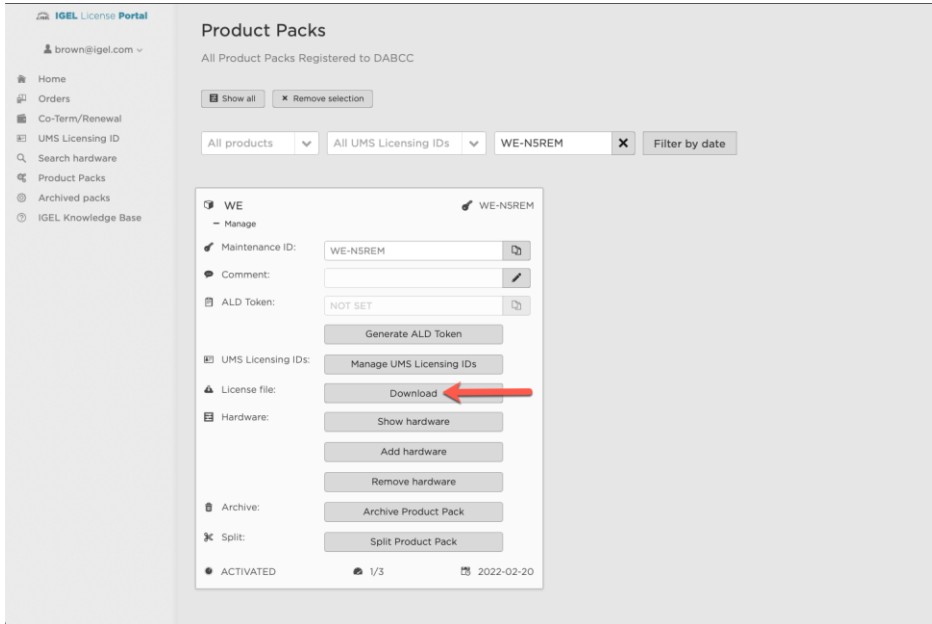


11. You will be brought back to the **Add hardware** form, and you will see your newly added device in the list of assigned hardware. If all looks good, click the **Ok** button to continue.

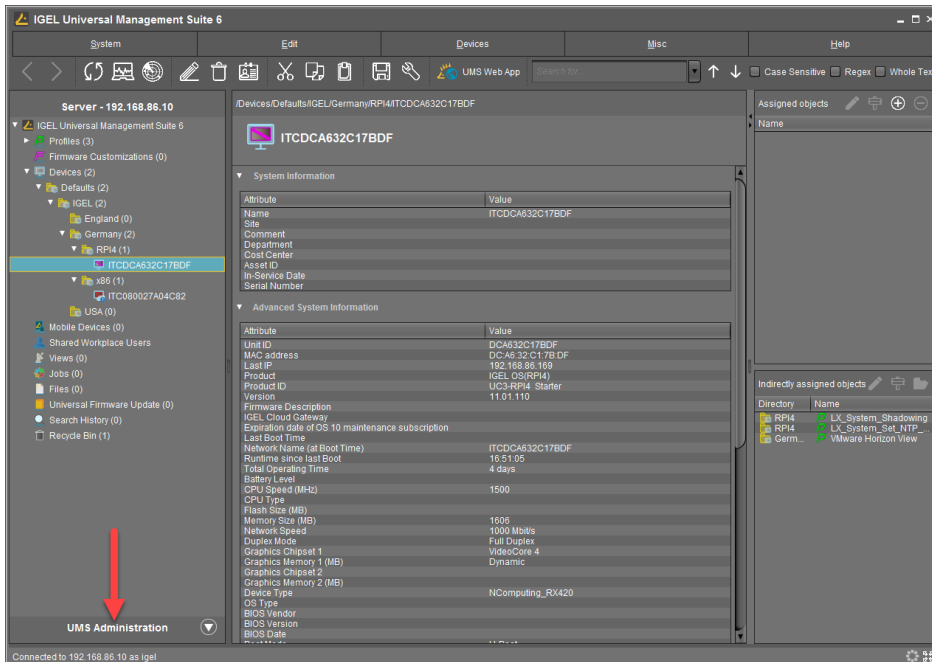


12. You are brought back to the **Products Packs** page and are ready to finally download the license file to the IGEL UMS and hence the device itself.

Click the **Download** button, and the .lic file will be downloaded to your local machine.

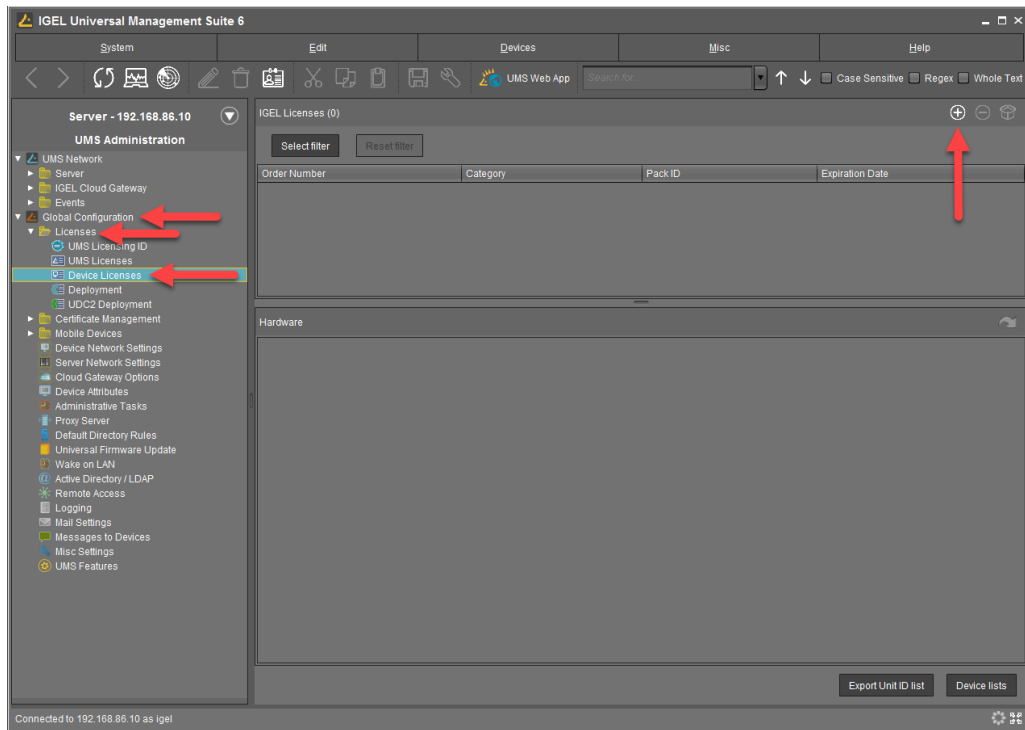


13. Flip back to the IGEL UMS and from the left menu, click to select the **UMS Administration** link at the bottom of the page.

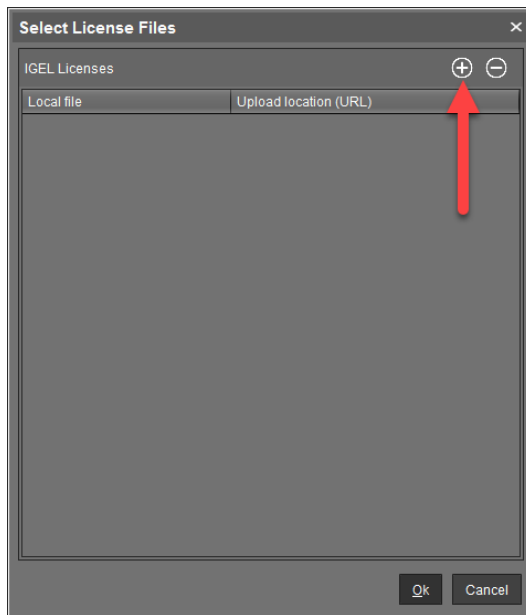


- From the left menu, click to expand the **Global Configuration** node, click to expand the **Licenses** node, and finally click the **Device Licenses** link.

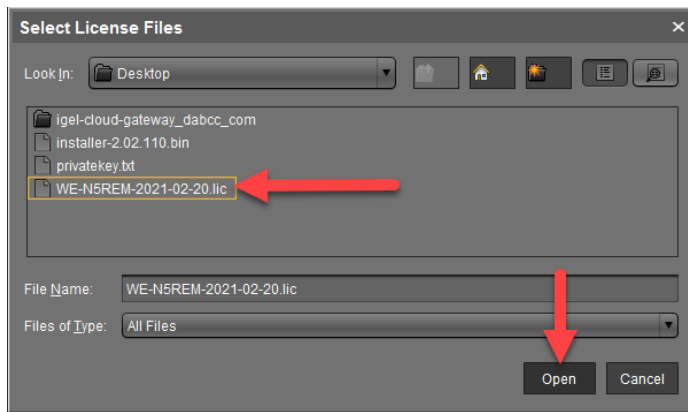
Click the + icon located on the top right of the UMS interface.



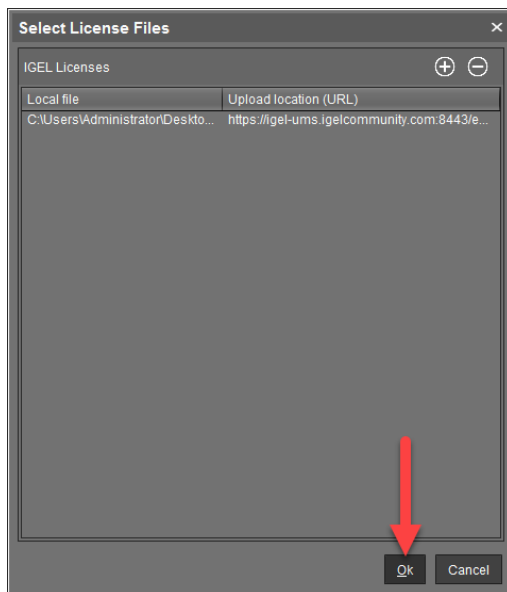
- The **Select License Files** window opens. Click the + icon on the top right to upload the license file you downloaded a few steps ago.



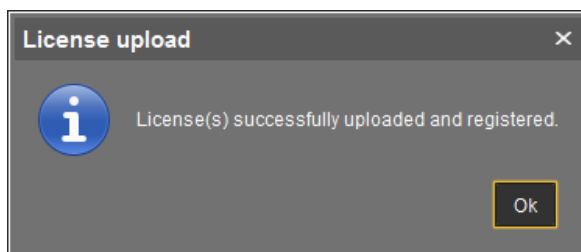
16. The **Select License Files** window opens, prompting you to select the .lic file for upload. Browse to the location you downloaded the .lic file, click to select it, and then click the **Open** button to continue.



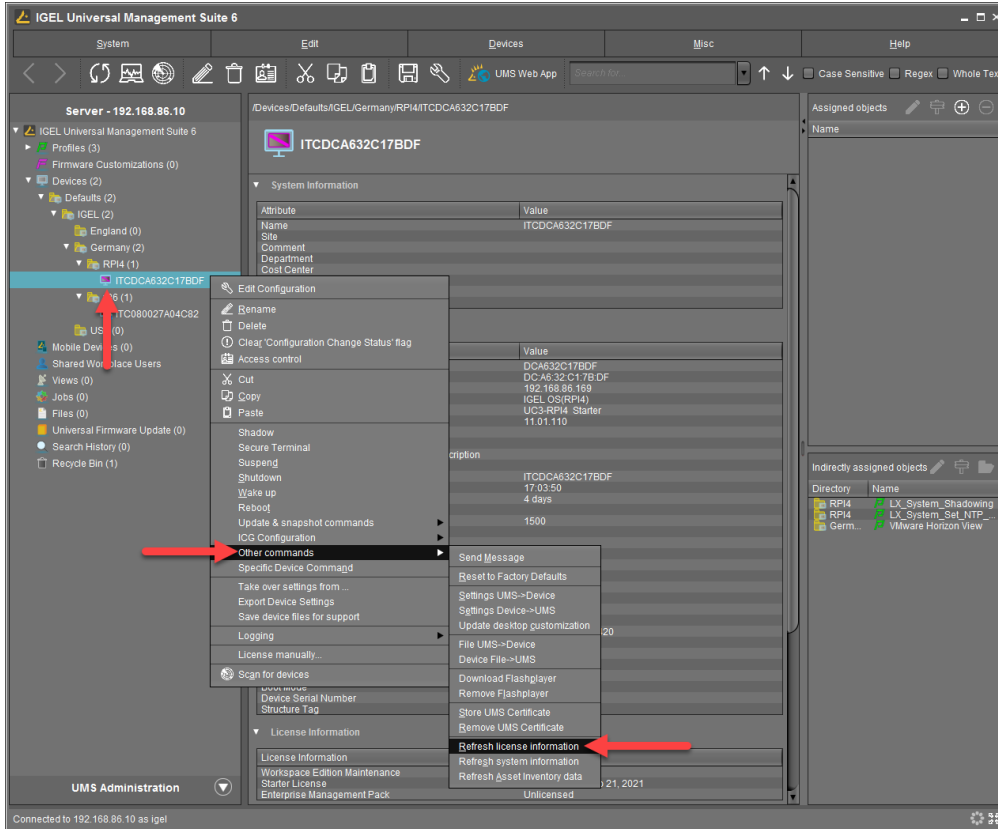
17. You are brought back to the **Select License Files** window and will notice the license file is now listed. Click the **Ok** button to upload it to the IGEL UMS.



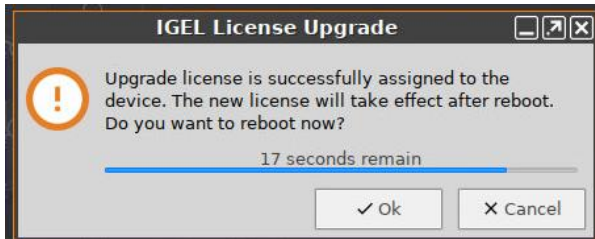
18. If all goes as you wish, you will be informed that the license file was successfully uploaded and ready to go. Oh, it is a good day. Click the **Ok** button to continue.



19. The desired RX420(IGEL) should receive the license information via the IGEL UMS quickly. Though, if you are the type that cannot wait, no worries, we have you covered. You can push it immediately by right-clicking on the device receiving the license and then clicking **Other commands > Refresh license information**.



20. If you look at the console of the affected RX420(IGEL), you should see the IGEL License Upgrade box, as shown below. If you don't receive it, you might need to reboot the device. Give a reboot a try before worrying too much.



21. Once the desired device receives its license, its properties icon on its UMS page should turn green.

You will also notice the device is now listed as licensed. Though you see it still needs an Enterprise Management Pack license, do not fret, we will do that behind the scenes.

The screenshot displays the IGEL Universal Management Suite 6 interface. The left sidebar shows a tree view of the server and its devices. The main pane shows the properties for the device ITCDCA632C17BDF. The license information section is highlighted with a red box, showing the following details:

License Information	
Workspace Edition Maintenance	Licensed until Feb 20, 2022
Enterprise Management Pack	Unlicensed

The interface also shows various system and hardware details for the device, including Unit ID, MAC address, Last IP, Product, Product ID, Version, Firmware Description, and various system metrics like CPU speed, memory, and network speed.

IGEL OS Sessions

1. Add Sessions to IGEL OS(RPI4) Device

Now it is time to deploy applications to your new NComputing RX420(IGEL) with IGEL OS(RPI4). This is done by creating IGEL UMS profiles.

In the following section, you will learn how to install and configure the subsequent sessions and recommended configurations:

- Chromium Web browser
- Chromium Web browser in kiosk mode
- Citrix access via the Chromium Web browser
- Citrix access via Citrix StoreFront
- Citrix access via Self-Service
- How to Turn Citrix Native USB Redirection Off
- How to enable Citrix HDX Realtime Webcam Redirection

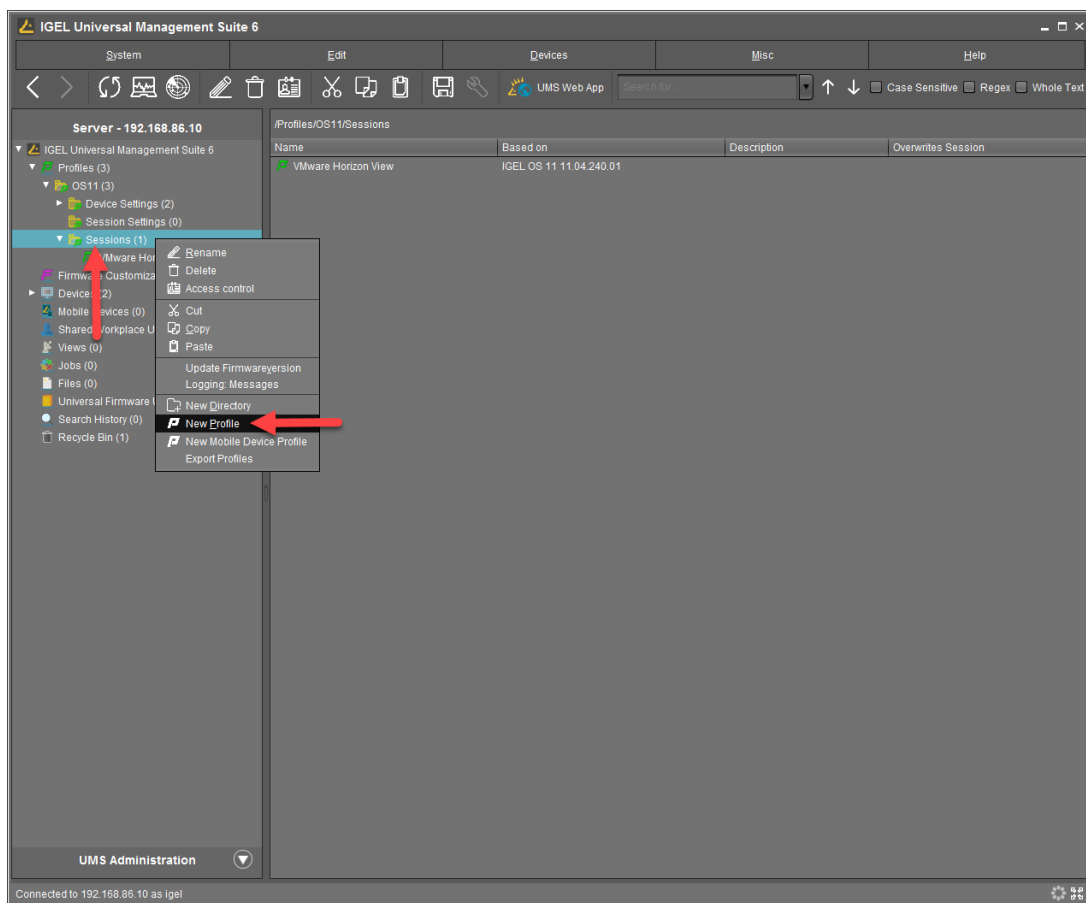
Let's get to it! No time to waste, and you are so close to the finish line.

2. How to Create a Chromium Session

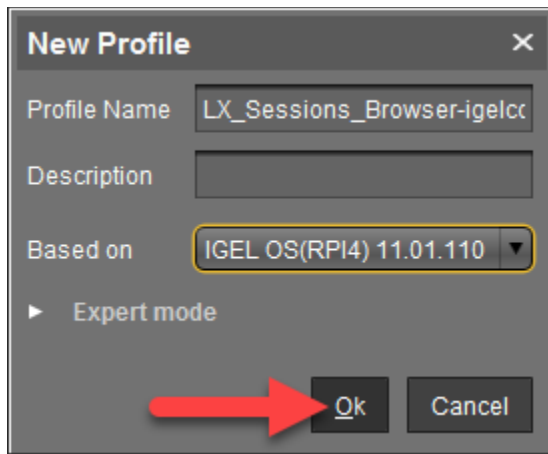
The IGEL OS(RPI4) for NComputing RX420(IGEL) ships with the Chromium Web browser. This will come in handy for typical web browsing, your corporate SaaS applications, and connecting to services such as Citrix.

The following section details how to deploy the Chromium Web browser to the IGEL OS(RPI4):

1. Open the IGEL UMS and expand the **Profile** node. Then right-click the **Sessions** folder and click the **New Profile** link.

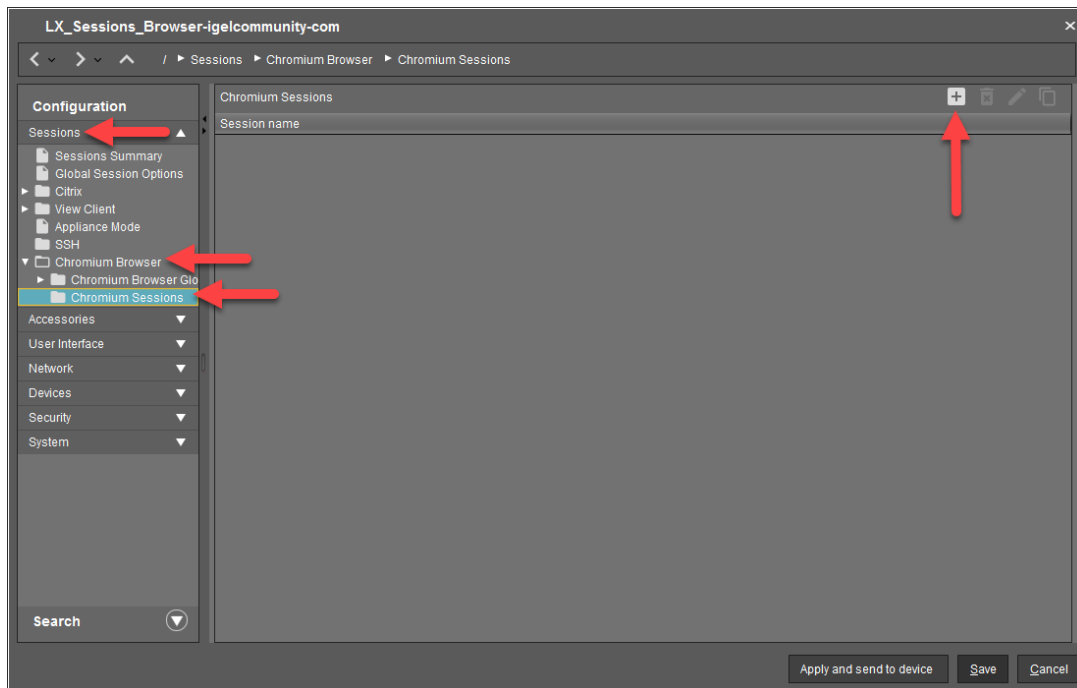


2. Enter a descriptive name for the profile in the **Profile Name** text box. Click to open the **Based On** combo box and click to select the **IGEL OS(RPI4)** entry. Once finished, click the **Ok** button to continue.



3. The profile settings window opens, and you are ready to add and configure the Chromium browser. From the left menu, click to expand the **Sessions** node, click to expand the **Chromium Browser** node, and select the **Chromium Sessions** item.

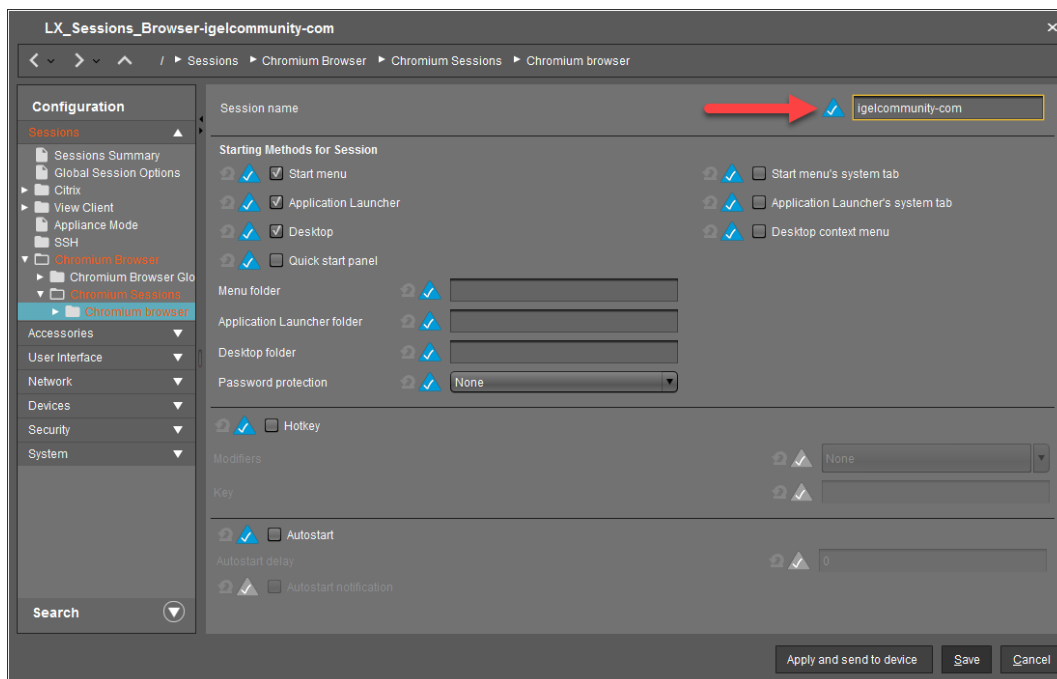
To create a Chromium Browser, click the + button on the top right of the page.



4. A new node named **Chromium browser** is added below the **Chromium Sessions** node. If you desired only a Chromium browser added to the IGEL OS desktop, you could click the **Save** button now, but you might want to make some modifications. The IGEL UMS has many configurations available.

By default, the Chromium browser is the default name assigned already, but you might want to change this to something else. In this example, we have changed it to `igelcommunity.com` as we will be preconfiguring the browser to use the `igelcommunity.com` webpage as the browser's home page. It is up to you if you would like to enter a custom name in the **Session name** text box. This name will appear under the Chromium icon on the IGEL OS desktop.

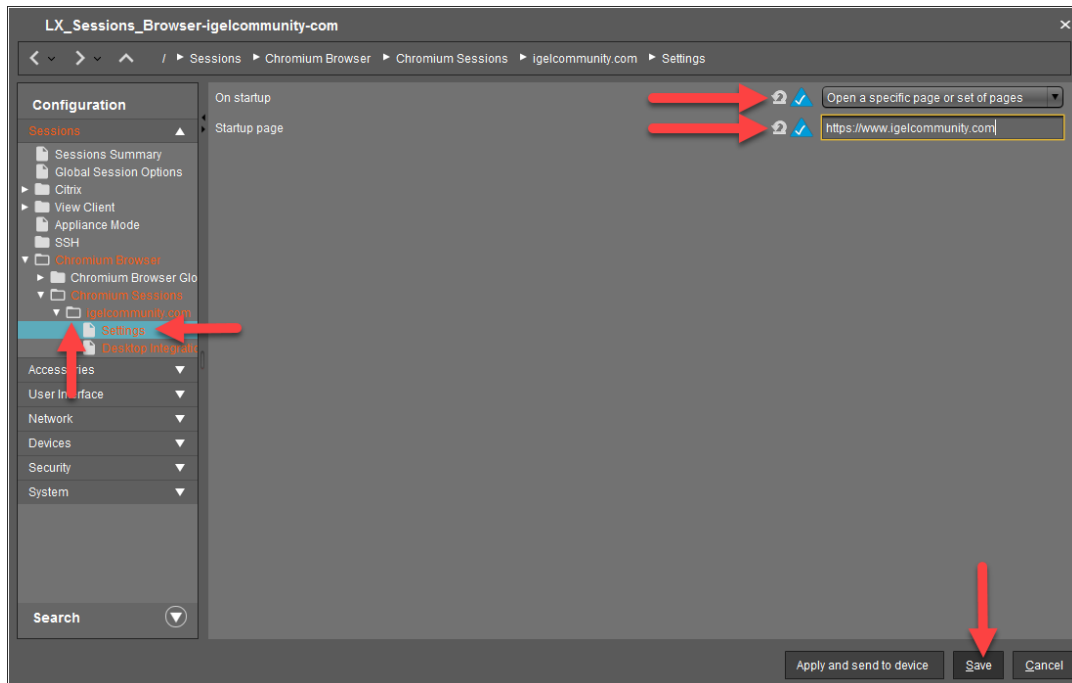
You can also define where the session will be displayed. For example, you can configure the system to place an icon on the user's desktop, the start menu, or maybe add it to the context menu displayed when the user right-clicks on the desktop. It is all up to you. Play around and have fun. As with everything IGEL does, the sky is the limit.



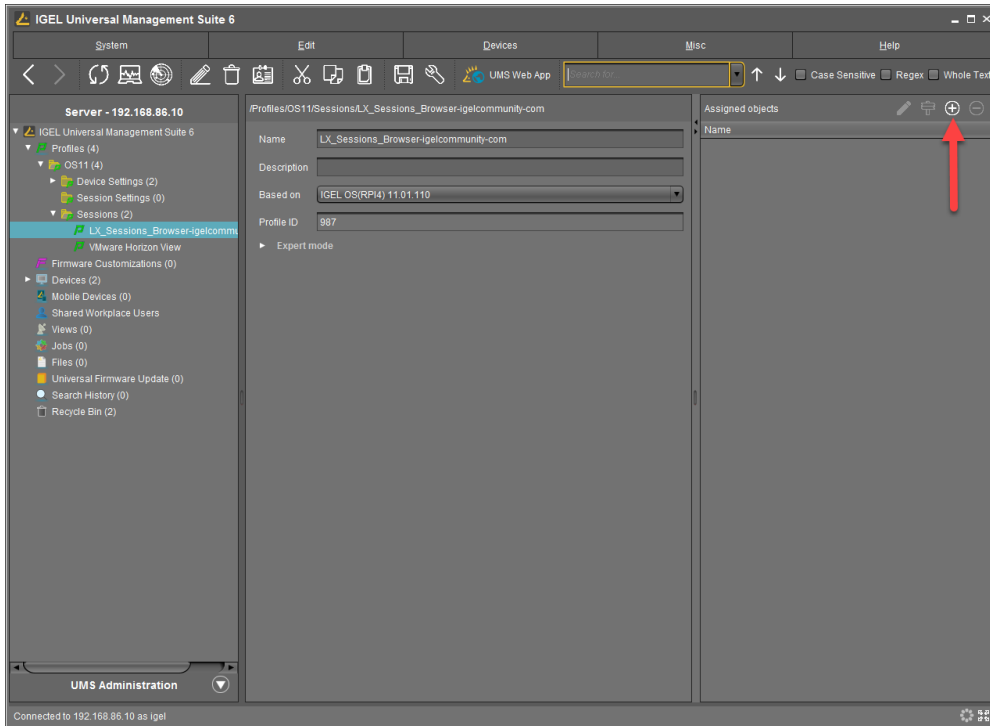
- The next step is to choose the startup page. This is the web page that will be loaded when the browser is started. To configure a startup web page, click to expand the node named with the session name you defined above and click to select the **Settings** node.

Click to open the **On startup** combo box and select **Open a specific page or set of pages** item. In the **Startup page** text box, enter the URL of the web page you wish to set as your home page/startup page.

Once finished, click the **Save** button. Your Chromium Browser is ready to be assigned, deployed, and used!



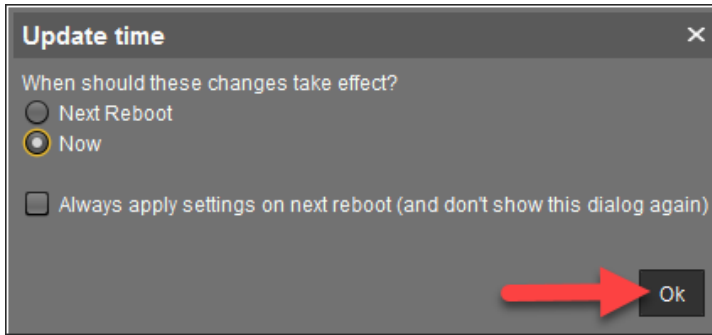
- You are brought back to the IGEL UMS. Click the + icon located on the top right of the screen.



- The **Select assignable objects** window opens. Please select the desired folders or clients and click the > button to move it to the **Selected objects** section. Once you have defined the objects to assign to the profile, you can click the **Ok** button to save it.



- You are prompted to specify at what time the new settings will take effect. For this example, click the **Now** radio button and click **Ok** to apply this change in real-time.



- The browser is configured, flip over to your NComputing RX420(IGEL) device, and you should see the Chromium icon.



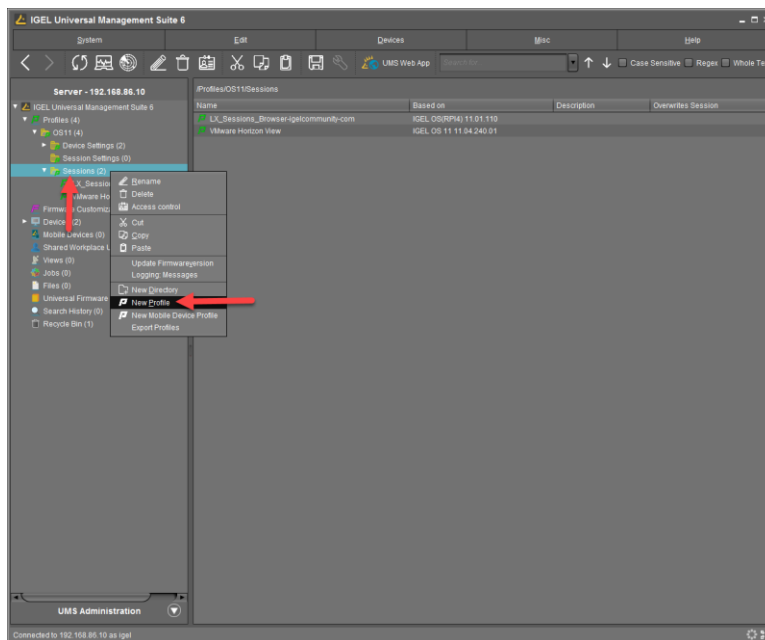
3. How to Create a Chromium Kiosk Session

The NComputing RX420(IGEL) with IGEL OS(RPI4) device works great in many use cases. For example, a check-in terminal, web kiosk, and even in-store displays for signage. That said, you might find you wish to configure the Chromium browser to perform as a locked-down browser in kiosk mode. No Problem, we got you covered.

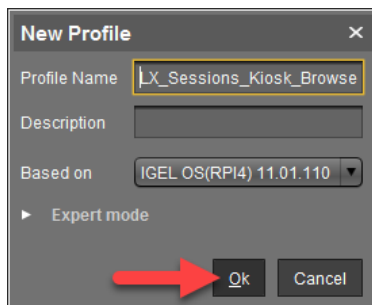
Learn more about **Chromium Browser Global** settings <https://kb.igel.com/igelos-11.05/en/chromium-browser-global-42011078.html>.

The following steps detail how to create a Chromium kiosk session:

1. From the IGEL UMS, expand the **Profiles** node, right-click on the **Sessions** folder, and click the **New Profile** link.

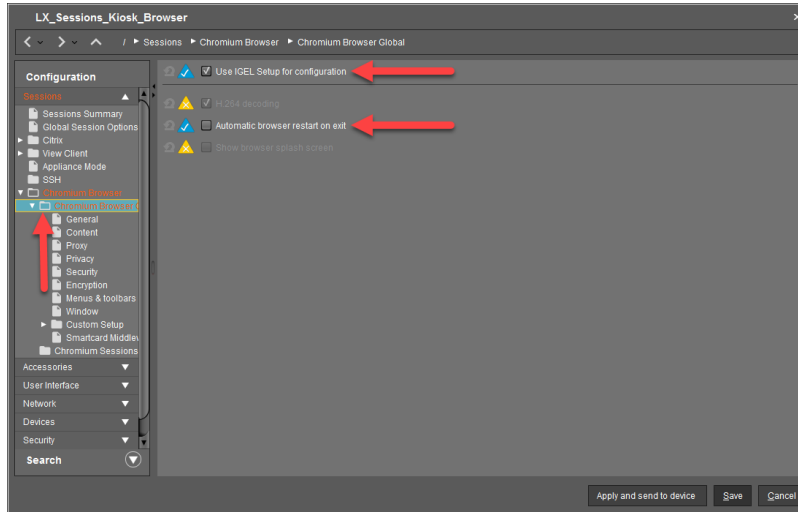


2. Enter a descriptive name for the profile in the **Profile Name** text box. Click to expand the **Based On** combo box and click to select the **IGEL OS(RPI4)** entry. Once finished, click the **Ok** button to continue.

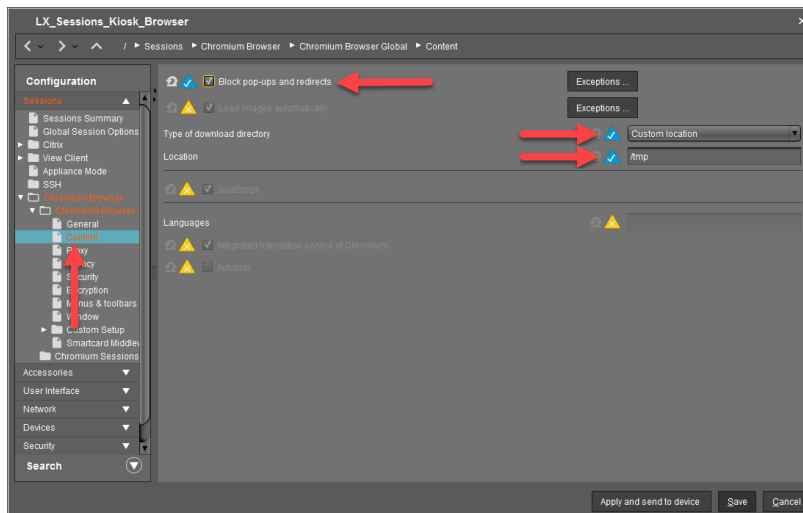


- The profiles properties window opens, and you are ready to do some configuring. Click to expand the **Sessions** node, click the **Chromium Browser** node, and click the **Chromium Browser Global** entry.

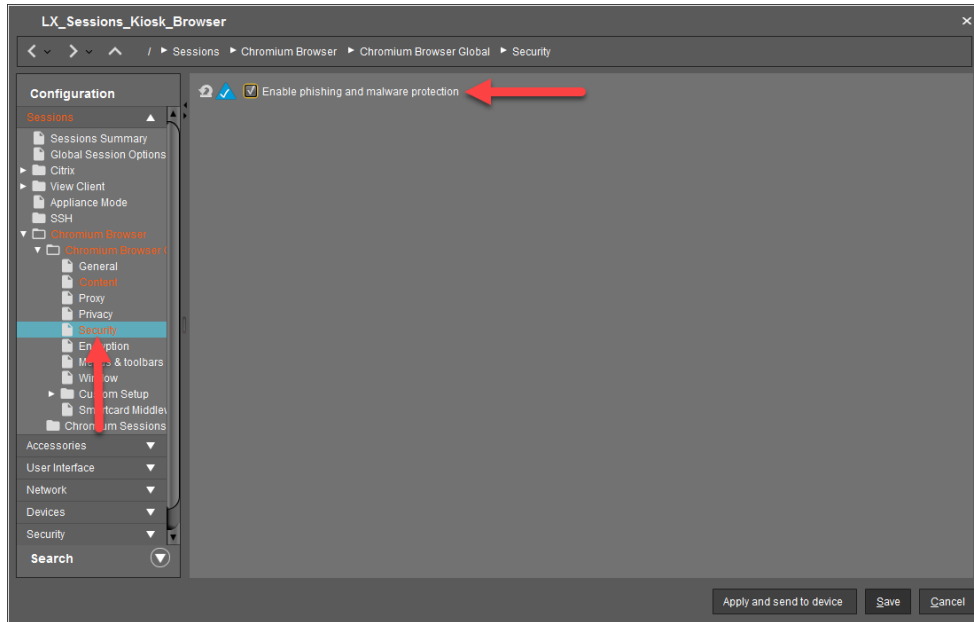
Click the yellow triangle to change it to blue (configurable) and then click the **Use IGEL Setup for configuration** checkbox. This allows you to configure the below settings. You can now configure a few items, such as H.264 decoding, the ability to restart the browser if it is closed and to show the browser splash screen when Chromium is started. Configure the settings as desired.



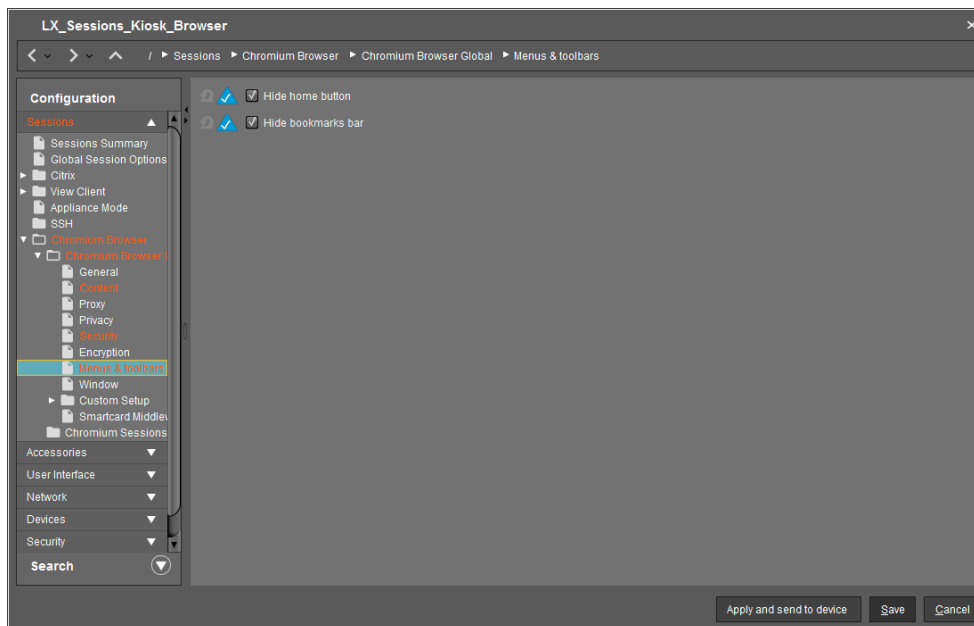
- Click the **Content** link located below the **Chromium Browser Global** folder. On this page, you can configure how content is treated. For example, you can block pop-ups and redirects, load or disable images automatically, configure the location of the Java library and browser language settings. In this case, you will want to click the yellow triangle to enable editing and then click to check the **Block pop-ups and redirects** and to set the download directory, as shown below.



5. Click to select the **Security** link under the **Chromium Browser Global** folder and click the yellow triangle to enable editing. Next, click to check the **Enable phishing and malware protection** checkbox. This is always a best practice and will help secure your environment from potential lurking bad guys on the dark web.

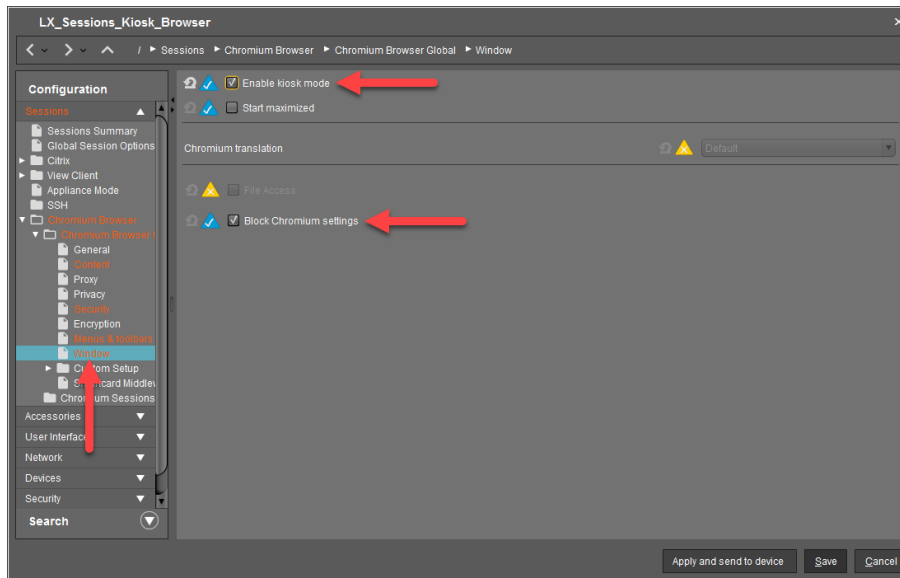


6. Click to select the **Menus & toolbars** link under the **Chromium Browser Global** folder. Here you can configure if the home button is viewable and if you wish to hide the bookmarks bar or not. Since we are creating a kiosk, it is best to hide both. Click the yellow triangle next to both settings and check the checkboxes, if so desired.



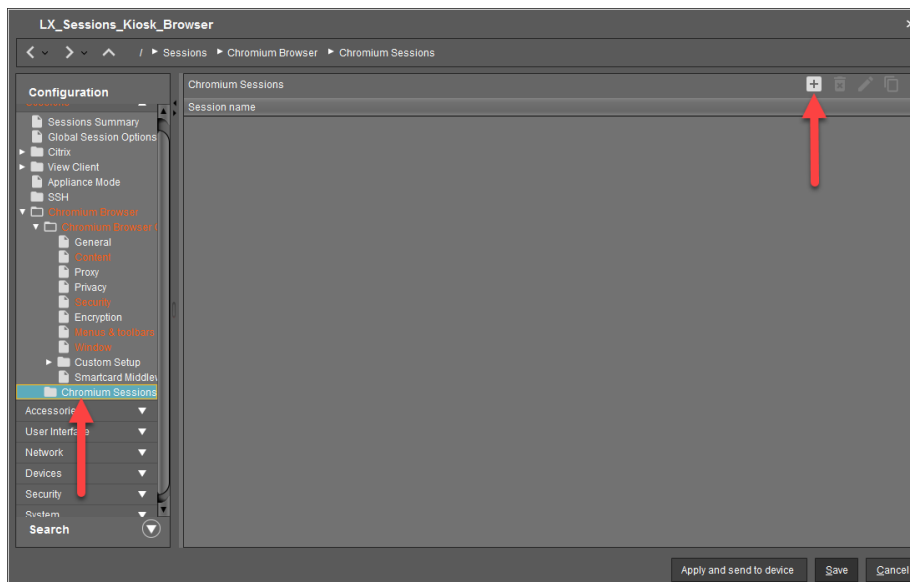
- Now you can configure how the browser opens. Next, click the **Window** link below the **Chromium Browser Global** folder. Here you can either configure Chromium in kiosk mode by checking the **Enable kiosk mode** checkbox or start the browser in full-screen mode by checking the **Start maximized** checkbox or startup the browser as a windowed app by unchecking both.

Next, click the **Block Chromium settings** checkbox to disable the Chromium menu accessibility.

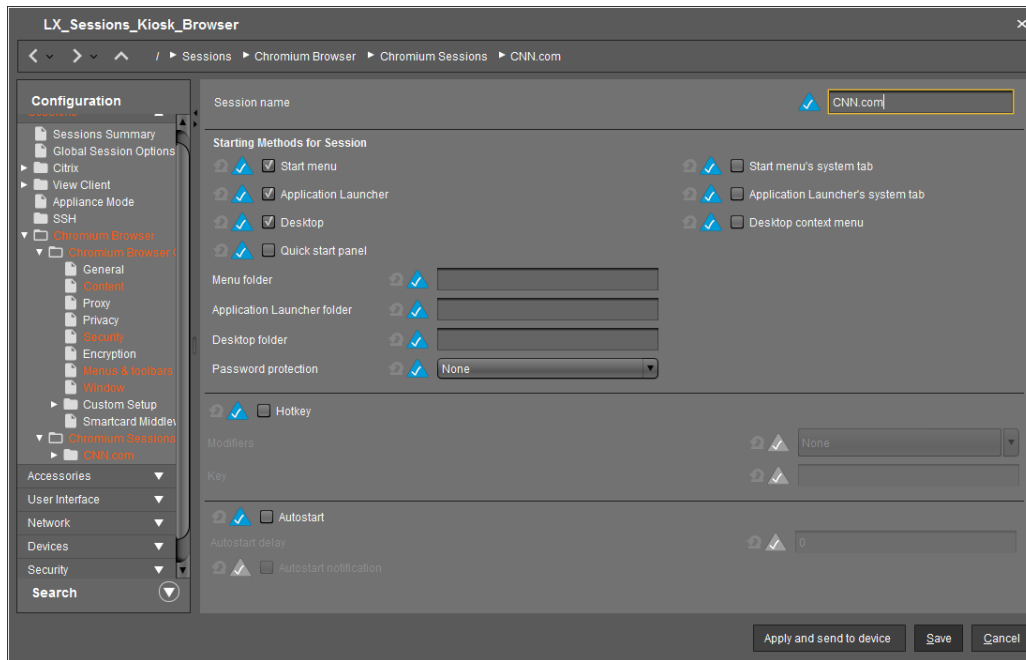


- You have successfully locked the browser down, and now you are ready to deploy the Chromium browser.

Click to select the **Chromium Sessions** link under the **Chromium Browser** folder in the left menu, and then click the **+** button on the top right of the IGEL UMS.

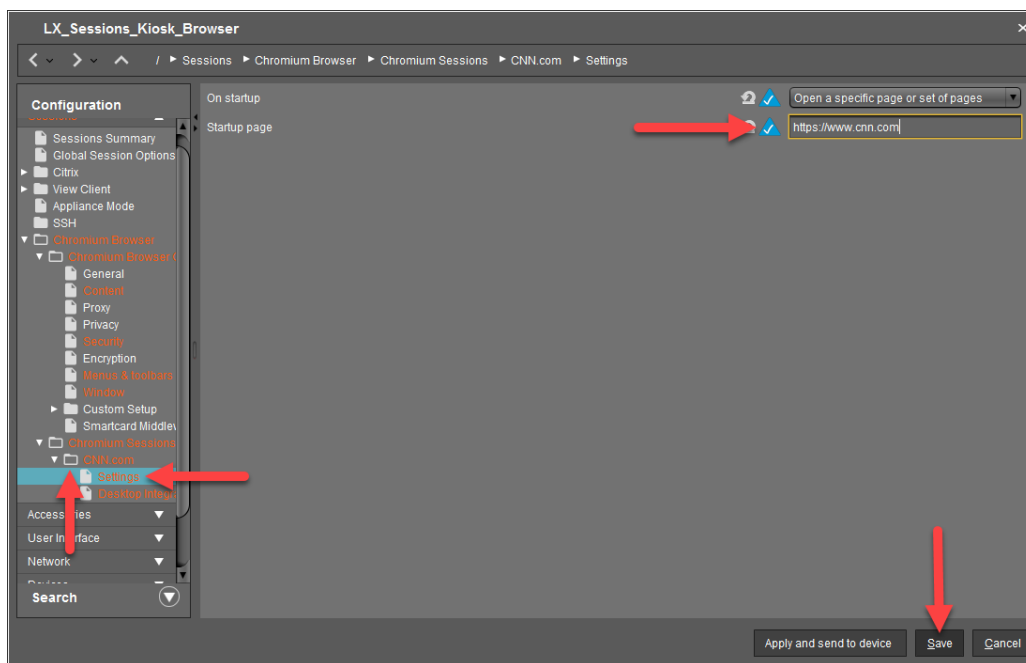


- Enter the name of the kiosk browser in the **Session name** text box.

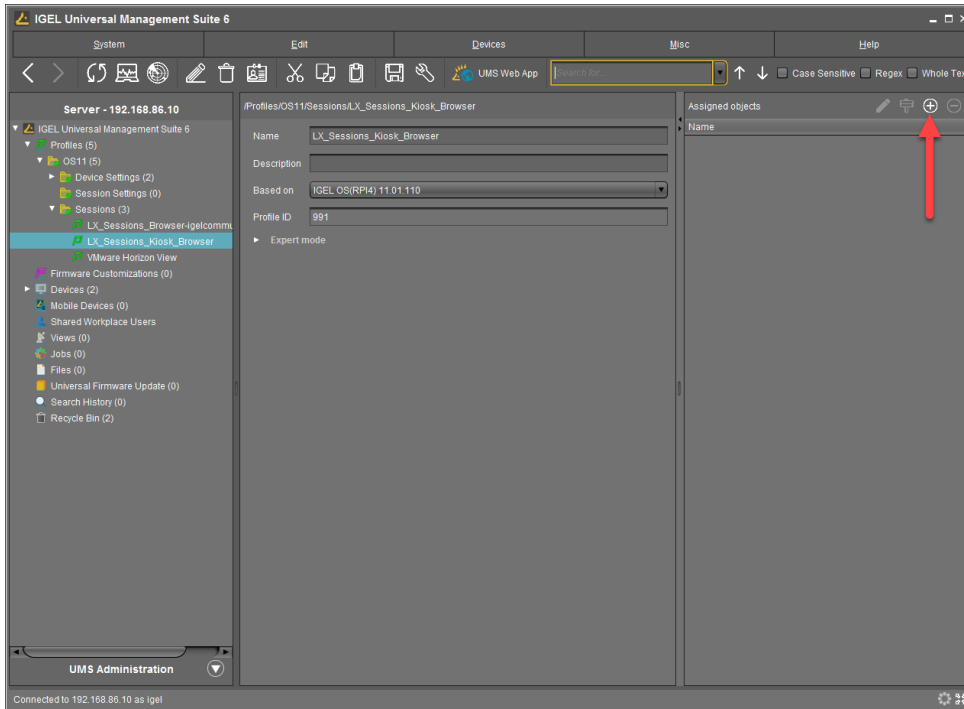


- Click to expand the newly created cnn.com link and click the **Settings** link. Click to open the **On startup** combo box and select **Open a specific page or set of pages** item. Enter the URL of the website to open upon starting the browser in the **Startup page** text box.

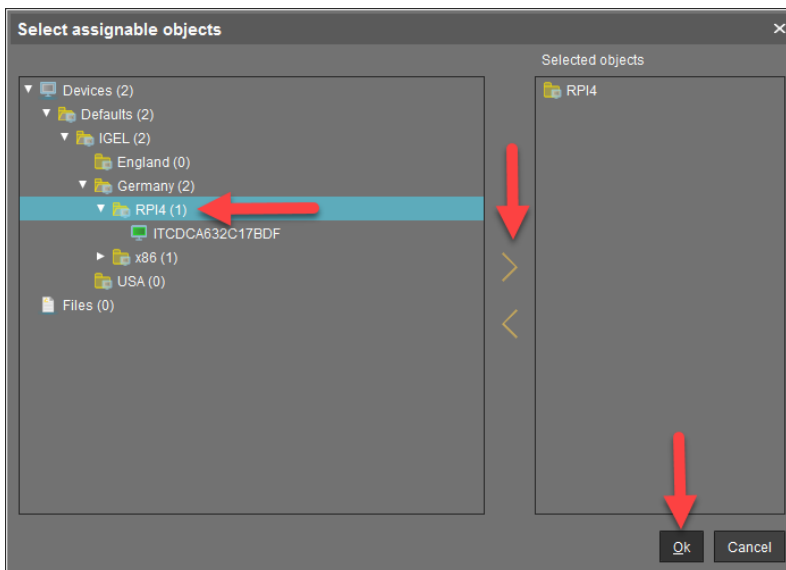
You are done. Click the **Save** button to save the profile.



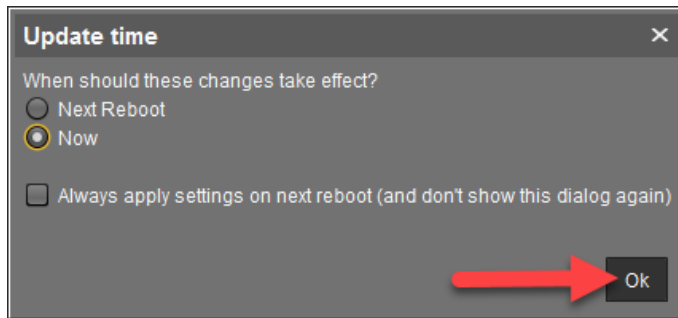
11. The Chromium kiosk profile is created, you are ready to assign it to your devices. Click the + button located in the top right of the UMS.



12. The **Select assignable objects** window opens. Select the desired folders or clients and click the > button to move it to the **Selected objects** section. Once you have defined the objects to assign to the profile, you can click the **Ok** button to save it.



13. You are prompted to specify at what time the new settings will take effect. For this example, click the **Now** radio button and click **Ok** to apply this change in real-time.



14. Flip over to the NComputing RX420(IGEL), and you should see the new kiosk browser icon has been added to the desktop.



4. How to Create Citrix Access via a Chromium Browser


Now that you have learned how to deploy the Chromium browser, it is time to use it to launch Citrix sessions. To do this, the same process you learned above is used. All you need to do is replace the URL to your Citrix StoreFront or Citrix ADC (NetScaler) address.

The following steps detail how to enable Citrix access via the Chromium browser on IGEL OS:

1. The first step is to procure the Certificate Authority Certificates that will be uploaded to the IGEL UMS. If you have trouble getting your Certificate Authority Certificates, please be aware that this process might be best achieved with your PKI / Certificate Management administrator.

Note: Root Certificate Authorities and/or SubCAs need to fit in BASE64 format.

It is imperative, once you procure the certificate, you will want to make sure it valid. The following is an image of how a certificate should look when you open it using a text editor.



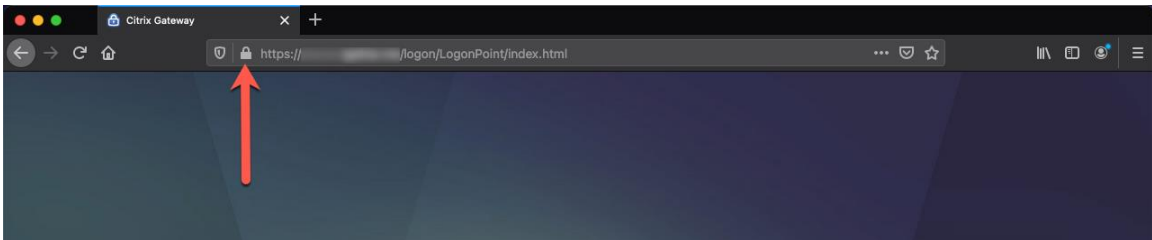
```
Root_demo.cer - Notepad
File Edit Format View Help
-----BEGIN CERTIFICATE-----
MIIDyzCCArOgAwIBAgIQf4LKK1+NyrNCar06gMLoQjANBgkqhkiG9w0BAQUFADB4
[Blurred Certificate Content]
VsgwxeR2RqwMC77uG6Fu
-----END CERTIFICATE-----
```

The following is an image of how a certificate should NOT look. If your certificate looks like this, get another as it will NOT work.

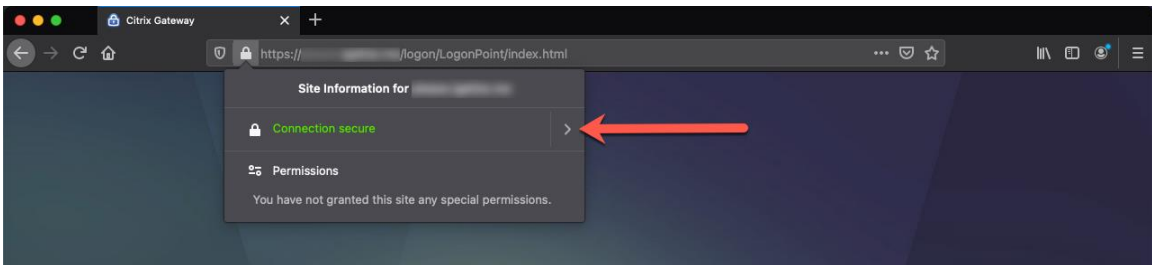


2. If you wish to procure the root certificate yourself, a straightforward way is to use Firefox (or any other Browser that can export Certificates in BASE64) and follow the next few steps.

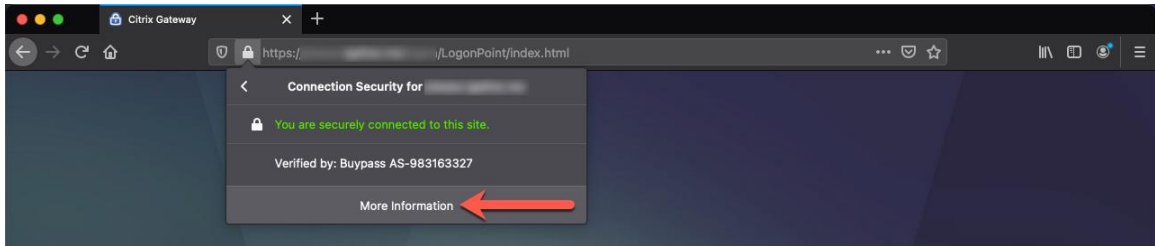
Browse to the StoreFront or Citrix ADC login page and click on the padlock to the URL's left.



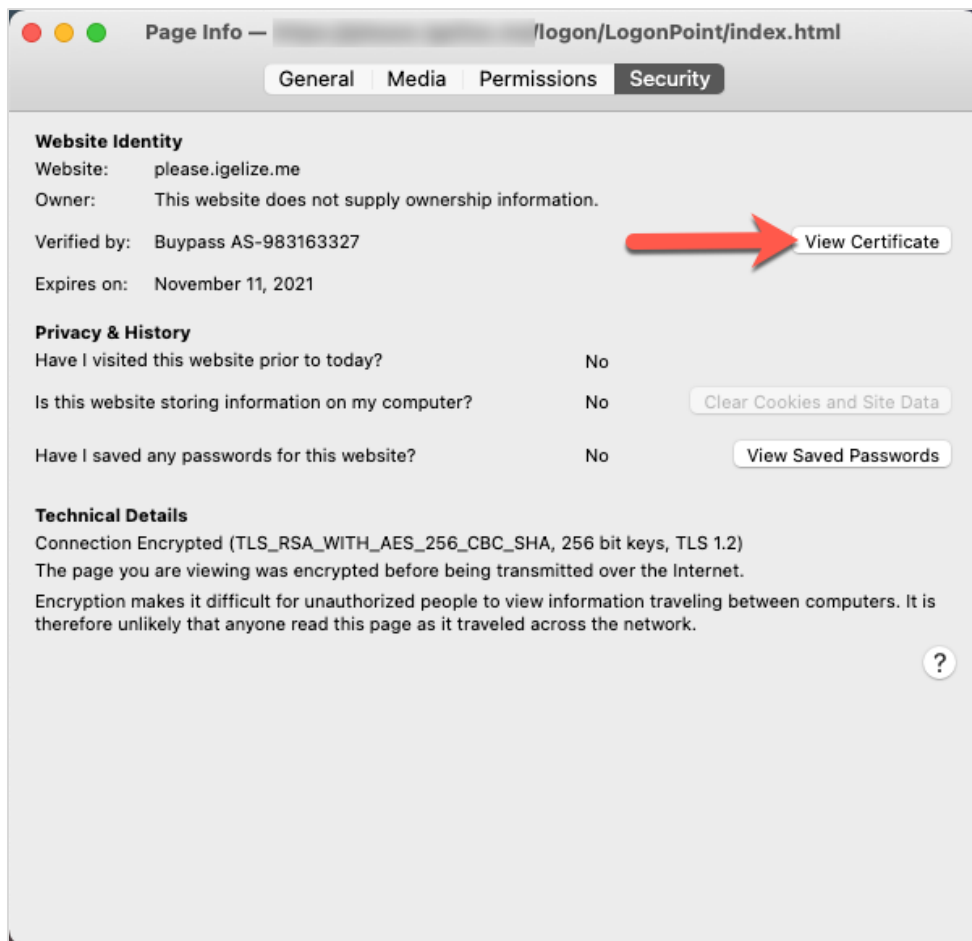
3. If you are using Firefox, click the > icon to the right of the Connection secure link.



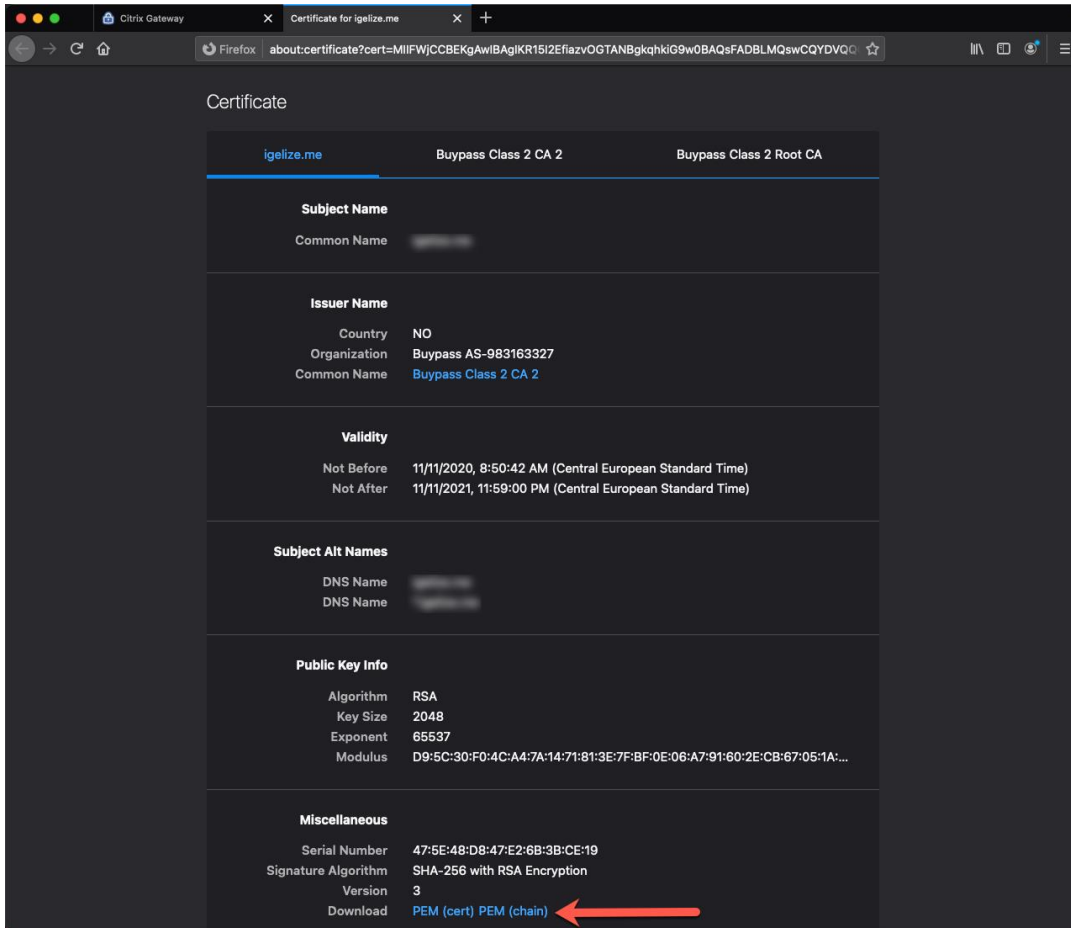
4. Click the **More information** link at the bottom of the dropdown.



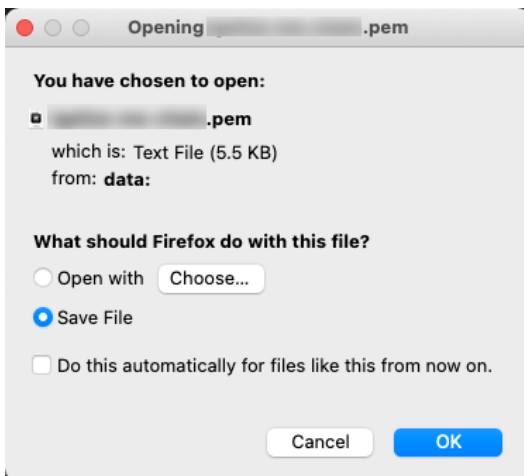
5. The **Page info** screen will open. Depending on the OS you are using, it should look something like the following. Make sure you are on the **Security** page and click the **View Certificate** button.



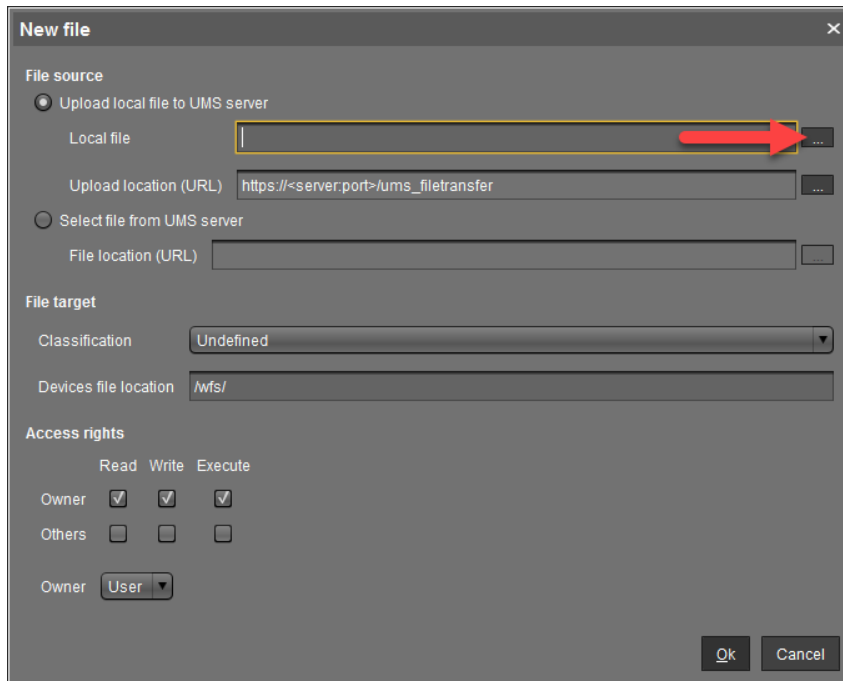
- Your browser will open the **Certificate** page. Scroll down the page until you find the download link. Click the **PEM (chain)** link to download the certificate chain.



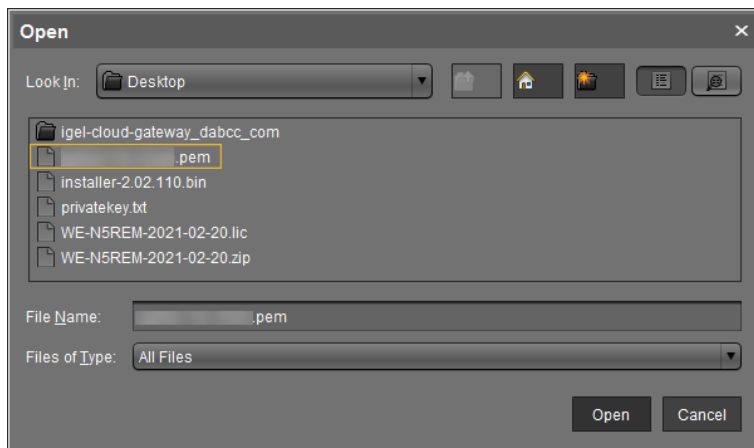
- You are prompted to save the certificate file. Click to select the **Save File** radio button and click the **Ok** button.



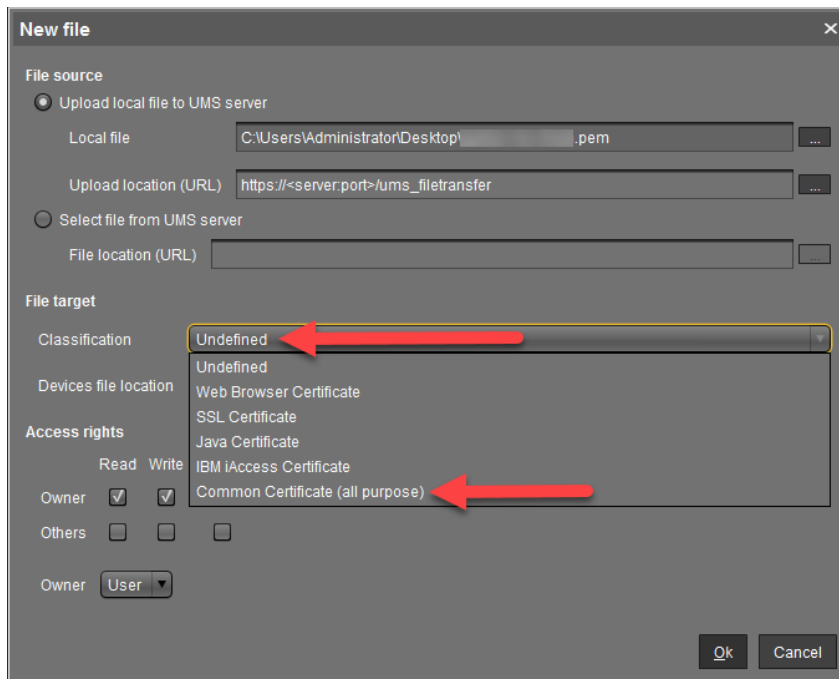
10. Click the ... icon to the right of the local file text box.



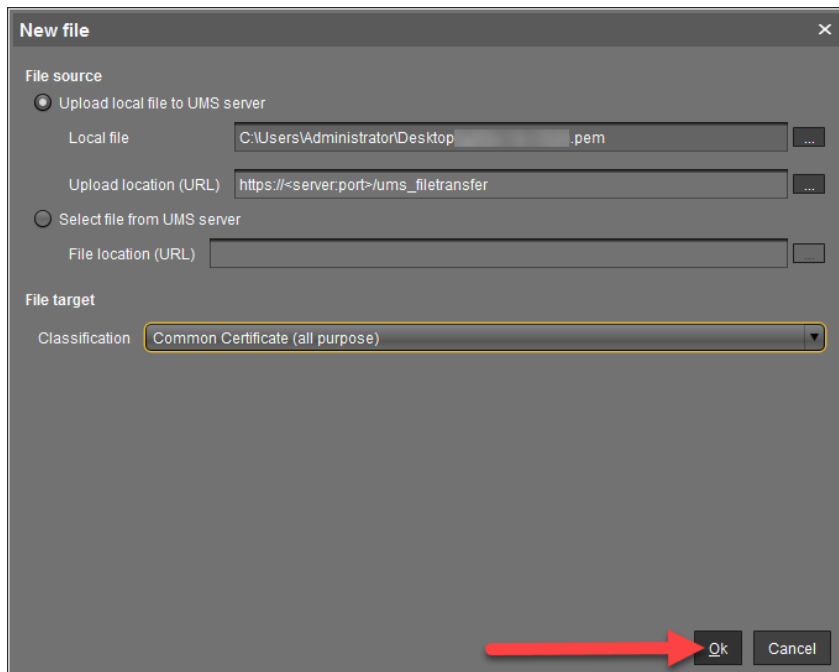
11. The **Open** window opens. Browse to the location you saved the certificate chain .pem file and click to select it. Click the **Open** button to continue.



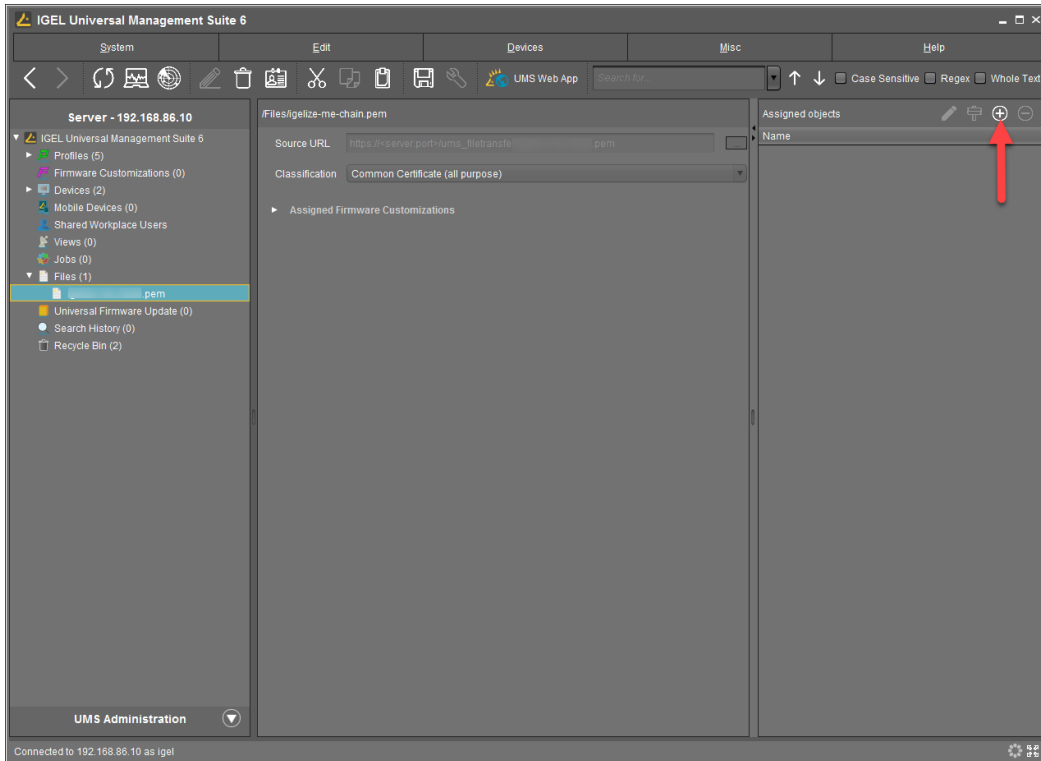
12. Next, you need to tell the IGEL UMS the type of file you are uploading. To do this, click to open the **Classification** combo box and click to select **Common Certificate (all purpose)** located at the bottom of the list.



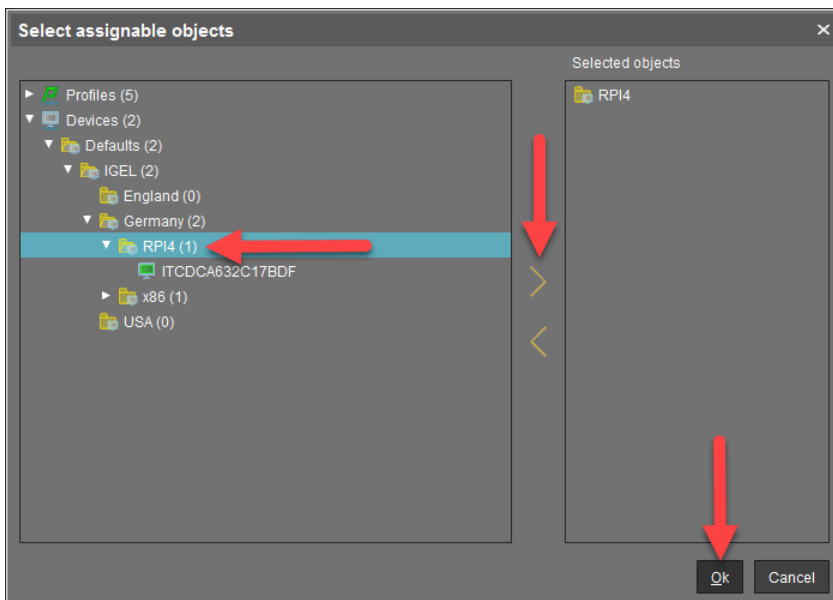
13. Your **New file** window should look like this. If all looks good, click the **Ok** button to upload the certificate to the IGEL UMS.



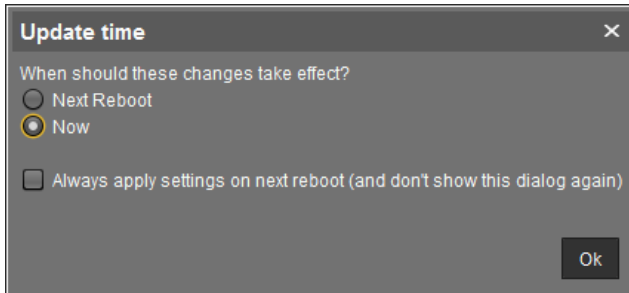
14. The certificate is uploaded, you are ready to assign it to your devices. Click the + button located in the top right of the UMS.



15. The **Select assignable objects** window opens. Please select the desired folders or clients and click the > button to move it to the **Selected objects** section. Once you have defined the objects to assign to the profile, you can click the **Ok** button to save it.

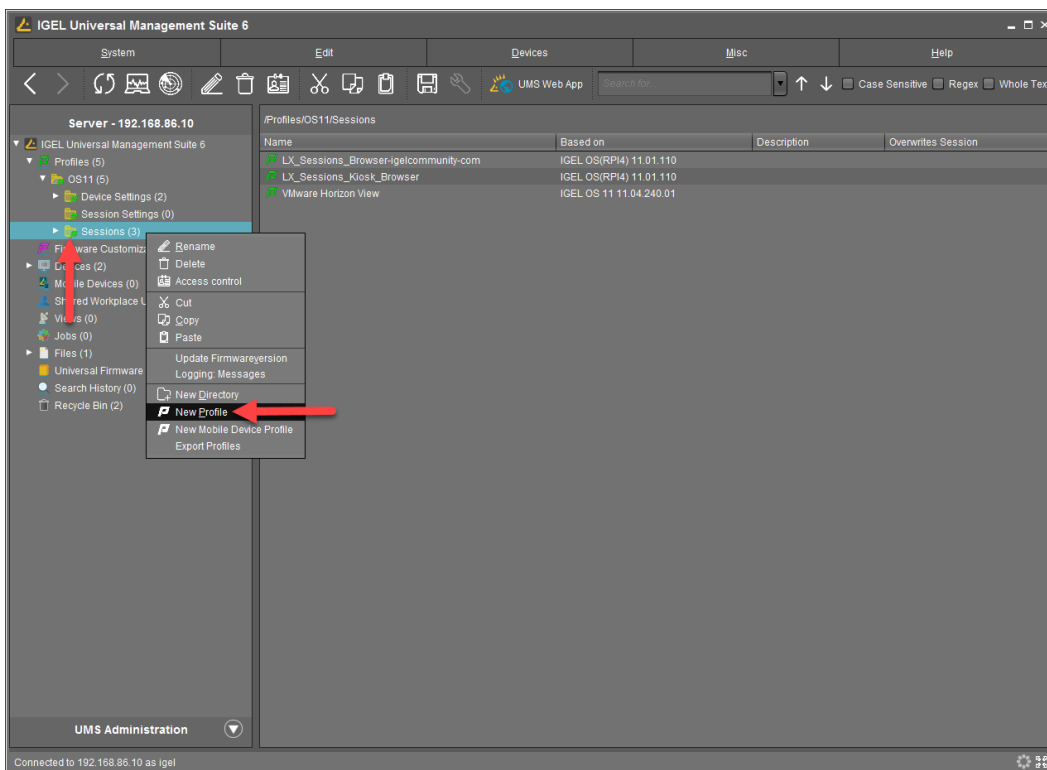


16. You are prompted to specify at what time the new settings will take effect. For this example, click the **Now** radio button and click **Ok** to apply this change in real-time.

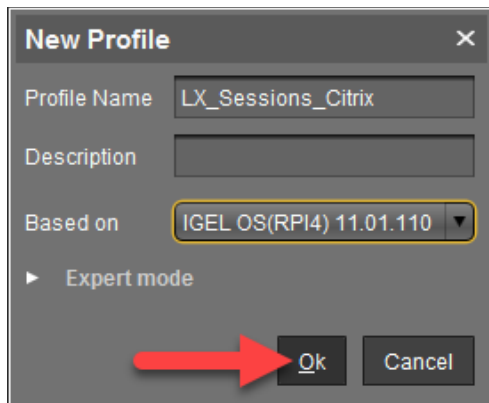


17. The certificate is uploaded and deployed to the desired IGEL OS devices. You are ready to create a profile to deploy the Chromium browser pointing to your Citrix backend.

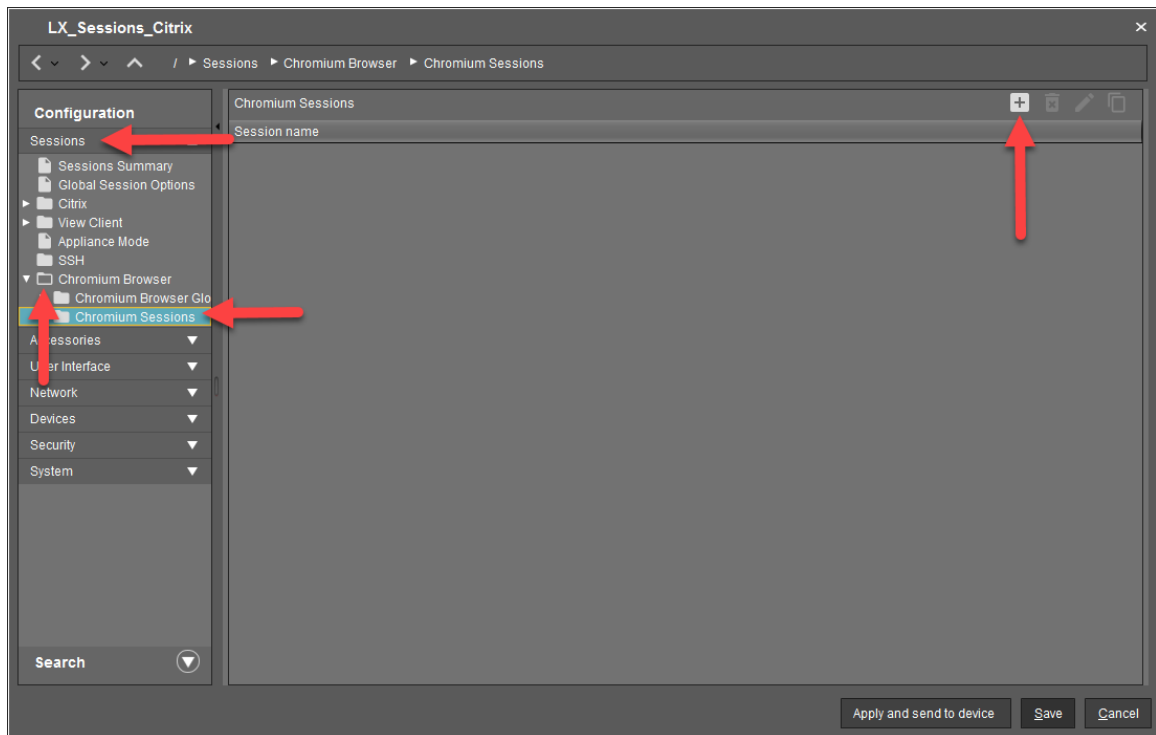
From the IGEL UMS, expand the **Profiles** node, right-click on the **Sessions** folder, and click the **New Profile** link.



18. Enter a descriptive name for the profile in the **Profile Name** text box. Click to expand the **Based On** combo box and click to select the **IGEL OS(RPI4)** entry. Once finished, click the **Ok** button to continue.

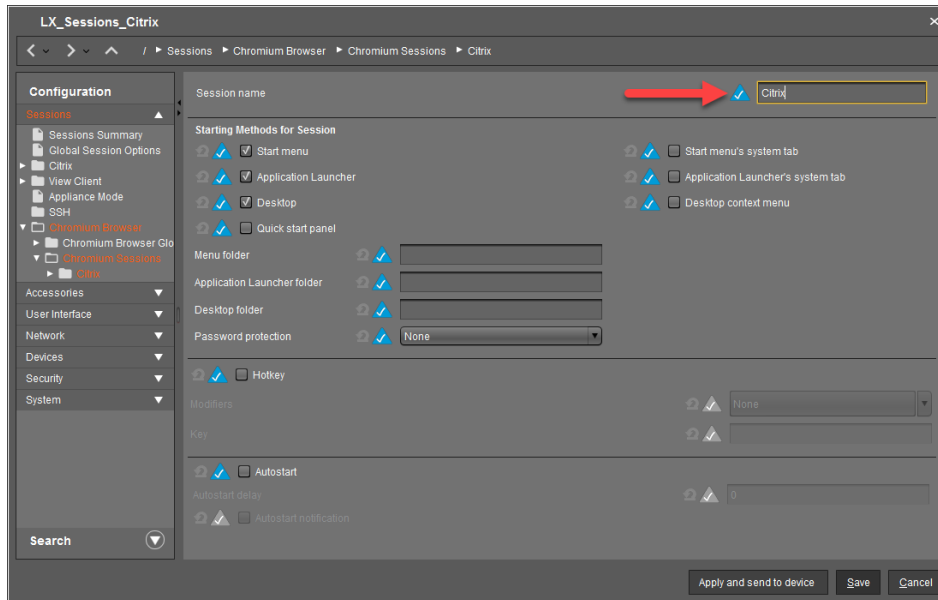


19. Click to expand **Sessions > Chromium Browser** and click to select the **Chromium Sessions** link. Click the **+** button located on the top right of the window.

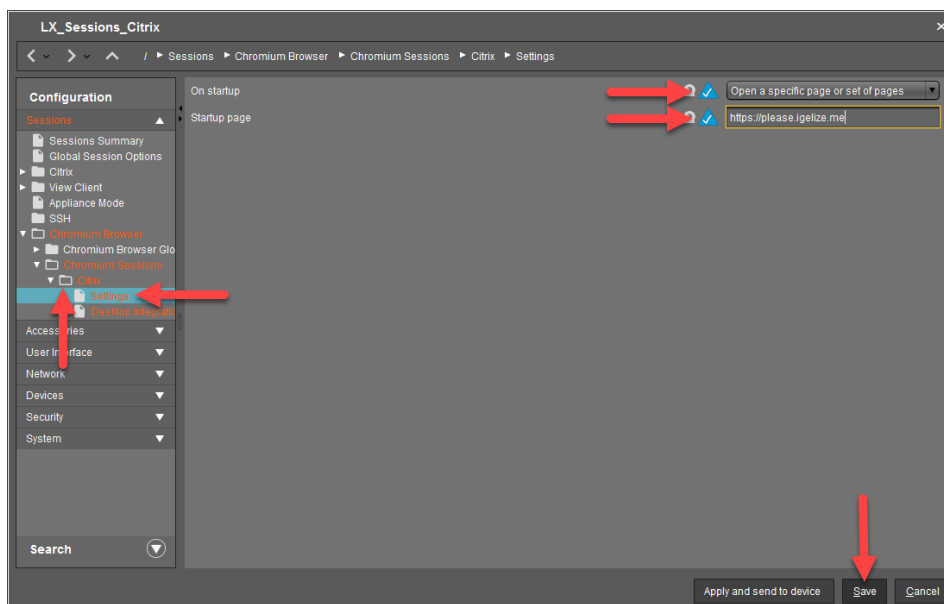


20. The Citrix profile window opens, you can give the session icon a name and select where it will be displayed on the IGEL OS. Enter a friendly name for the Citrix sessions in the **Session name** text box.

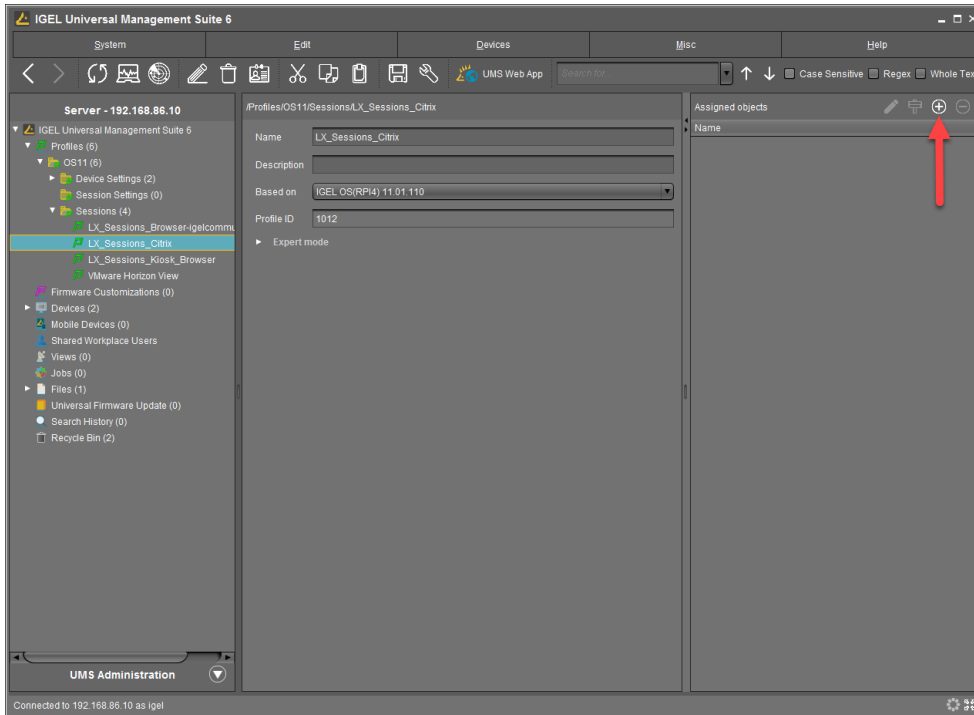
You can also define where this session will be placed on the IGEL OS, select the desired locations. This is up to you.



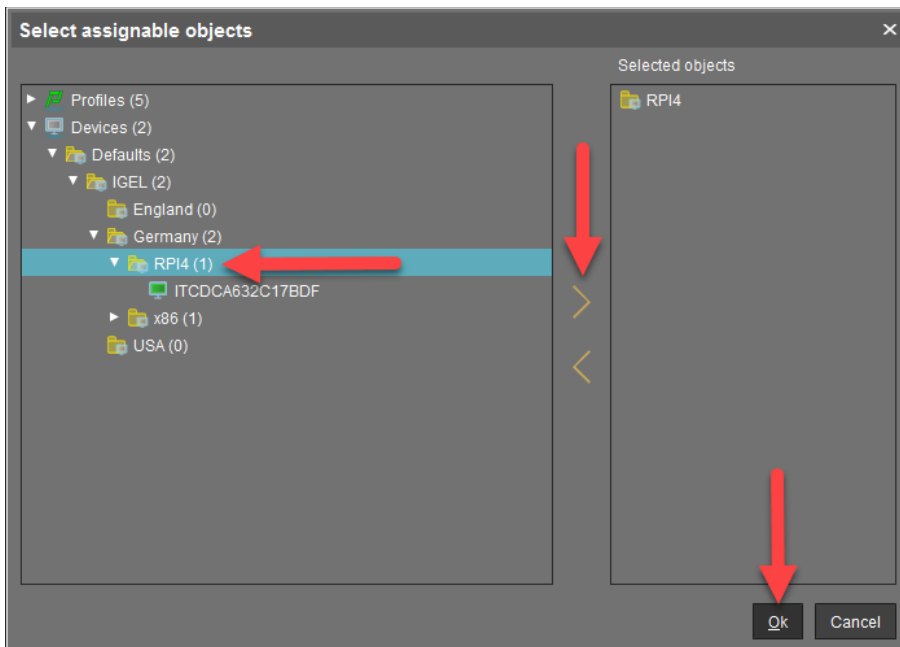
21. Click to **Settings** node below the **Citrix** folder. Here you will define the web page the browser will open upon startup. Click to open the **On startup** combo box and select **Open a specific page or set of pages** item from the list. Next, enter the URL of the Citrix login web page in the **Startup page** text box. Once finished, click the **Save** button.



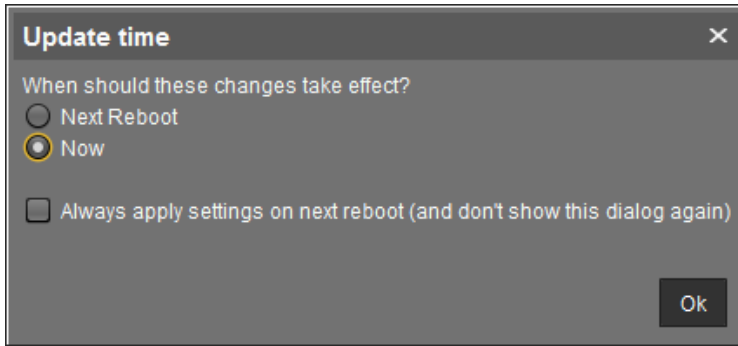
22. The profile is created, and you are ready to assign it to your devices. Click the + button located in the top right of the UMS.



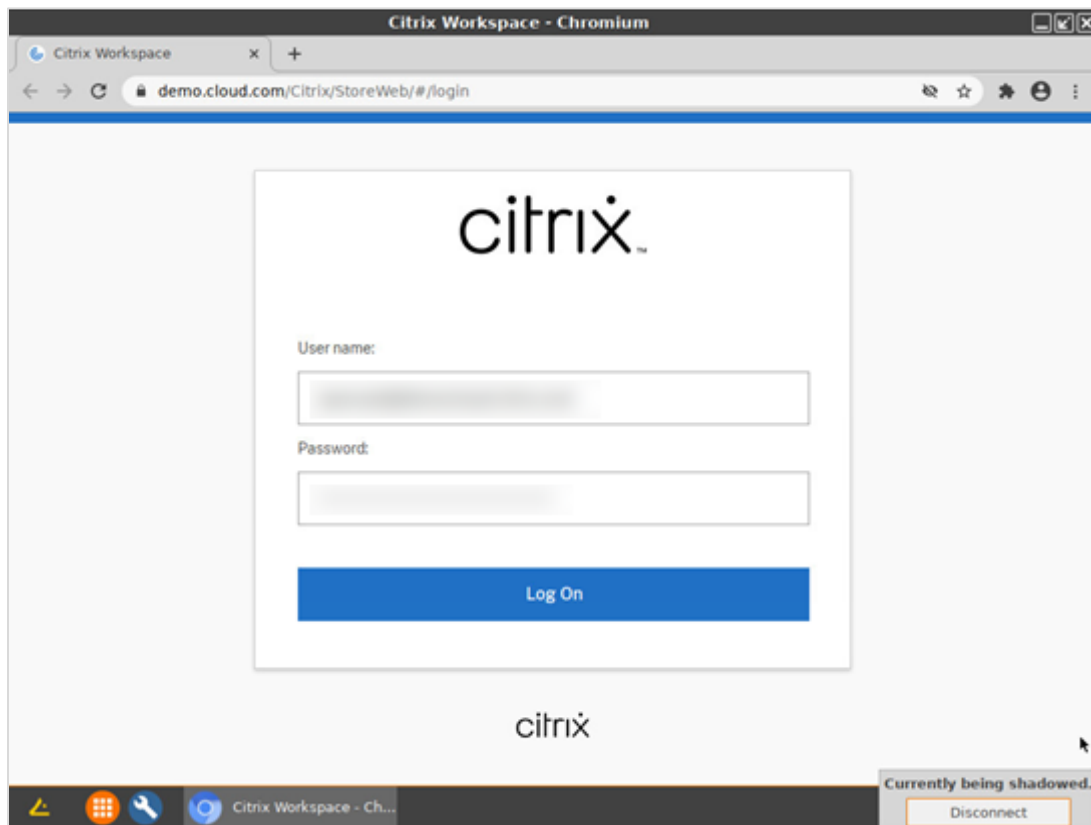
23. The **Select assignable objects** window opens. Please select the desired folders or clients and click the > button to move it to the **Selected objects** section. Once you have defined the objects to assign to the profile, you can click the **Ok** button to save it.



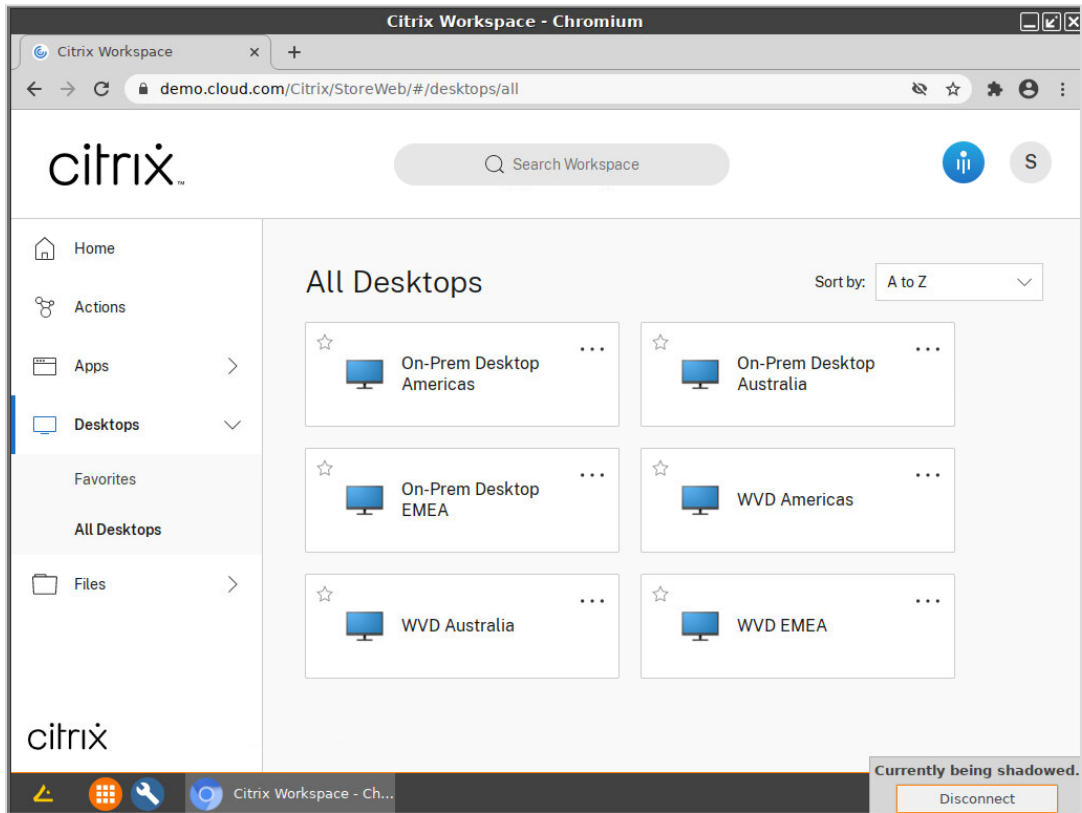
24. You are prompted to specify at what time the new settings will take effect. Select the desired setting and click **Ok** to apply the new settings.



25. You have successfully deployed access to your Citrix environment via the Chromium browser. Your desired users will see a new icon on their desktop. Once double-clicked, the Chromium browser will open to the Citrix login page.



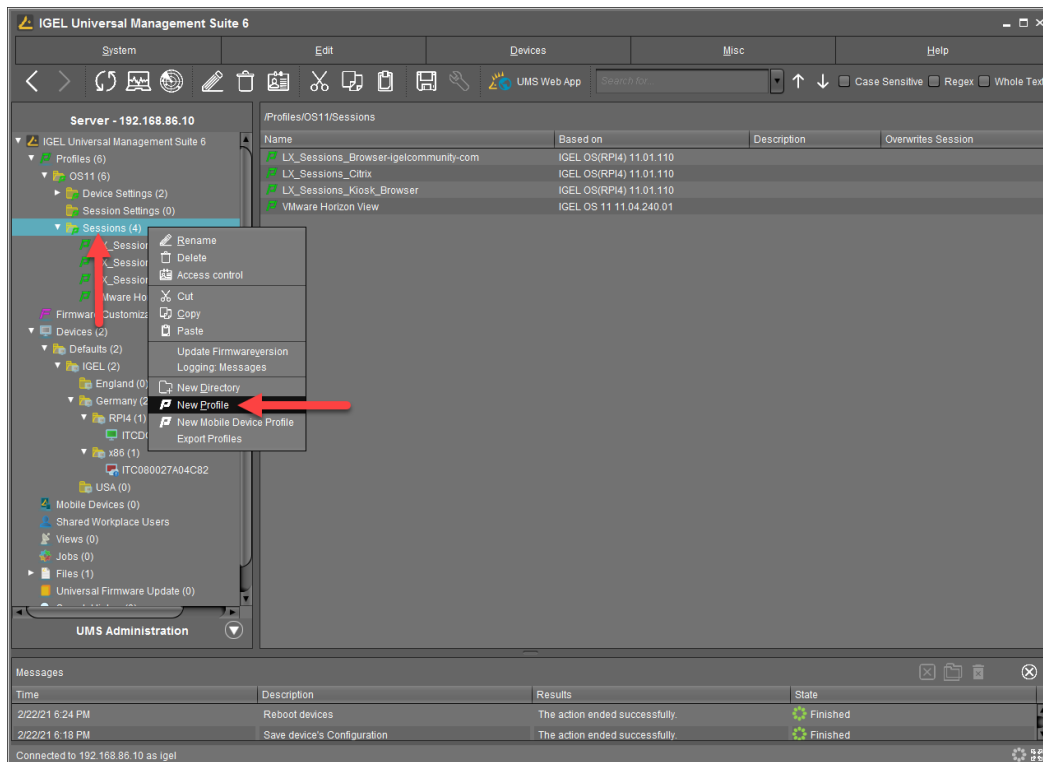
26. Once logged in, you will see a list of resources assigned to the user.



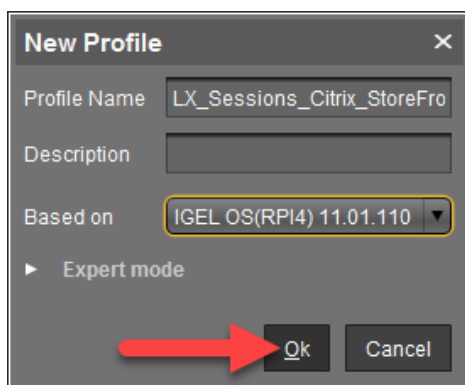
5. How to Create a Citrix StoreFront Session

The following steps define how to create a Citrix StoreFront session and assign it to the IGEL OS(RPI4) for NComputing RX420(IGEL).

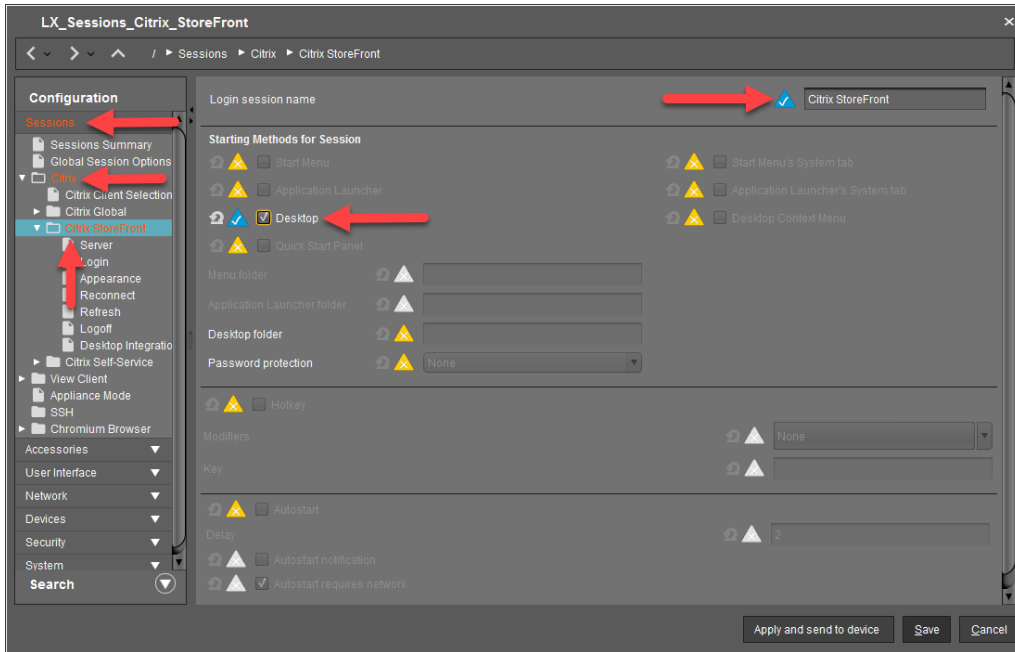
1. From the IGEL UMS, expand the **Profiles** node, right-click on the **Sessions** folder, and click the **New Profile** link.



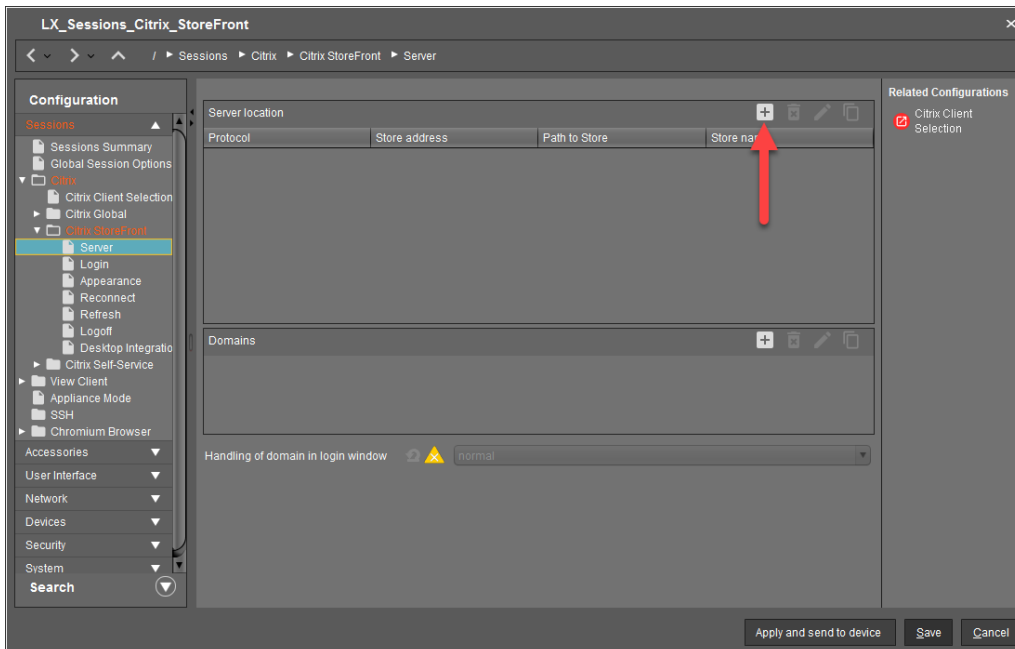
2. Enter a descriptive name for the profile in the **Profile Name** text box. Click to expand the **Based On** combo box and click to select the **IGEL OS(RPI4)** entry. Once finished, click the **Ok** button to continue.



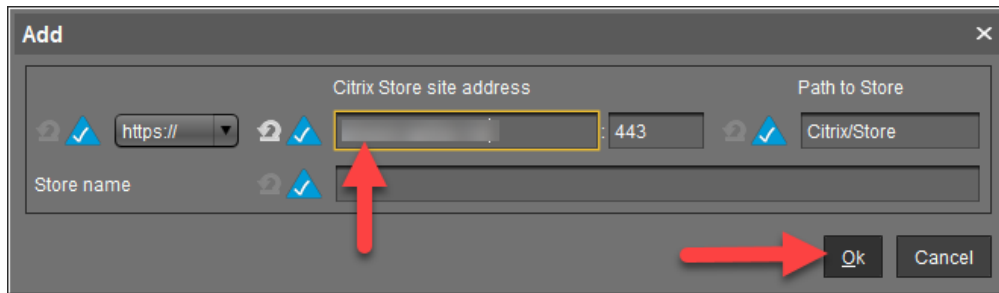
3. Click to expand **Sessions > Citrix > Citrix StoreFront** node. Here you will give the session a name and define where the session icon will be stored. Enter the desired session name in the **Login session name** text box. In the **Starting Methods for Session** section, define where you would like the session icon to be added on the IGEL OS.



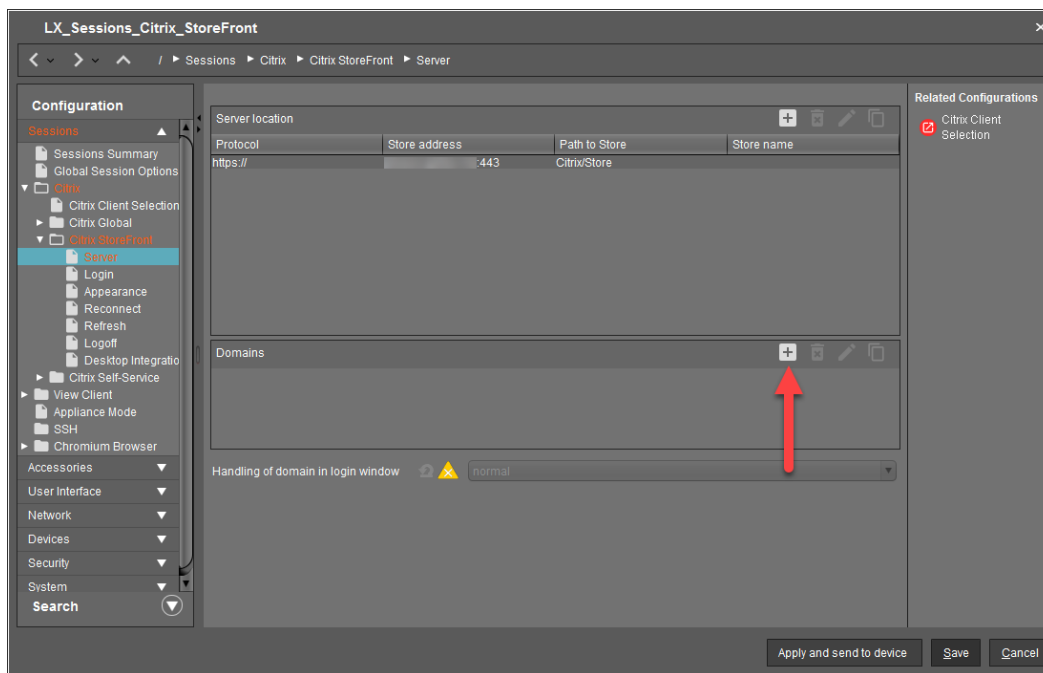
4. Click the **Server** node located below the **Citrix StoreFront** folder and click the **+** button.



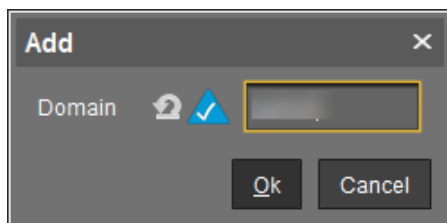
5. Enter the Citrix Store URL of the **Citrix Store site address** text box. You do not need to enter the HTTP(s) part. Once finished, click the **Ok** button.



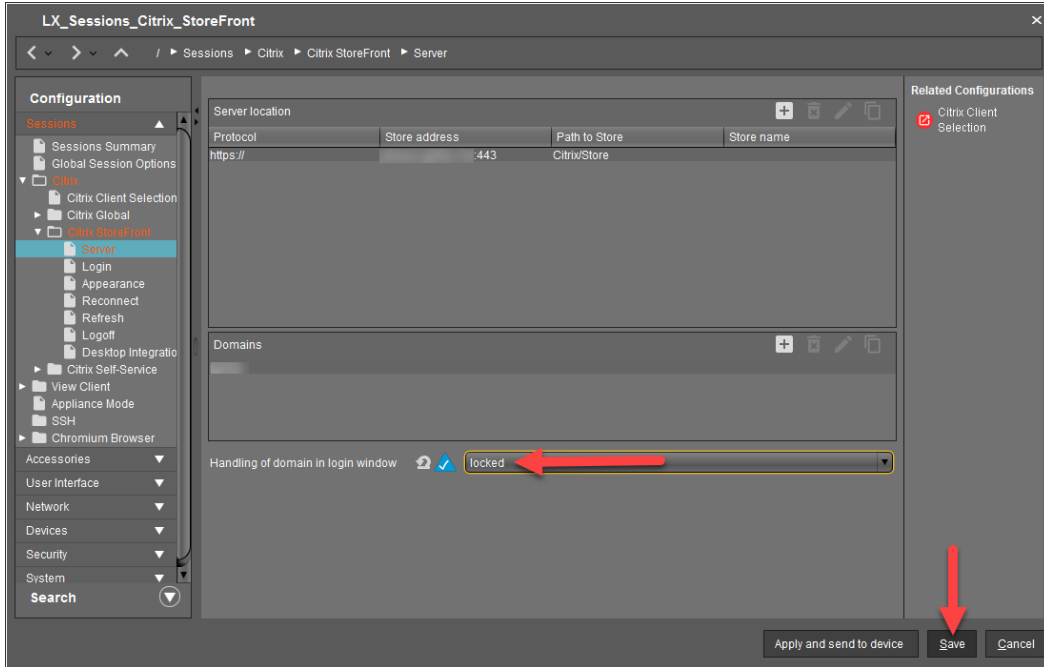
6. You are brought back to the **Server** properties page. Click the **+** icon located in the **Domains** section of the page.



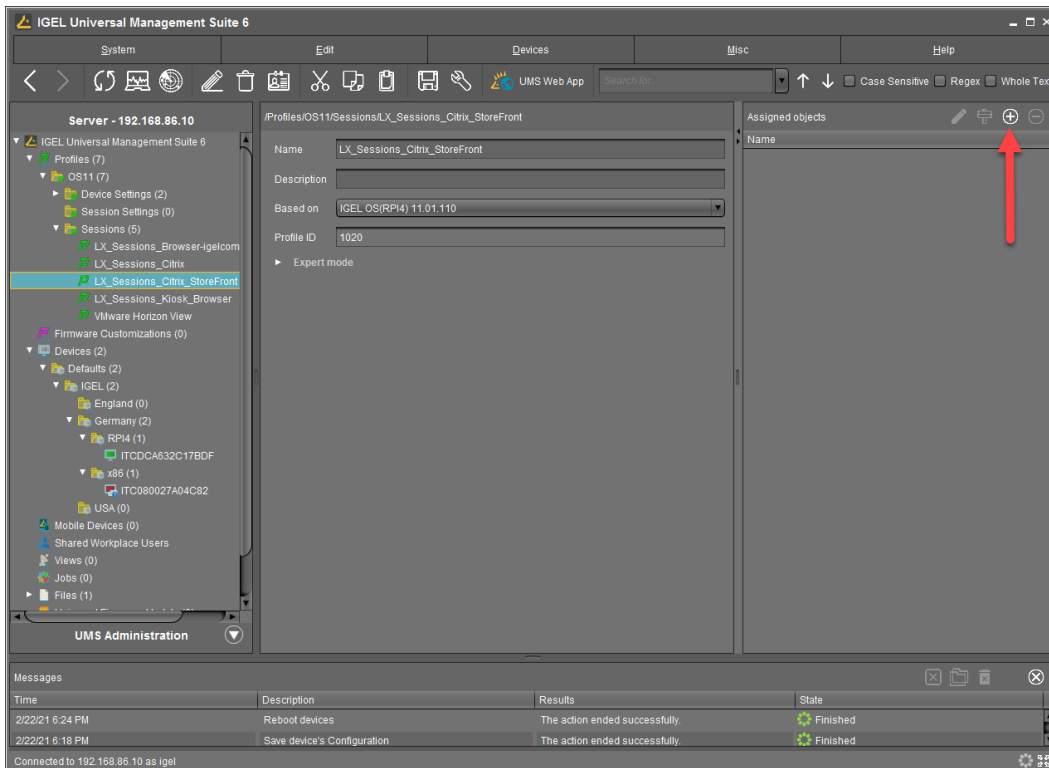
7. Enter the domain of the Citrix Store in the **Domain** text box. For example, igelcommunity.com. Click **Ok** to save the domain name and return to the **Server** properties page.



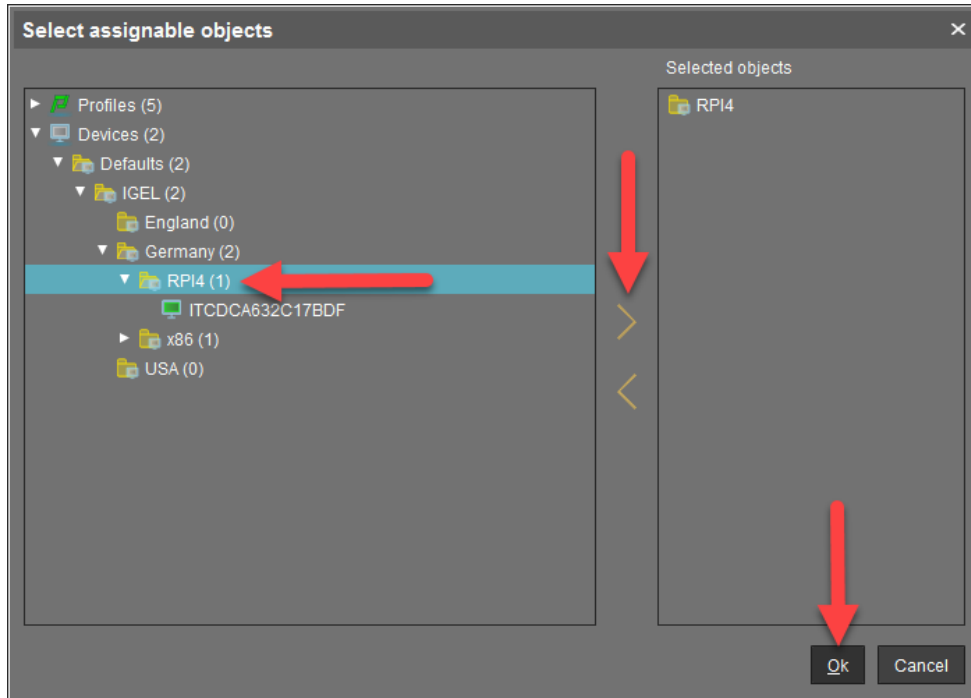
8. Select the **locked** entry from the **Handling of domain in login window** combo box and click the **Save** button to save the StoreFront profile.



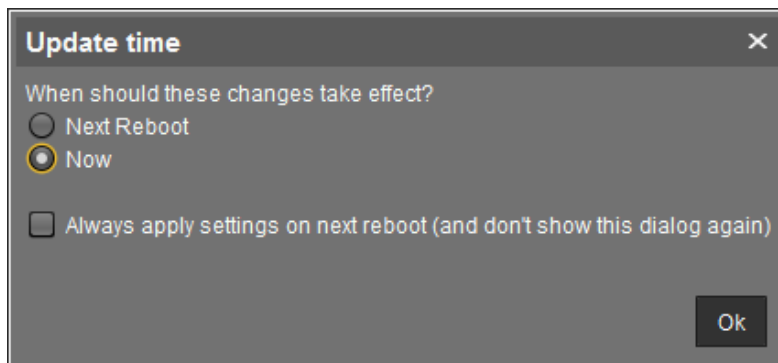
9. The shadowing profile is created, and you are ready to assign it to your devices. Click the + button located in the top right of the UMS.



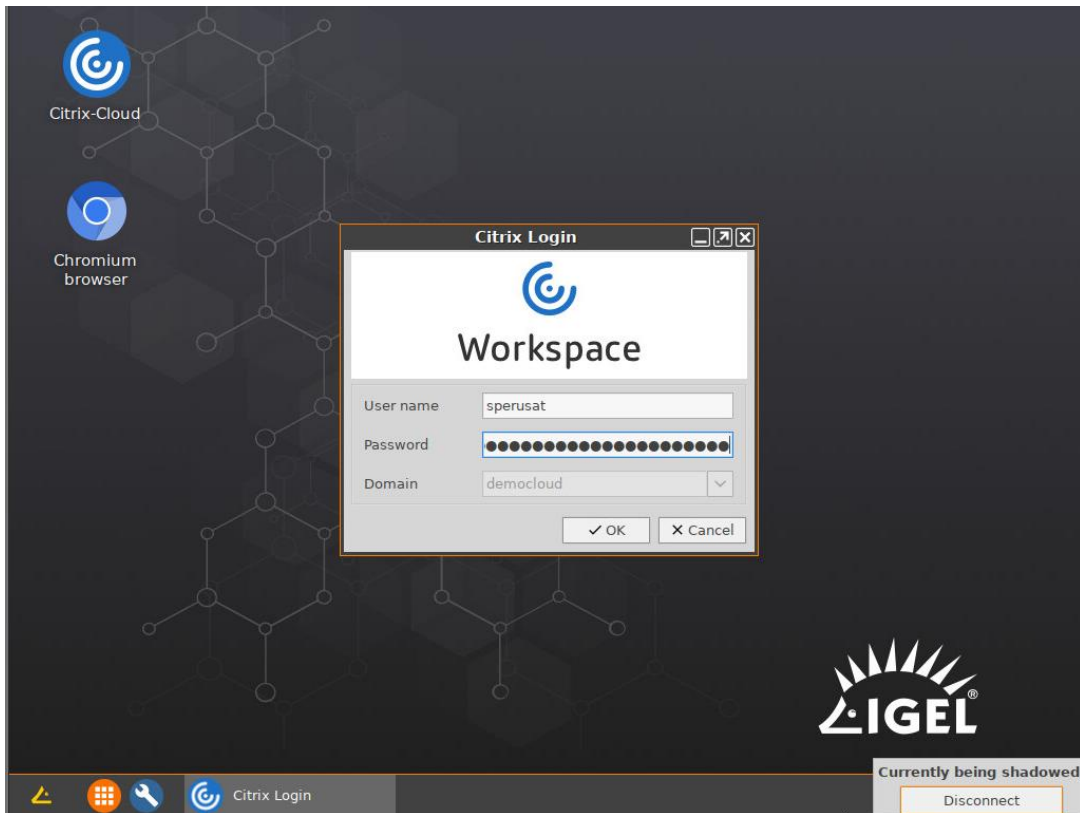
10. The **Select assignable objects** window opens. Please select the desired folders or clients and click the > button to move it to the **Selected objects** section. Once you have defined the objects to assign to the profile, you can click the **Ok** button to save it.



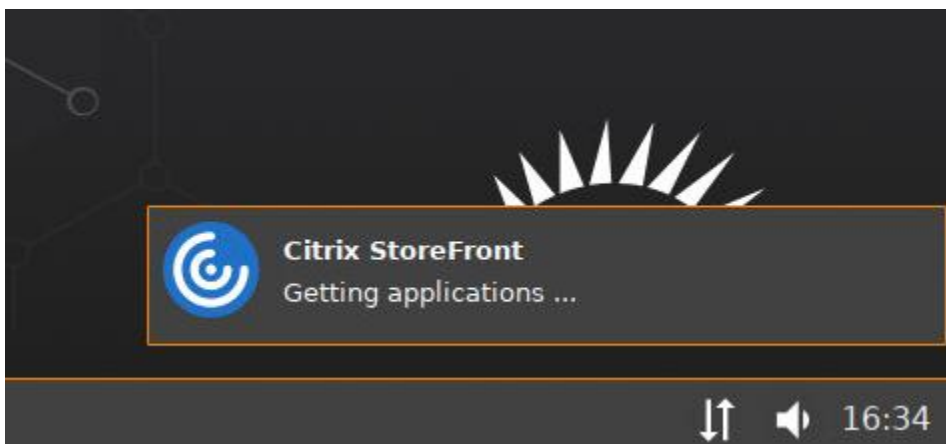
11. You are prompted to specify at what time the new settings will take effect. Select the desired setting and click **Ok** to apply the new settings.



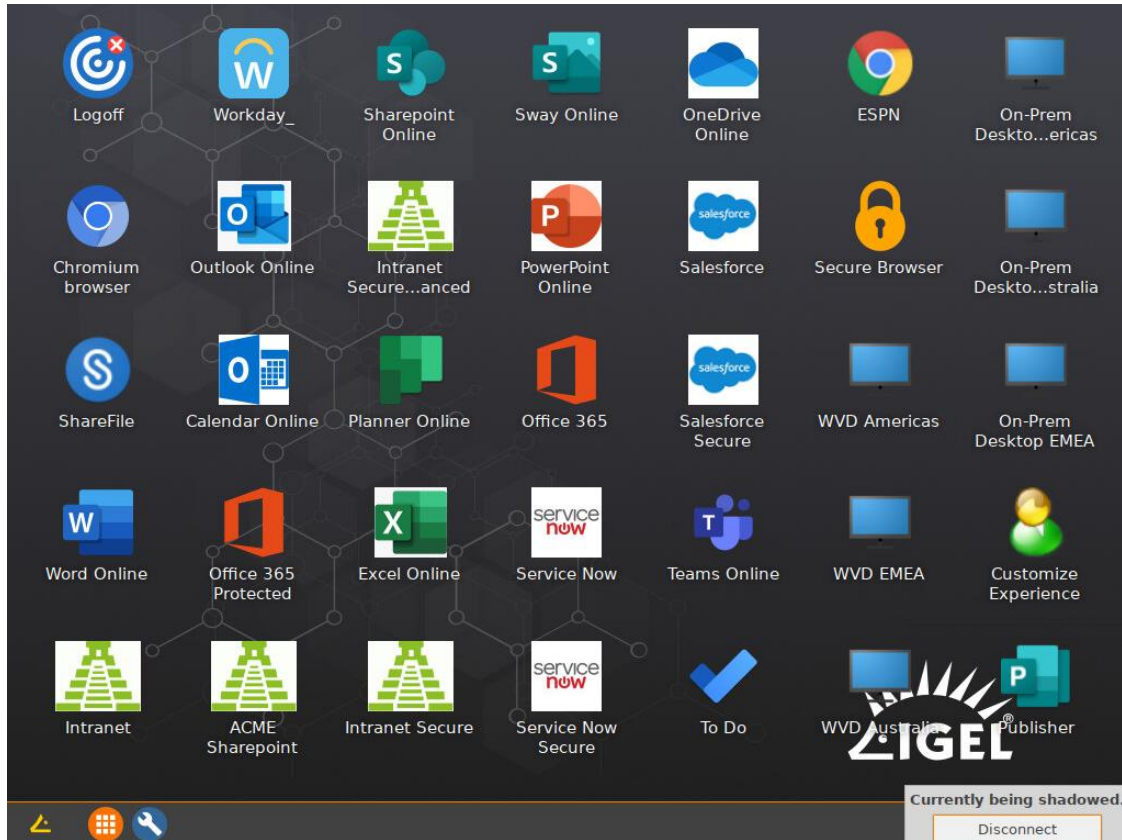
12. Flip over to the RX420(IGEL) device, and you will notice the new Citrix icon has been added to the desktop. Yippie. Double-click to launch it and log in.



13. Once authenticated, a notification message should popup notifying you Citrix StoreFront is "getting applications."



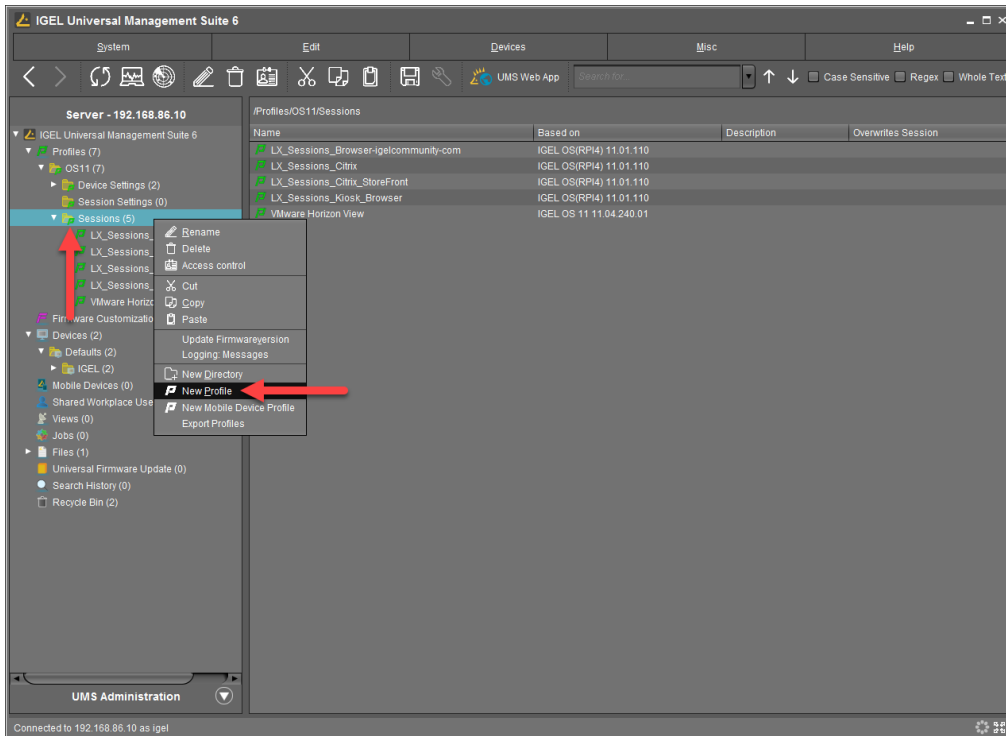
14. Once logged in, the IGEL OS desktop should be populated with the application icons you have defined to the authenticated user.



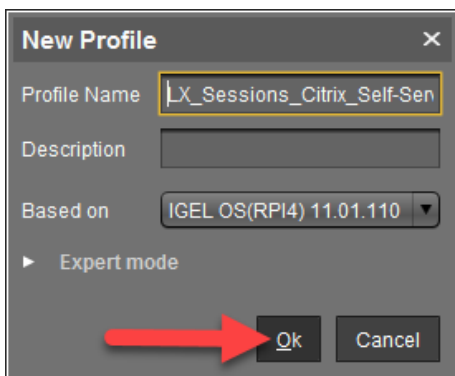
6. How to Create a Citrix Self-Service Session

Next, you might want to configure Citrix Self-Service access. No problem, IGEL does that too. The following steps details how to deploy a Citrix Self-Service Session to the IGEL OS desktop.

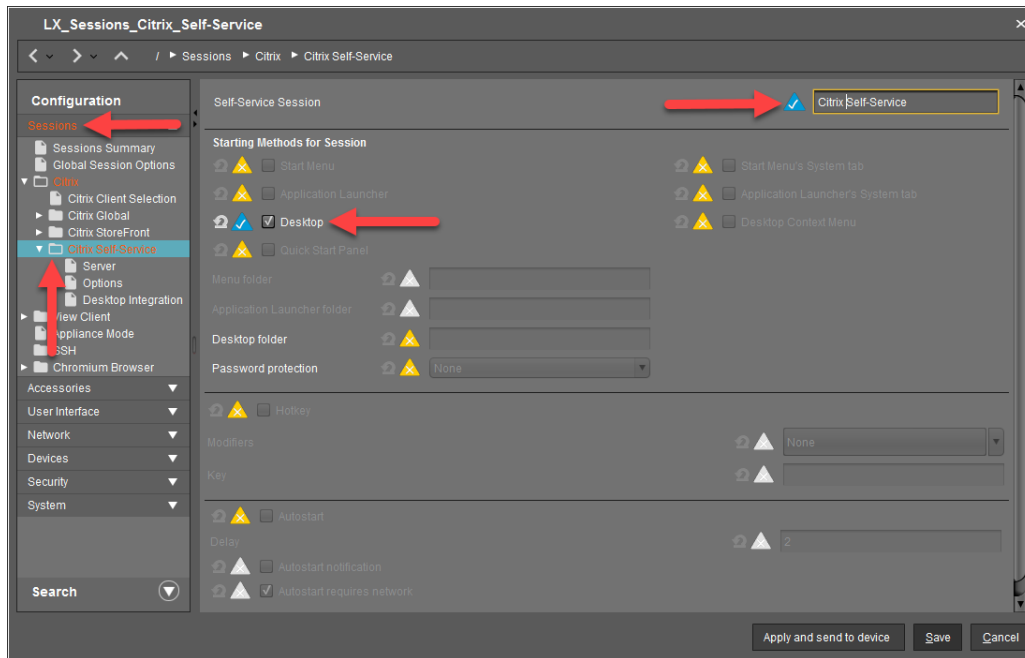
1. From the IGEL UMS, expand the **Profiles** node, right-click on the **Sessions** folder, and click the **New Profile** link.



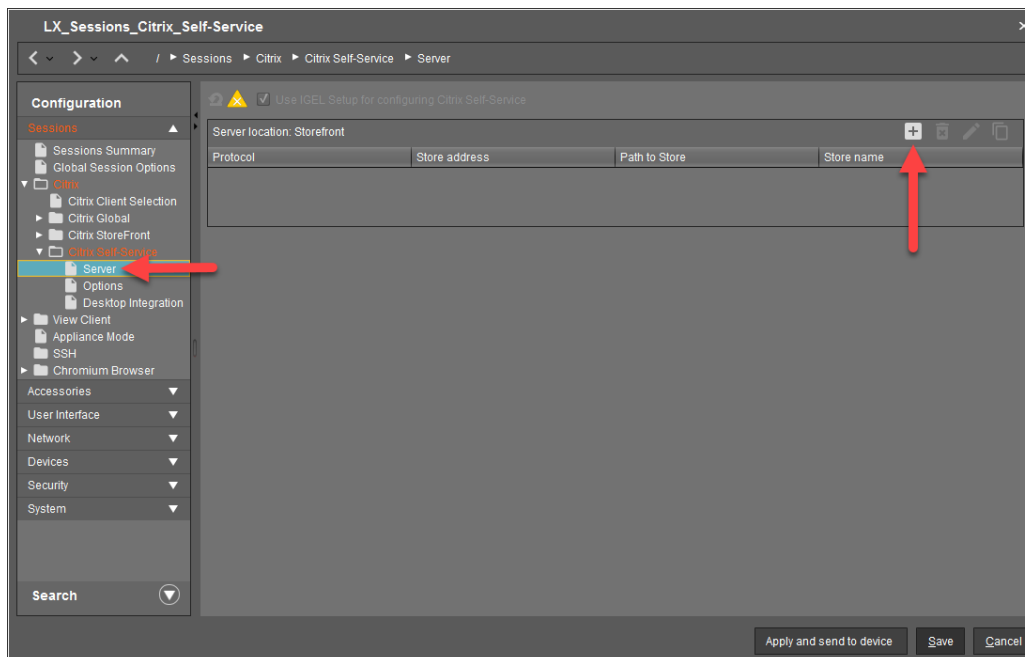
2. Enter a descriptive name for the profile in the **Profile Name** text box. Click to expand the **Based On** combo box and click to select the **IGEL OS(RPI4)** entry. Once finished, click the **Ok** button to continue.



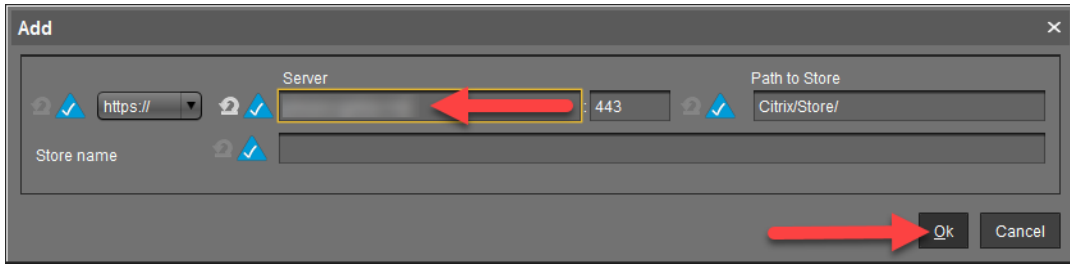
- Click to expand **Session > Citrix >** click to select the **Citrix Self-Service** node. Click the yellow **Self-Service Session** triangle and then enter a name for the desktop icon in the associated textbox. Next, define where you would like the Self-Service icon to be located. In the following example, we are placing it only on the desktop. Of course, this is up to you. After all, as I like to say, the sky is the limit with IGEL!



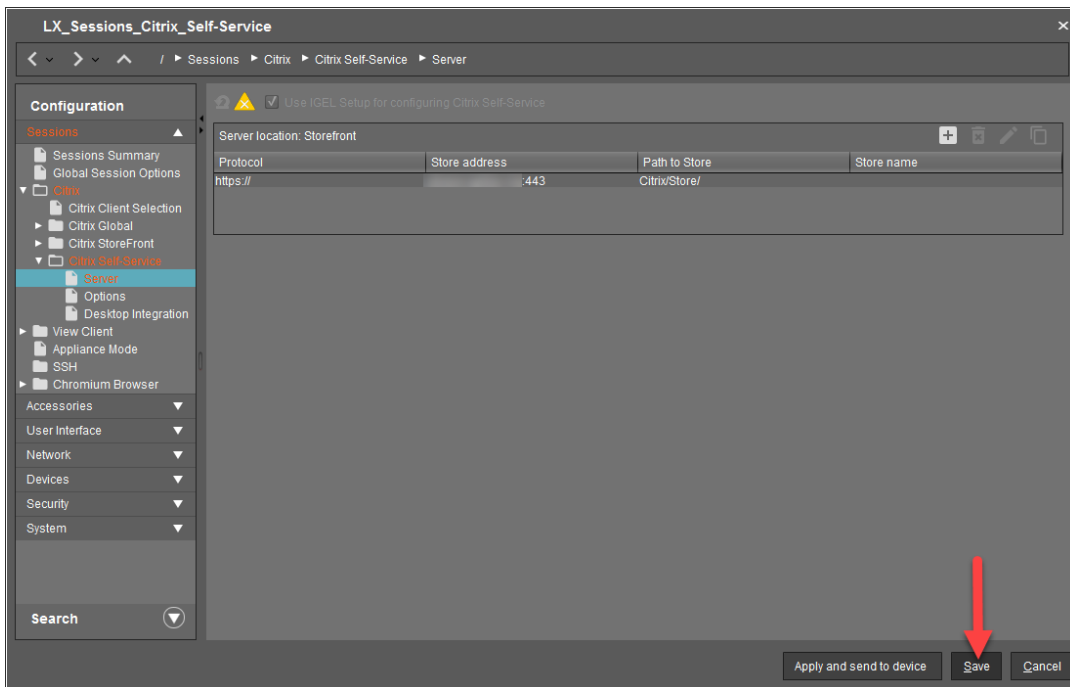
- Click the **Server** node located under the **Citrix Self-Service** folder. Click the **+** button.



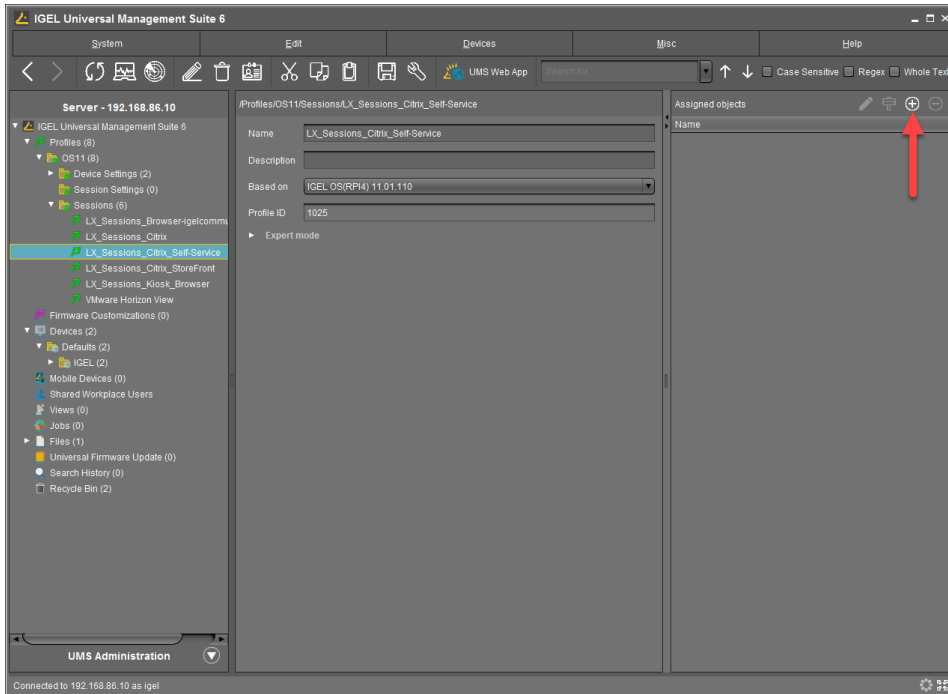
5. You are prompted to enter the server location of the Citrix Self-Service server. Enter the details in the box. When finished, click the **Ok** button to continue.



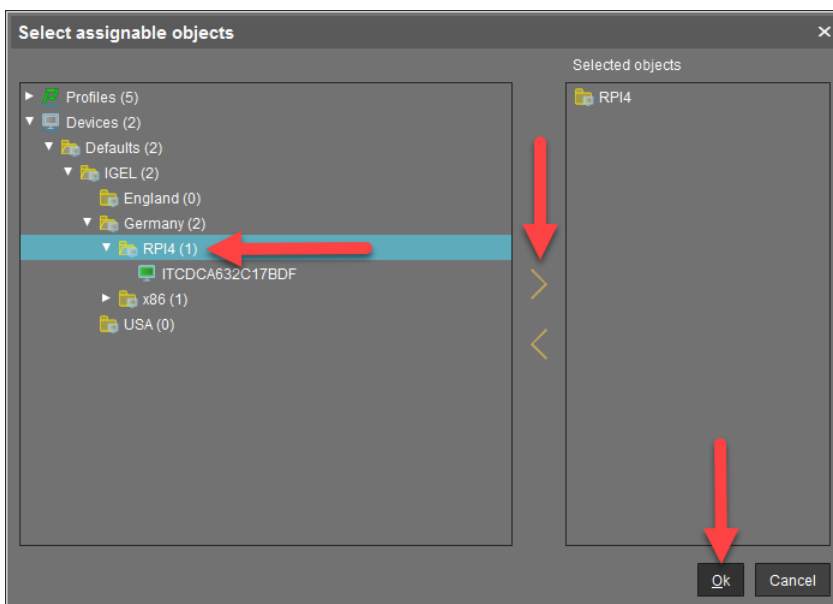
6. You are brought back to the Sever page, and the server you entered above is added to the **Server location: Storefront list**. You are done. Go ahead and click the **Save** button.



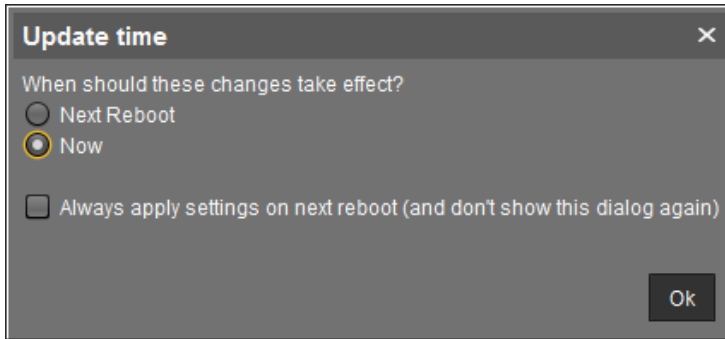
7. The profile is created, you are ready to assign it to your devices. Click the + button located in the top right of the UMS.



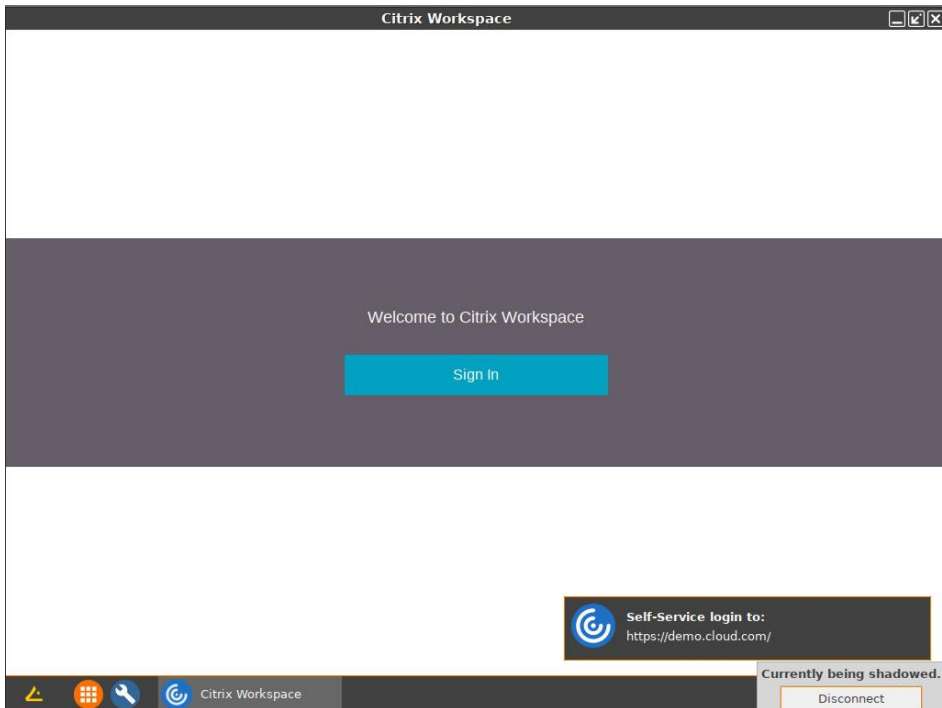
8. The **Select assignable objects** window opens. Select the desired folders or clients and click the > button to move it to the **Selected objects** section. Once you have defined the objects to assign to the profile, you can click the **Ok** button to save it.



9. You are prompted to specify at what time the new settings will take effect. Select the desired setting and click **Ok** to apply the new settings.



10. Once the profile is deployed to the IGEL OS(RPI4) device, you can click on the icon, and you will be prompted to log into your Citrix Self-Service portal. Fun days indeed.



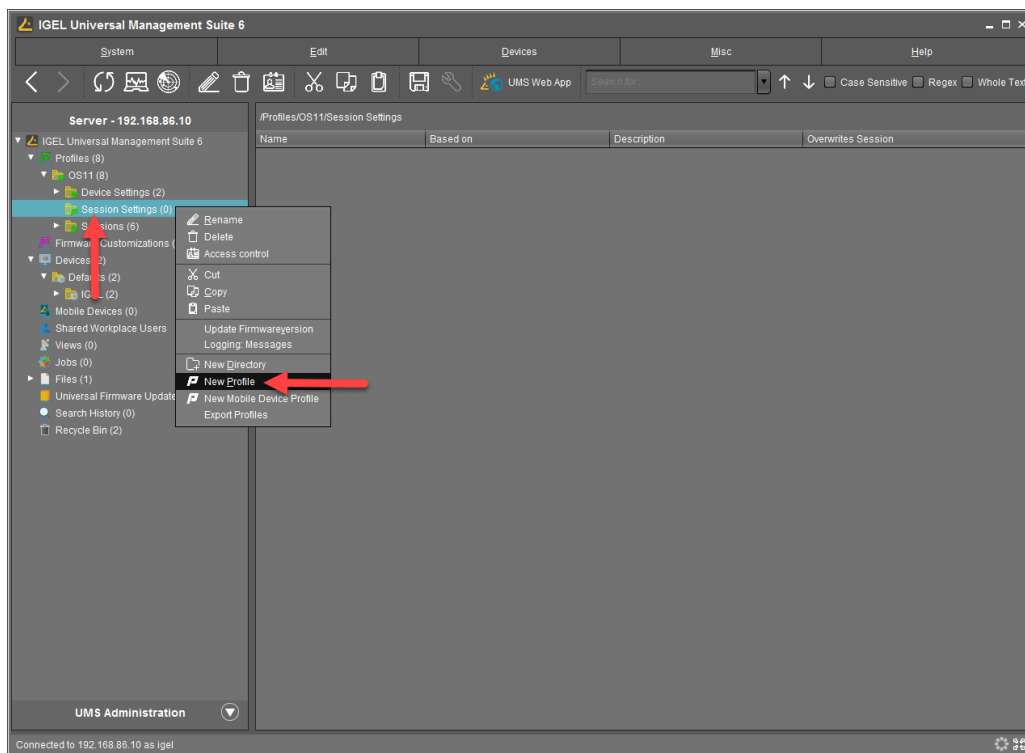
7. How to Turn Citrix Native USB Redirection Off & Enable HDX Webcam Integration

One more task to go! These last two items are a bit of optimization. It is a best practice to turn off Citrix Native USB redirection and enable Citrix HDX webcam integration.

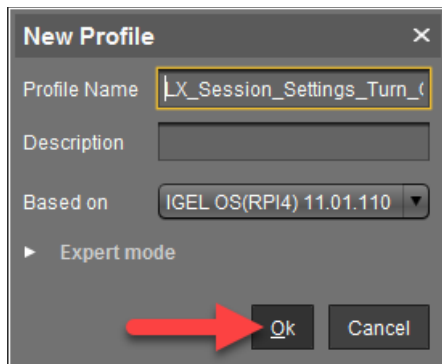
Note: Currently, only 32-bit applications support webcam redirection. For more information, please refer to

https://support.citrix.com/article/CTX132764?_ga=2.139819699.1432102408.1612870773-1566574569.1612870773

1. First, let us turn off the Citrix Native USB Redirection. From the IGEL UMS, expand the **Profiles** node, right-click on the **Sessions** folder, and click the **New Profile** link.



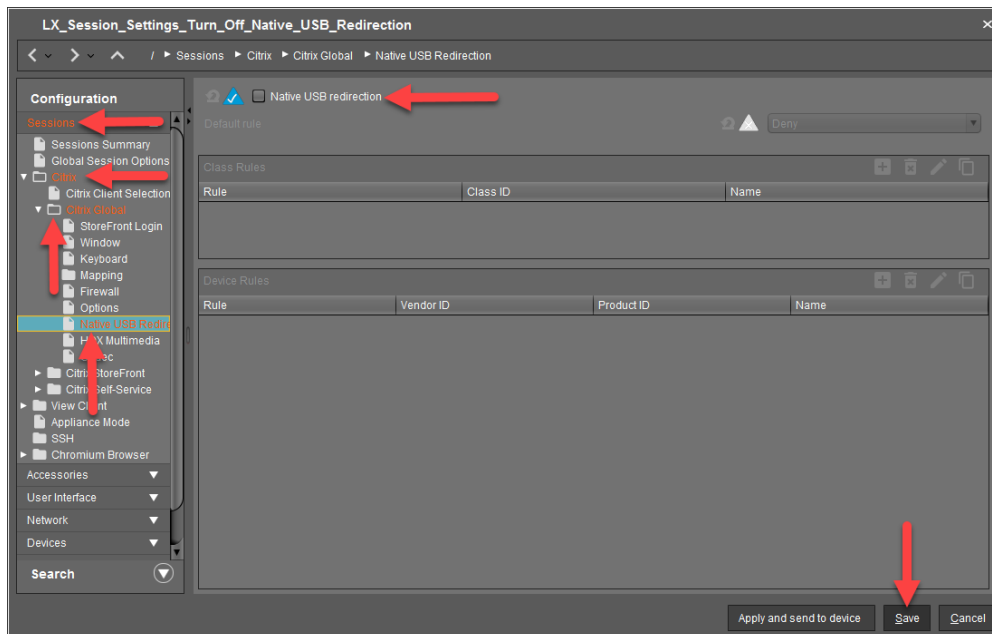
2. Enter a descriptive name for the profile in the **Profile Name** text box. Click to expand the **Based On** combo box and click to select the **IGEL OS(RPI4)** entry. Once finished, click the **Ok** button to continue.



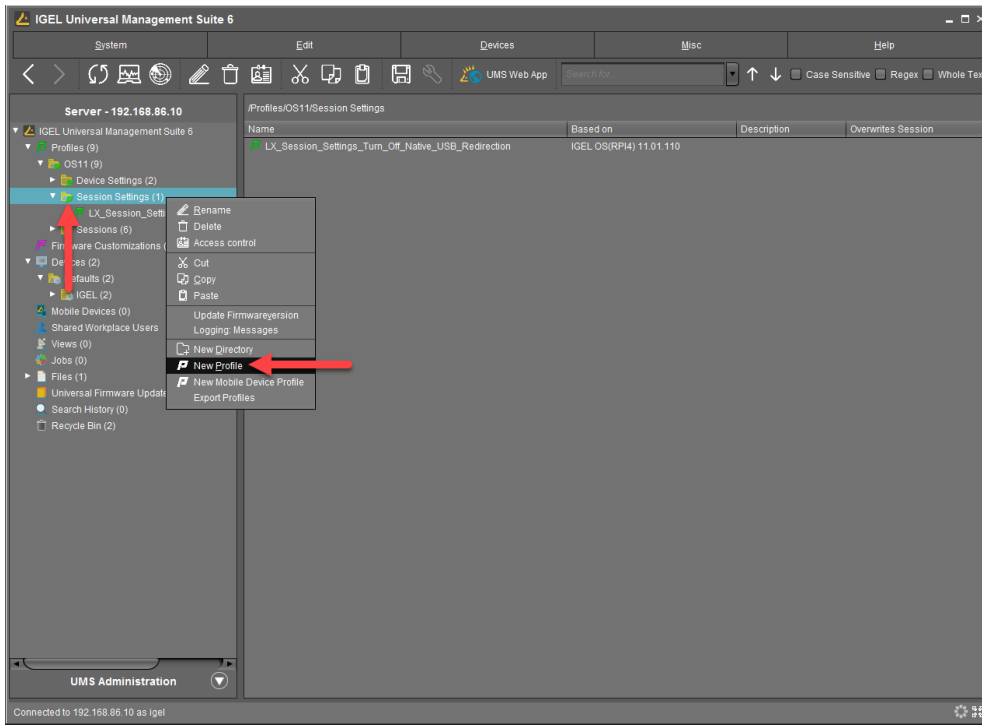
3. Since Microsoft Teams and Zoom Optimizations are not available yet, you might want to evaluate how to use the webcam redirection instead. First, check that your webcam is not redirected by USB Redirection.

Click to expand **Session > Citrix > Citrix Global** and then click to select the **Native USB Redirection** node. Click the yellow triangle to enable it, and then uncheck the **Native USB redirection** checkbox.

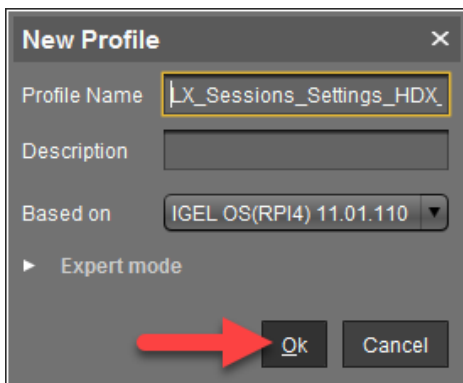
Once finished, click the **Save** button to continue.



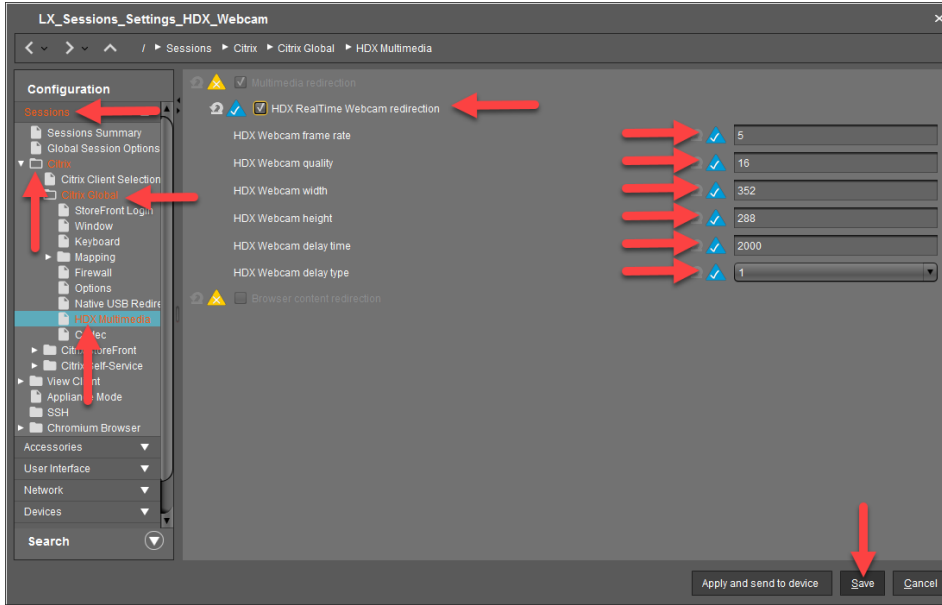
- We are now ready to enable Citrix HDX Webcam Integration. From the IGEL UMS, expand the **Profiles** node, right-click on the **Sessions** folder, and click the **New Profile** link.



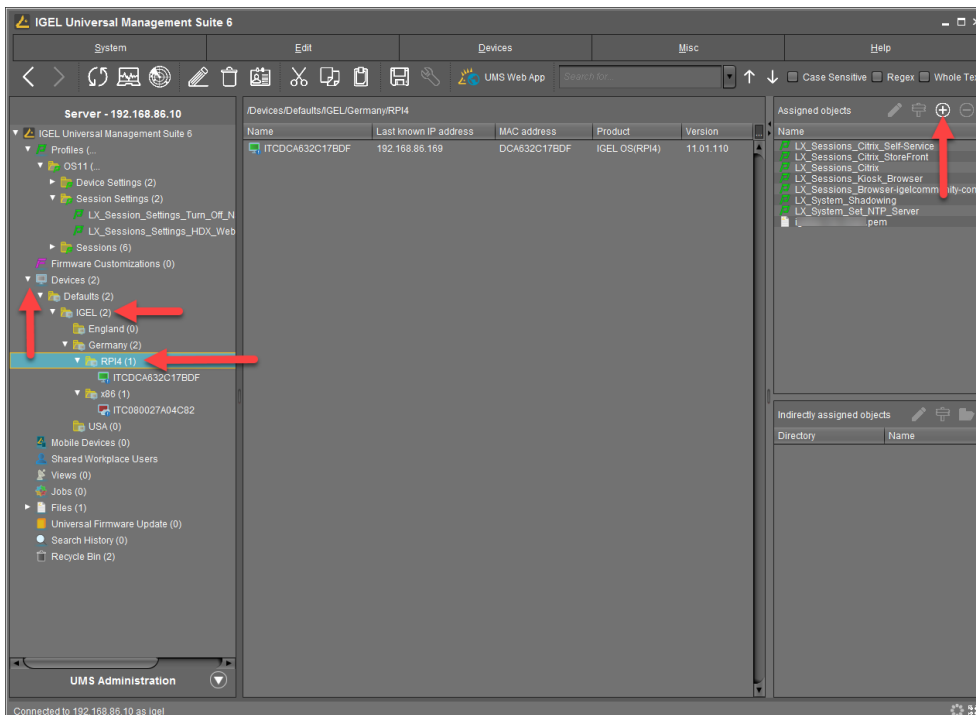
- Enter a descriptive name for the profile in the **Profile Name** text box. Click to expand the **Based On** combo box and click to select the **IGEL OS(RPI4)** entry. Once finished, click the **Ok** button to continue.



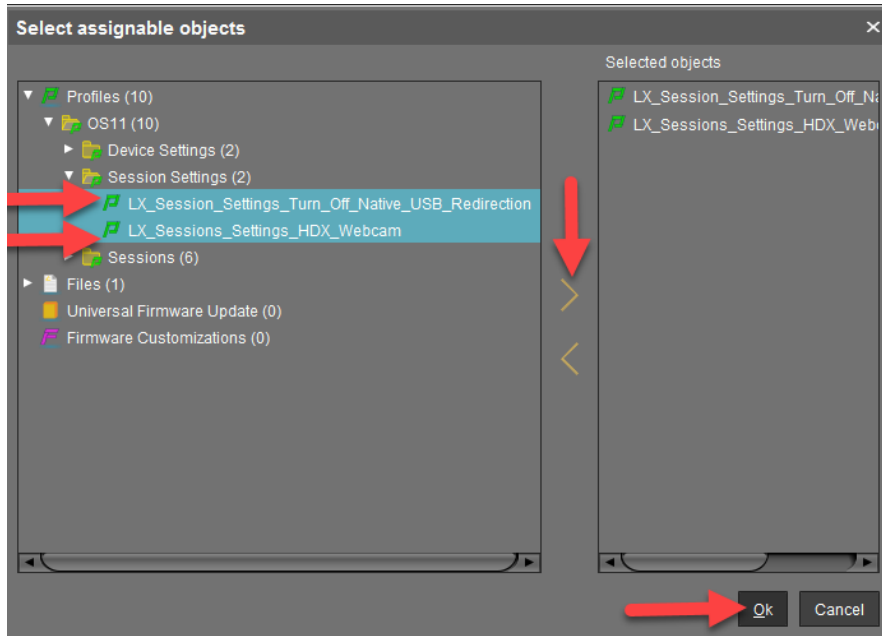
- Click to expand **Session > Citrix > Citrix Global** folders and click to select the **HDX Multimedia** node. Click to enable the **HDX RealTime Webcam Redirection** checkbox and then check to enable it. Next, click each of the checkboxes to the right of the screen to enable them. You can keep the settings as is.



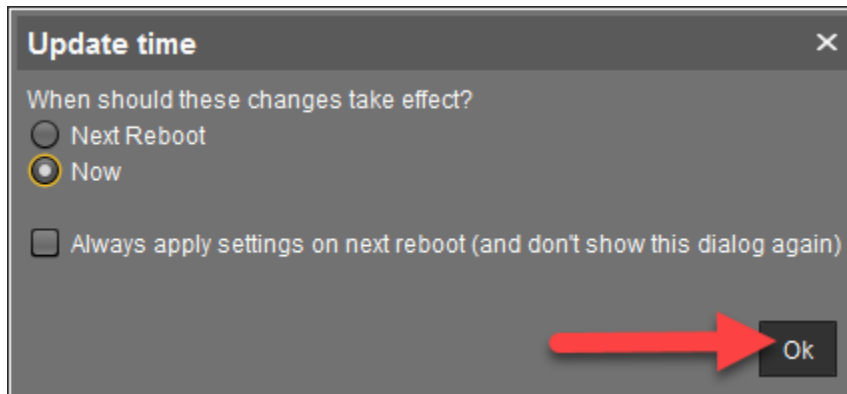
- Instead of adding the profile to the device, let's try something different. Let's add the device to the new profiles. Click to expand the **Devices** folder and click to select the folder containing the devices or the device(s). Click the **+** button on the top right of the IGEL UMS.



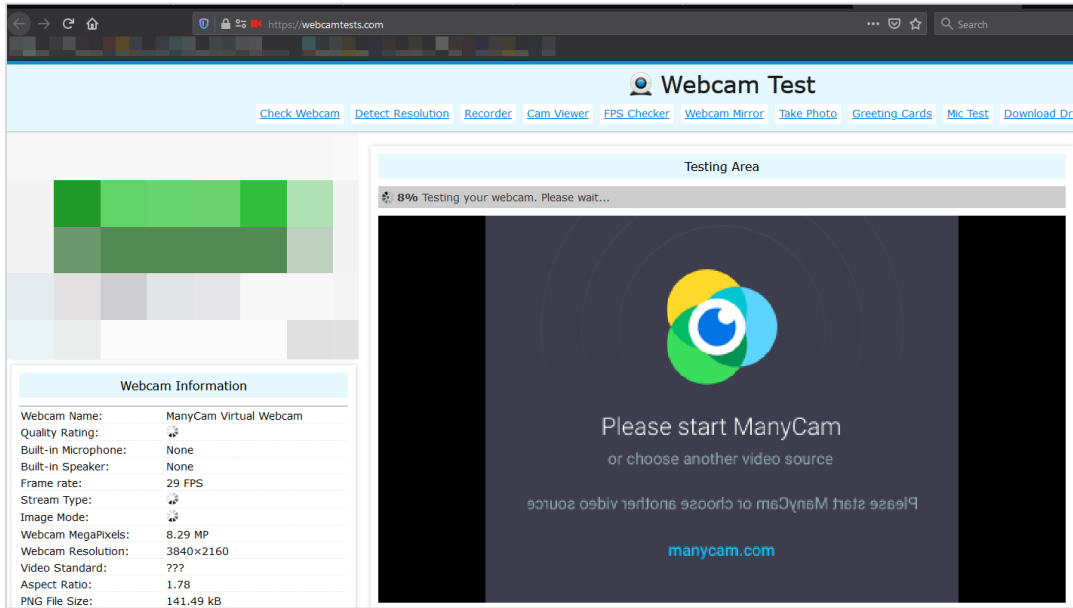
- The **Select assignable objects** window opens. Please select the desired folders or profiles and click the > button to move it to the **Selected objects** section. Once you have defined the objects to assign to the devices, you can click the **Ok** button to save it.



- You are prompted to specify at what time the new settings will take effect. For this example, click the **Now** radio button and click **Ok** to apply this change in real-time.



10. As stated above, only 32-bit applications support webcam redirection. To test your webcam, check out <https://webcamtests.com/>.



Appendix

1. Unsupported Feature List

The following features found in the IGEL OS for x86 architecture are currently not available in the IGEL OS(RPI4) for NComputing RX420(IGEL). Stay tuned. IGEL will be adding features and functionality as soon as possible.

Only available in IGEL OS x86:

Session	Citrix Channels
Browser Firefox	H264
IBM iAccess	Devicetrust
Imprivata	Diktamen
Media Player	Dlock
Horizon View	Drivelock
Powerterm	Digitalpersona
RDP / RDWeb	Fabulatech Scanner and USB
WVD	Grundig
NXClient	RTME
Redhat Spice	Lakeside
Thinlinc	Nuance
Twox	Olycom
VNC Viewer	Olympus
Deskmate	Philips Speechmkike
Xsessions	Stepover
Epos Audio	Kofax
	Signotec
	Cisco JVDI
	Cisco WebexMeetings
	Cisco Teams
	Teams Optimization
	Zoom Optimization
	Flash Redirection"

Accessories	Devices
Identify Monitors	Devices Serial configuration
Systemviewer	Jabra Xpress
Touchscreen calibration	ThinPrint
Nettools	Signature pads
In Session control bar	Printerlogic

Smartcard

cryptovision: use secure PIN entry
 Secure PIN entry for SafeSign
 90meter
 cryptovision sc/interface
 Gemalto SafeNet
 Gemalto IDPrime
 Athena IDProtect
 Secmaker Net iD
 A.E.T. SafeSign

System

Debug Partition
 Devices Scanner Daemon
 Monitoring Agent
 Filebeat
 Virtualbox
 Cron
 Bootsplash
 Touchpad Config
 Touchscreen Config

VPN

Openconnect
 Genucard VPN

2. Additional Resources

Please refer to the following essential IGEL technical resources to learn more.

Getting Started Guides:

- [IGEL-Getting-Started-Guide.zip](#)
- [All IGEL Step-by-Step Guides](#)

IGEL Community:

- [Join IGEL Community on Slack](#)
- [IGELCommunity.com](#)
- [IGEL Community Blog](#)
- [IGEL Community Message Archives](#)
- [IGEL Community Videos – Technical How-To Videos](#)
- [IGEL Community on GitHub](#)

Web Resources:

- [IGEL Knowledge Base](#)
- [IGEL OS\(RPI4\) KB Home](#)
- [IGEL OS 11 Manual](#)
- [IGEL Universal Management Suite \(UMS\) Manual](#)
- [IGEL Cloud Gateway \(ICG\) Manual](#)
- [IGEL Licensing](#)
- [Linux Third-Party Hardware Database](#)
- [IGEL Community HCL](#)
- [How to Secure Endpoints with IGEL OS White Paper](#)
- [How to Use a DigiCertificate SSL Certificate with ICG](#)