

# IGEL OS Firmware Updates

STEP-BY-STEP GUIDE



[www.igelcommunity.com](http://www.igelcommunity.com)

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# NOTICE

*Written and Maintained by Douglas A. Brown - [brown@igel.com](mailto:brown@igel.com)*

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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! However, please do not Sauté it!

## Special Thanks!

This project is a community activity and a byproduct of many folks who gave of their time to contribute tech recommendations, proofing, testing and, much appreciated support. A huge thank you from me to them!

So, shines a good deed in a weary world!

Sébastien Pérusat

Ian Anderson

Fredrik Brattstig

Christian Drieling

Timco Hazelaar

Carl Behrent

Falk Heiland

Daniel Ugarte

If you are interested in seeing your name in lights, or more appropriately, helping your fellow techie by contributing to this resource, please contact us! After all, **together we are better!**

## Changelog

This project is a work in progress. Below is the list of changes added in each version:

Date	Version	Description of Changes
4/11/2018	1.0	<ul style="list-style-type: none"><li>▪ First Version</li></ul>
5/5/2018	1.01	<ul style="list-style-type: none"><li>▪ Updated <a href="#">How to Update Existing Profiles</a> section</li></ul>
9/17/2018	1.02	<ul style="list-style-type: none"><li>▪ Updated eDocs links to new kb.igel.com</li></ul>

## Roadmap!

The following items are currently scheduled to be added to future versions of this project. If you would like to make a recommendation for this list or are interested in contributing, please contact us at [igelcommunity@igel.com](mailto:igelcommunity@igel.com).

- How to update locally using a USB Drive – Learn more here  
<https://kb.igel.com/igelos/en/updating-the-firmware-using-a-usb-storage-device-2721232.html>
- How to update using the Buddy Feature. Learn more here  
<https://kb.igel.com/igelos/en/buddy-update-2720563.html>

## Table of Contents

<b>1.</b>	<b>IGEL OS Firmware Updates .....</b>	<b>8</b>
<b>2.</b>	<b>IGEL OS Firmware Versions Explained.....</b>	<b>9</b>
<b>3.</b>	<b>Update IGEL OS Firmware via the UMS .....</b>	<b>11</b>
<b>4.</b>	<b>Update IGEL OS Firmware via the ICG .....</b>	<b>22</b>
<b>4. 1.</b>	<b>Download IGEL OS Firmware .....</b>	<b>23</b>
<b>4. 2.</b>	<b>Create Firmware Repository .....</b>	<b>26</b>
4. 2. 1	How to Configure AWS S3 as the Firmware Repository .....	27
4. 2. 2	How to Configure Citrix ShareFile as the Firmware Repository .....	36
4. 2. 3	How to Configure Microsoft IIS FTP as the Firmware Repository ....	41
<b>5.</b>	<b>How to Create a Firmware Update Profile .....</b>	<b>53</b>
<b>6.</b>	<b>How to Deploy a Firmware Update .....</b>	<b>61</b>
<b>6. 1.</b>	<b>How to Manual Deploy from UMS .....</b>	<b>62</b>
<b>6. 2.</b>	<b>How to Automate Updates on Shutdown .....</b>	<b>64</b>
<b>6. 3.</b>	<b>How to Schedule Updates using Jobs &amp; Views .....</b>	<b>66</b>
<b>7.</b>	<b>How to Update Existing Profiles .....</b>	<b>78</b>

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## 1. IGEL OS Firmware Updates

IGEL OS updates are delivered via downloadable firmware available free from the IGEL web site. The IGEL UMS ships with functionality to automate the process of updating IGEL devices. Depending on how your devices connect to the UMS defines how they are updated, you have two possible choices.

### Updating IGEL OS devices with a direct connection to the UMS

If your IGEL OS-based devices are on a routable network and can connect directly to the UMS, you can use the **Universal Firmware Update** feature of the UMS.

The following steps details how to update the IGEL OS using the UMS **Universal Firmware Update** feature:

- [How to Update the IGEL OS Firmware via the UMS](#)
- [How to Deploy Firmware Update](#)

### Updating IGEL OS devices that connect via an IGEL Cloud Gateway (ICG)

If the IGEL OS-based devices you wish to upgrade is connected to the UMS via the IGEL Cloud Gateway (ICG), the traditional UMS **Universal Firmware Update** feature does not work as the IGEL end-points cannot download the firmware file from the UMS file repository. In this case, you are required to deploy the firmware updates in a fashion where the IGEL OS can download the files. To do this, IGEL provides the ability to create a UMS profile that allows the IGEL OS to be configured to download the firmware update via FTP, SFTP, HTTP, HTTPS, or FTPS.

The following steps detail how to update the IGEL OS when connecting to the UMS via an ICG server:

- [Update IGEL OS Firmware via the ICG](#)
  - [Download IGEL OS Firmware](#)
  - [Create Firmware Repository](#)
    - [How to Configure AWS S3 as the Firmware Repository](#)
    - [How to Configure Citrix ShareFile as the Firmware Repository](#)
    - [How to Configure Microsoft IIS FTP as the Firmware Repository](#)
  - [How to Create a Firmware Update Profile](#)
- [How to Deploy a Firmware Update](#)

## 2. IGEL OS Firmware Versions Explained

Currently, IGEL ships different versions of the IGEL OS firmware based on the different types of devices you own. This can be somewhat confusing as to why but it comes down to the device drivers included in each image. This allows IGEL to ship the smallest, yet most complete image possible.

Today, there are mainly three types of firmware versions you would be interested in, Windows, LX, and OS. Of course, the Windows version is the Microsoft Windows 10 IoT version whereas the LX and OS version is the IGEL OS Linux operating system. Both the LX and OS firmware contain the same feature sets. The LX 10.03.500 is the same as OS 10.03.500; the only difference is the type of device it is deployed on. LX is used on IGEL hardware based thin clients, and the OS version is used on the IGEL UDC and UD Pocket.

You will also notice a reference to v5 and v10. The v5 version is a legacy version of the IGEL OS, and it reached end-of-life in fall 2017. IGEL supports all EOL firmware for up to three years from the EOL date. **The current version of IGEL OS Linux operating system (LX+OS) is v10.**

The following table lists the current in-use firmware versions:

Prefix	Usage
LX	IGEL hardware based thin clients running the Linux version of the IGEL OS. If you are running an IGEL hardware-based thin client and it is not running Windows, it is a good bet this is the firmware you use to upgrade your device(s). Download at <a href="http://www.myigel.biz/index.php?dir=IGEL_UNIVERSAL_DESKTOP_FIRMWARE/LX/">http://www.myigel.biz/index.php?dir=IGEL_UNIVERSAL_DESKTOP_FIRMWARE/LX/</a>
IZ	Software license locked down version of the LX operating system. It is the same IGEL OS, running on the same hardware, the feature sets are just locked away. There are three different versions of IZ device, Citrix, Microsoft RDS, and VMware Horizon. Download at <a href="http://www.myigel.biz/index.php?dir=IGEL_ZERO/">http://www.myigel.biz/index.php?dir=IGEL_ZERO/</a>
OS	IGEL Universal Desktop Converter (UDC) and IGEL UD Pocket. Download at <a href="http://www.myigel.biz/index.php?dir=IGEL_UNIVERSAL_DESKTOP_CONVERTER/">http://www.myigel.biz/index.php?dir=IGEL_UNIVERSAL_DESKTOP_CONVERTER/</a>
W10	IGEL hardware based thin clients running Windows 10 Enterprise IOT. Download at <a href="http://www.myigel.biz/index.php?dir=IGEL_UNIVERSAL_DESKTOP_FIRMWARE/W10/">http://www.myigel.biz/index.php?dir=IGEL_UNIVERSAL_DESKTOP_FIRMWARE/W10/</a>

The following table lists the legacy firmware versions:

Prefix	Usage
CE	Windows CE based version (not supported any longer) Download at <a href="http://www.myigel.biz/index.php?dir=IGEL_UNIVERSAL_DESKTOP_FIRMWARE/CE/">http://www.myigel.biz/index.php?dir=IGEL_UNIVERSAL_DESKTOP_FIRMWARE/CE/</a>
ES	Windows Embedded Standard 2009 (XP) Download at <a href="http://www.myigel.biz/index.php?dir=IGEL_UNIVERSAL_DESKTOP_FIRMWARE/ES/">http://www.myigel.biz/index.php?dir=IGEL_UNIVERSAL_DESKTOP_FIRMWARE/ES/</a>
LX_Soc	Legacy ARM-based IGEL thin clients (not supported any longer) Download at <a href="http://www.myigel.biz/index.php?dir=IGEL_UNIVERSAL_DESKTOP_FIRMWARE/LX_SoC/">http://www.myigel.biz/index.php?dir=IGEL_UNIVERSAL_DESKTOP_FIRMWARE/LX_SoC/</a>
W7	IGEL hardware based thin clients running Windows 7 Embedded Standard. Download at <a href="http://www.myigel.biz/index.php?dir=IGEL_UNIVERSAL_DESKTOP_FIRMWARE/W7/">http://www.myigel.biz/index.php?dir=IGEL_UNIVERSAL_DESKTOP_FIRMWARE/W7/</a>
W7+	IGEL hardware based thin clients running Windows 7 Embedded Standard with larger storage adapter than the 4GB in W7. This is the same version of Windows 7 Embedded as in the W7 firmware expect the size of the image is larger to accommodate the larger storage sizes of some devices. Download at <a href="http://www.myigel.biz/index.php?dir=IGEL_UNIVERSAL_DESKTOP_FIRMWARE/W7%2B/">http://www.myigel.biz/index.php?dir=IGEL_UNIVERSAL_DESKTOP_FIRMWARE/W7%2B/</a>

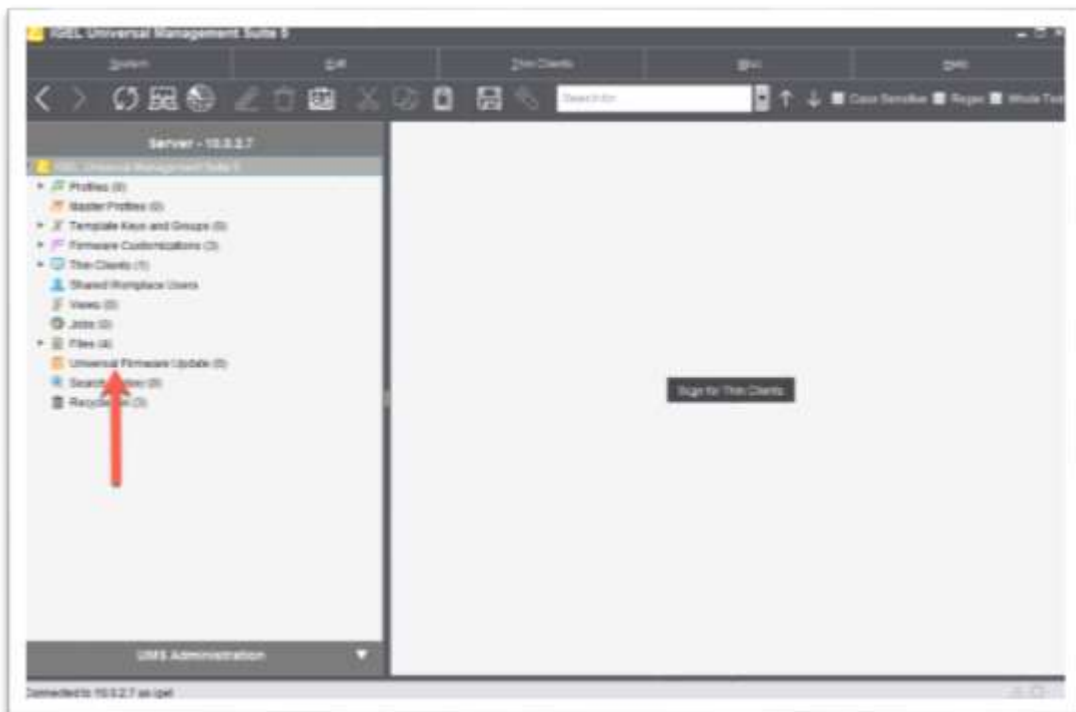
Learn how IGEL versioning works and what the identification numbering means - <https://kb.igel.com/licensesmore/what-is-the-meaning-of-igel-release-names-2271574.html>

### 3. Update IGEL OS Firmware via the UMS

If the devices you wish to update connects to the IGEL UMS via a routable network, then you can use the UMS's **Universal Firmware Update** feature.

The following defines how to update the IGEL OS firmware using the UMS Universal firmware update feature:

1. Right-click the **Universal Firmware Update** node, located on the bottom left menu of the UMS.

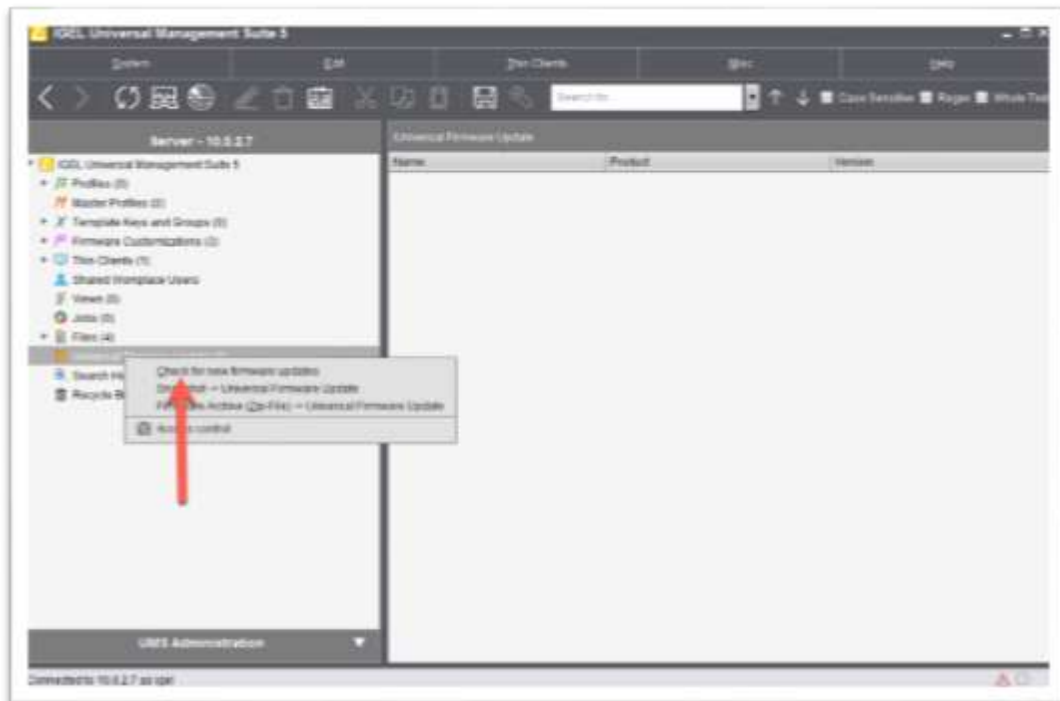


- The UMS offers two different methods for updating the IGEL OS firmware, automatic and manual.

To automatically update the IGEL OS, the UMS is required to have a working Internet connection. The manual method does not need connectivity as you can download the firmware from IGEL's website on another machine and upload it manually to the UMS.

If you chose to update the UMS firmware repository manually, skip to step 6.

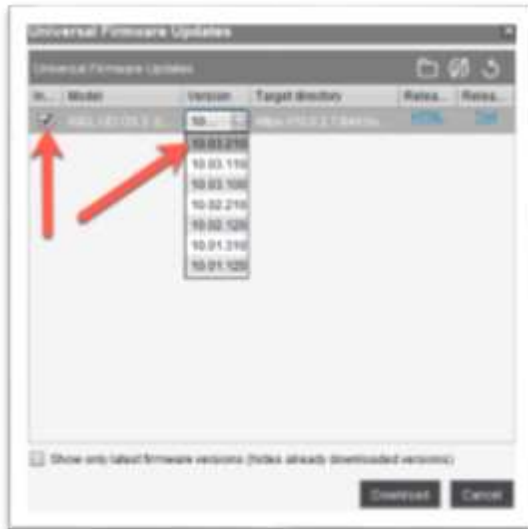
To automatically update the firmware, please click the **Check for new firmware updates** link from the dropdown list.



3. The **Universal Firmware Updates** window opens, and the UMS starts a process to search for the IGEL OS firmware version families you have registered in the UMS. For example, if you have the IGEL OS UDC or UP Pockets registered, the UMS downloads the correct firmware for the corresponding IGEL OS firmware family.

Click to check the **Include** check box for the firmware model (family) and click the version dropdown list to select the version(s) you wish to add to the repository.

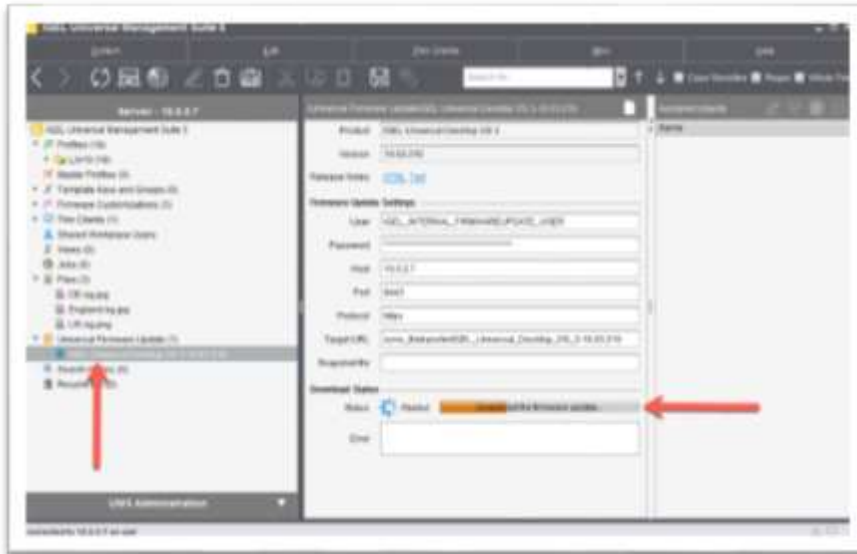
Click the **Download** button to start the download process.



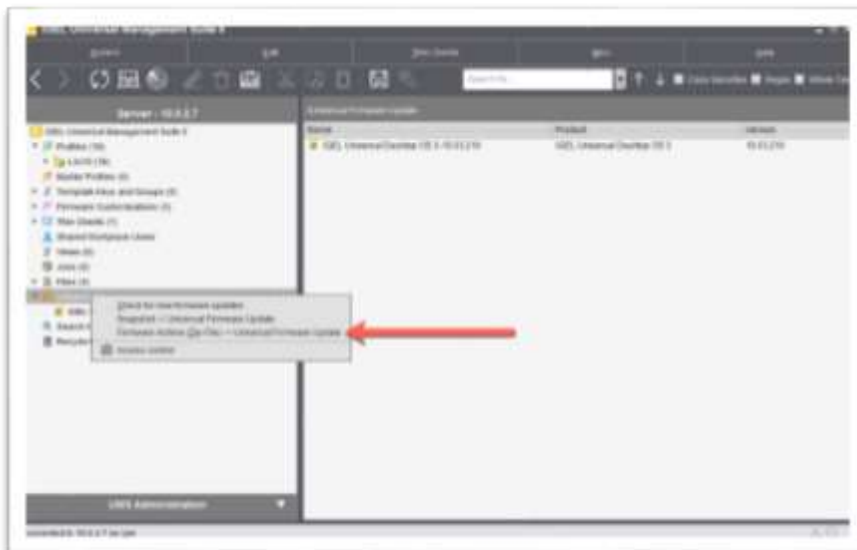
4. The update process' status is changed to **Started**, you are off and running. This process could take a bit of time, so please click the **OK** button to continue.



- You are brought back to the UMS. The new firmware is added to the list of possible updates in the left menu as it continues to download. Keep an eye on the **Download Status** section, but don't worry if the status bar does not move, it IS working, trust us.

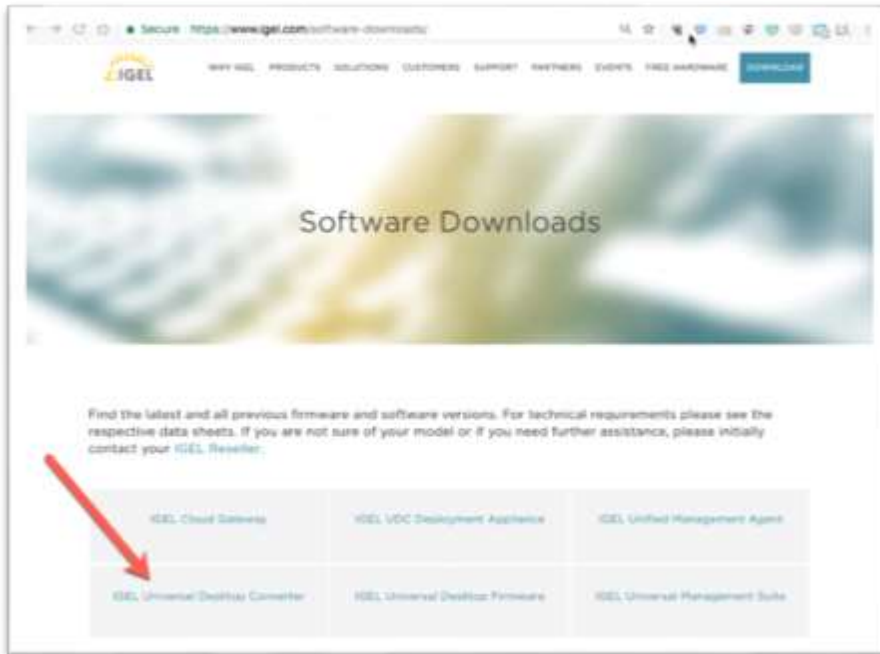


- If you would like to download the IGEL OS firmware manually, right click on **Firmware Archive (Zip-File) -> Universal Firmware Update**. Though, before you go to the next step, you need to download the firmware from the IGEL web site. Let's do that now, and then you can flip back to the UMS to continue.

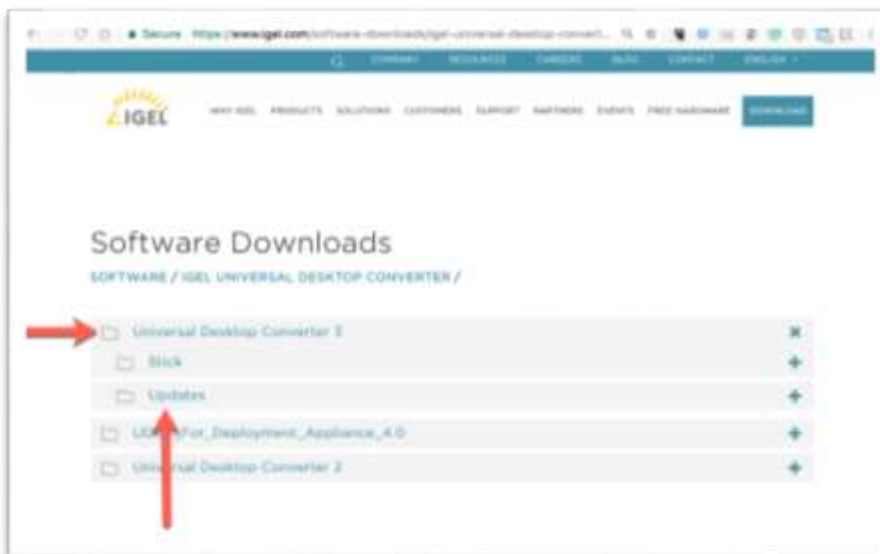


7. Browse to <https://www.igel.com/software-downloads/> to download the desired IGEL OS firmware version. Notice the different software downloads available. Depending on which devices you own will define which firmware you download and then add to the UMS update file repository.

In this case, you want to update the IGEL OS for the UDC. Click the **IGEL Universal Desktop Converter** link to continue.

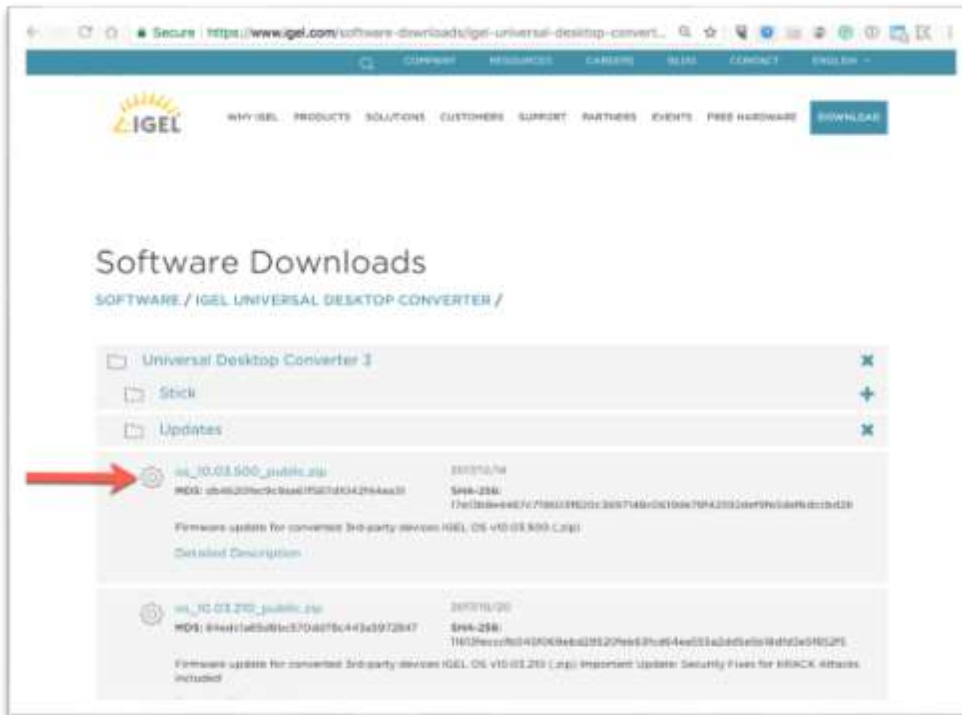


8. Click to expand the **Universal Desktop Converter 3** folder and click the **Updates** folder link.

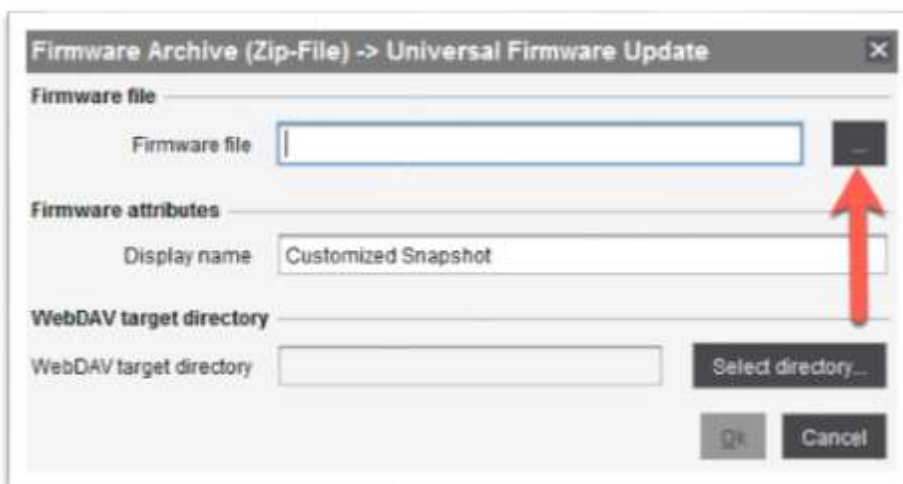




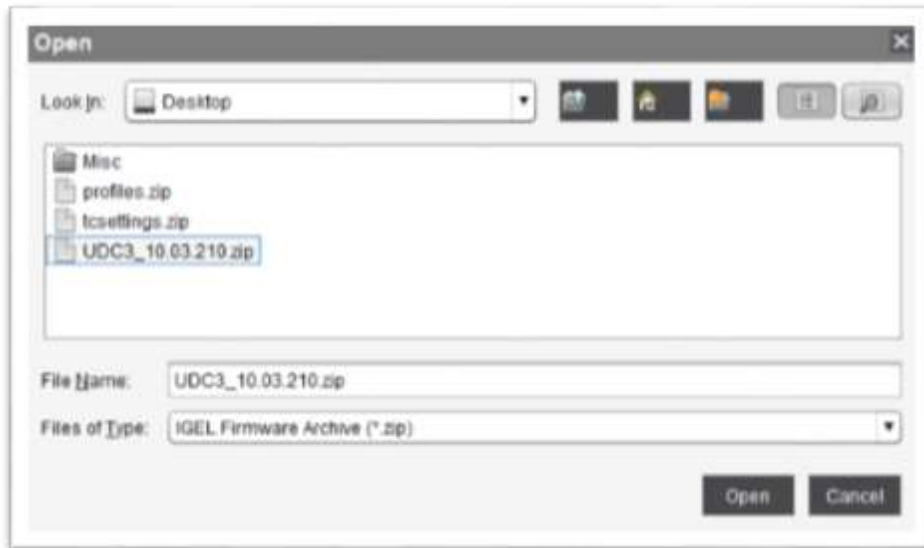
9. Click to download the desired firmware versions and save it to a location where it is accessible. If you are doing this on your local machine, you are required to copy the firmware file to UMS server to be imported into the UMS firmware repository.



10. Once you have downloaded and copied the desired firmware file to the UMS server, you can flip back to the UMS. The **Firmware Archive (Zip-File) -> Universal Firmware Update** window opens. Click the ... button to start the process of uploading the IGEL OS firmware image you downloaded above.

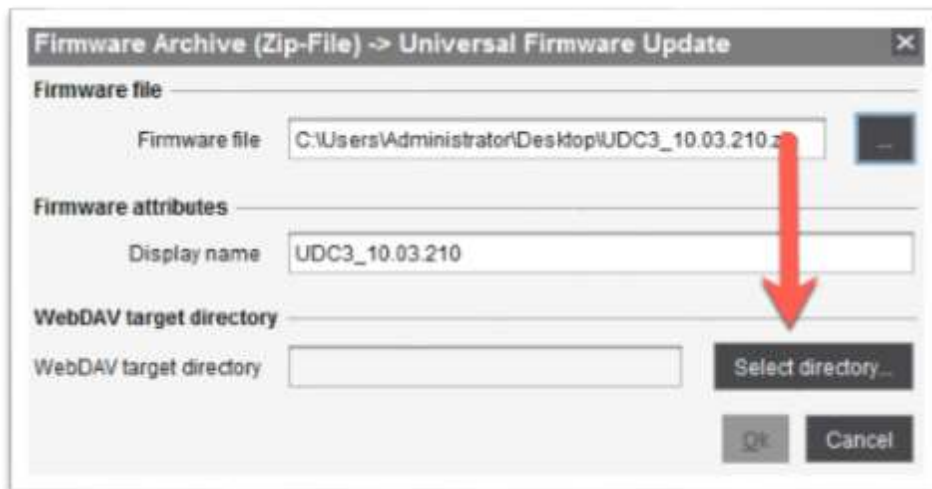


11. You are brought to the **Open** window. Browse to the location of the downloaded firmware, select it and click the **Open** button to continue.

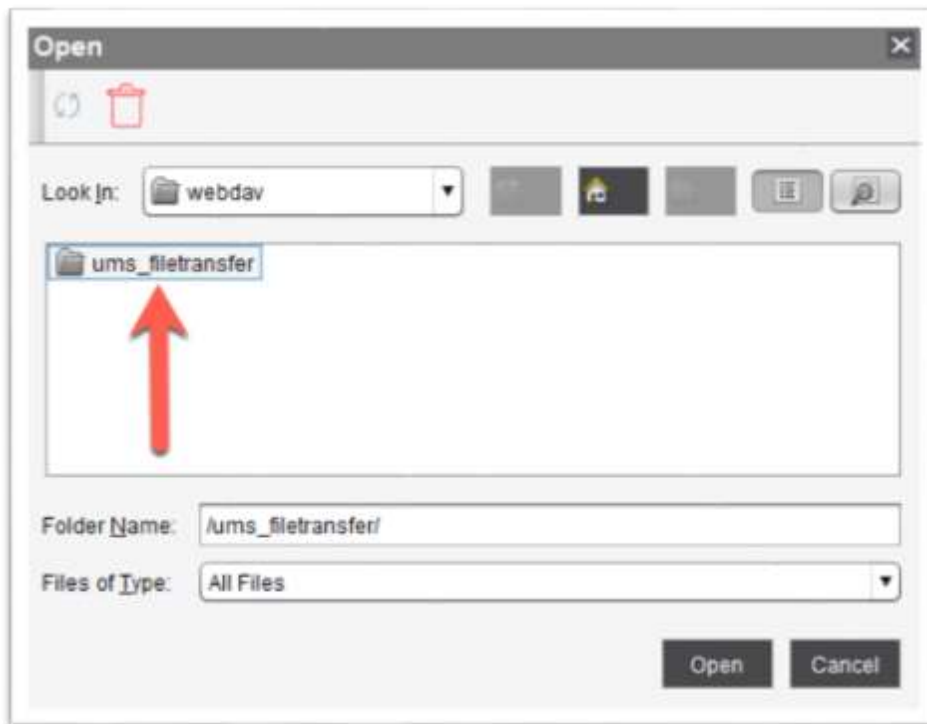


12. You are brought back to the **Firmware Archive (Zip-File) -> Universal Firmware Update** window where you can change the name that is displayed in the UMS for this particular firmware update in the **Display name** text box. It is highly recommended to give it a friendly name so that it can be easily be identified.

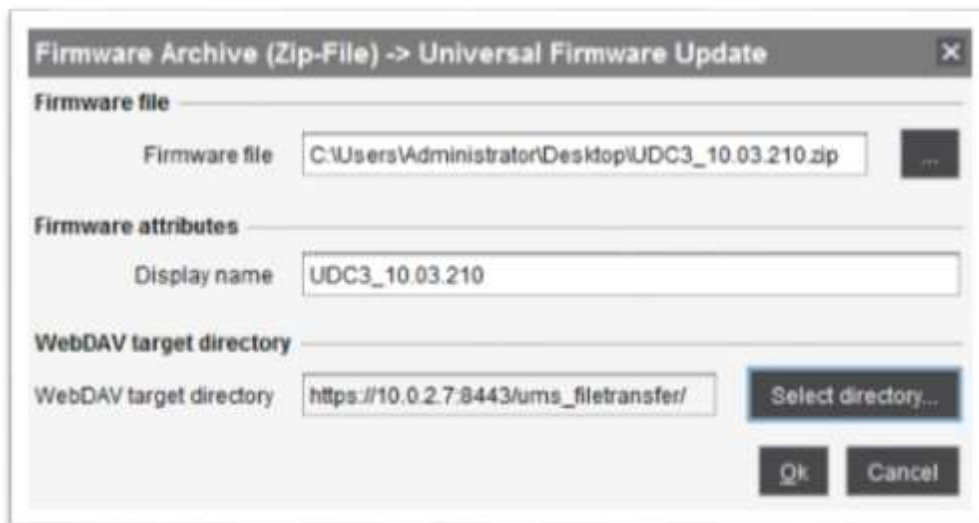
Next, you are required to enter the directory where the firmware upload is to be stored. Click the **Select directory** button to continue.



13. The UMS ships with a built-in web server for numerous uses, one being the deployment of the IGEL OS firmware images. Select the **ums\_filetransfer** entry and click the **Open** button to continue.



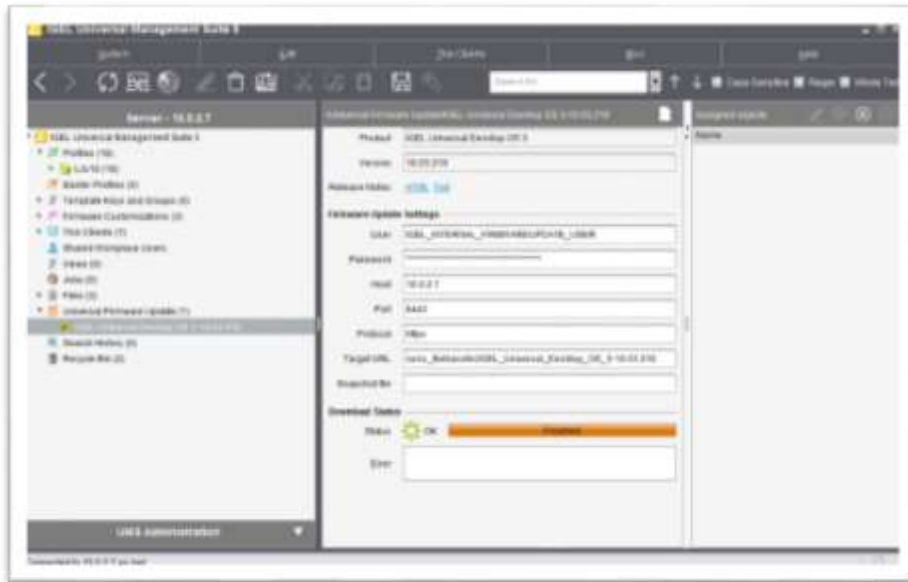
14. You are brought back to the **Firmware Archive (Zip-File) -> Universal Firmware Update** window. Verify all the settings are as desired and click the **OK** button to start the process of uploading the firmware.



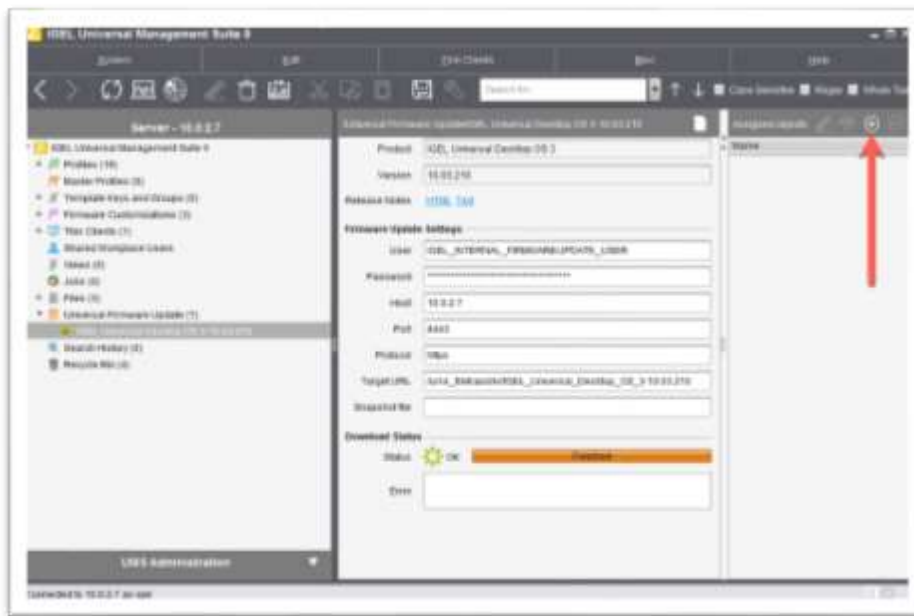
15. The UMS start the process of uploading the selected firmware files. Hit the F5 Key

The download status button is not that great as it does not accurately show the progress. Trust us; it will finish, if not you will see **Failed** as the status. A failed download could happen for a few reasons, lack of storage space and failure to communicate with the IGEL web site.

or the **Refresh** button to update the progress bar.



16. The next step is to assign the uploaded IGEL OS firmware to the devices you wish to update. Click the + icon in the **Assigned objects** pane.



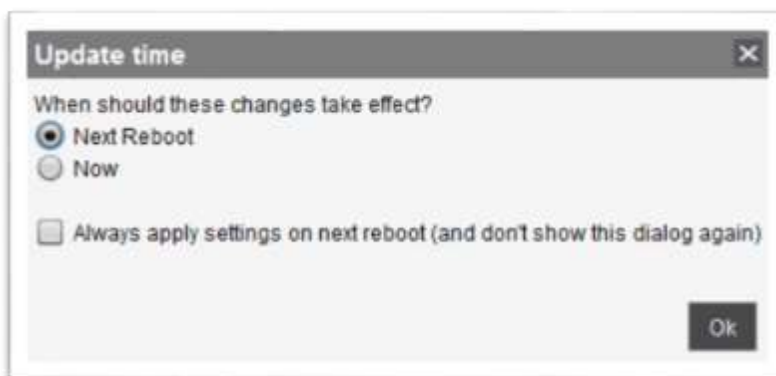
17. The **Select assignable objects** window opens allowing you to select the devices you want to update. You can assign firmware to single devices or folders of devices within the directory structure. Click the desired folders or devices you want to upgrade and click the > button to move them to the **Selected objects** pane.

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

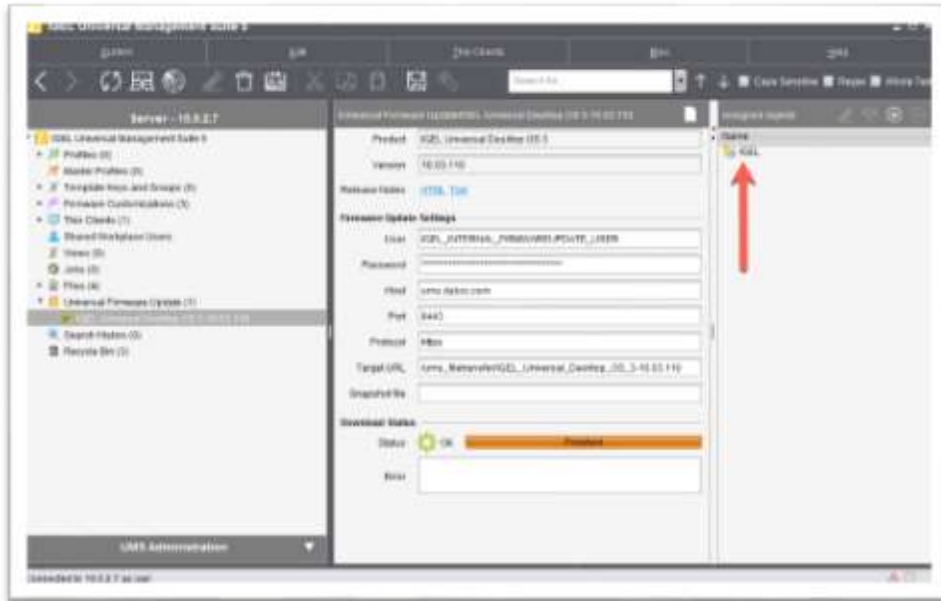


18. As with profiles, you can define at which time you wish to push the instruction set to configure the device to download the firmware when triggered.

Select the desired radio button and click the **OK** button to continue.



19. You are brought back to the UMS and will notice the folders and devices you assigned to the selected IGEL OS firmware are listed in the **Assigned objects** pane.



You have successfully configured the firmware update. The next step is to define how and when you wish the firmware to be deployed to the desired IGEL OS devices. Please skip to the [How to Deploy a Firmware Update](#) section.

## 4. Update IGEL OS Firmware via the ICG

As discussed above, if you have IGEL devices connected to the IGEL UMS via the ICG you are not able to use the traditional **Universal Firmware Update** UMS feature. You are required to deploy the updates using a UMS profile. The firmware update files are required to be stored in a location that your devices can connect to and download from.

The first thing you need to decide upon is where to store the IGEL firmware files. As stated above, the data is required to be accessible from the client. You can place them in any location that allows the IGEL OS to download them directly. IGEL supports FTP, SFTP, HTTP, HTTPS, FTPS, or File. In this document, we have detailed how to store the firmware updates on AWS S3, Citrix ShareFile, or a traditional FTP server, in this case, a Microsoft IIS FTP server.

Once you have created the required firmware file repository, you are required to develop a simple UMS profile and then assign it to the devices you wish to update. It is just that simple.

This section is broken down into the following steps, depending on your desired configuration:

- **Download IGEL OS Firmware**
- **Create Firmware Repository**
  - [How to Configure AWS S3 as the Firmware Repository](#)
  - [How to Configure Citrix ShareFile as the Firmware Repository](#)
  - [How to Configure Microsoft IIS FTP as the Firmware Repository](#)
- **How to Create a Firmware Update Profile**
- **How to Deploy Firmware Update**
  - [How to Manual Deploy from UMS](#)
  - [How to Automate Updates on Shutdown](#)
  - [How to Schedule Updates using Jobs & Views](#)
- **How to Update Existing Profiles**

## 4. 1. Download IGEL OS Firmware

Before you get too far, you need to download the appropriate firmware version for the type of device(s) you wish to update. Please refer to the previous section for more information on which firmware version is right for you.

For this document, we are updating the IGEL UDC or UD Pocket thus the **OS** firmware family is the correct version for this use-case.

The following defines how to download the IGEL OS firmware for the UDC/UD Pocket:

1. IGEL has recently updated the IGEL website and the Software Downloads section. To download the latest OS version firmware, browse to the following web page <https://www.igel.com/software-downloads/> and click the **IGEL Universal Desktop Converter** link.





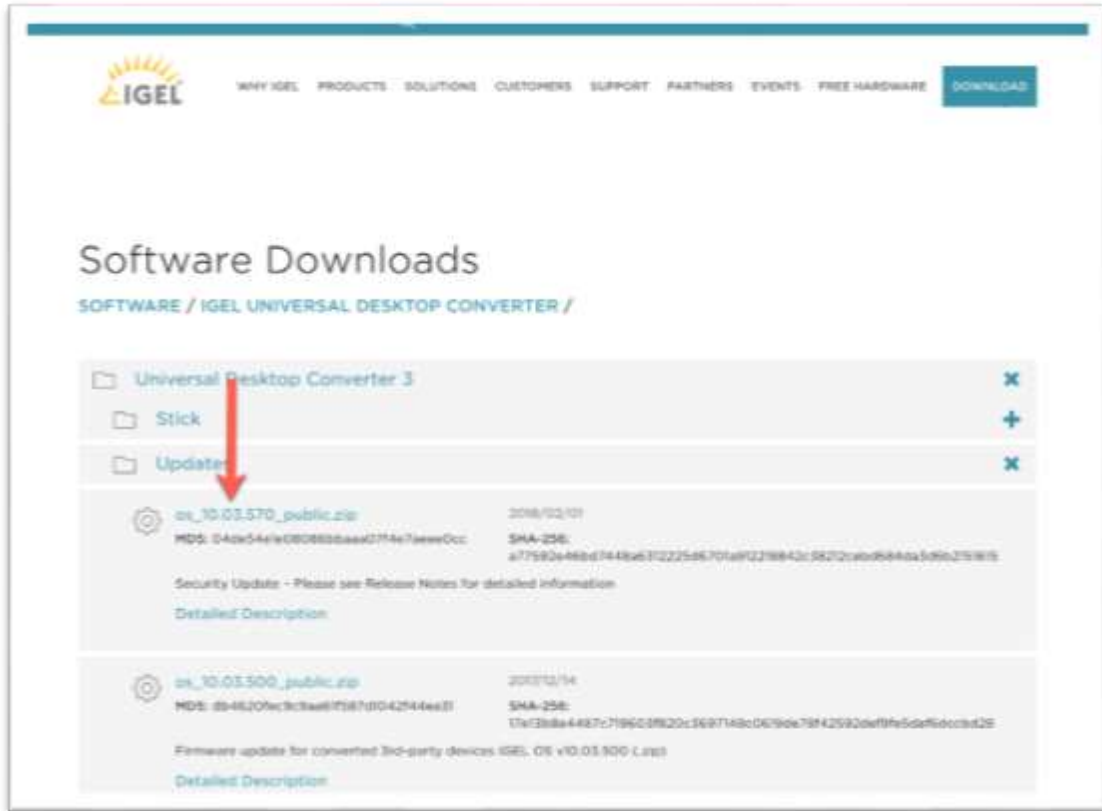
2. Click to expand the **Universal Desktop Converter 3** link.



3. Click to expand the **Updates** link



4. You are presented with a list of the most recent versions of the IGEL OS firmware. Click to download the desired version(s) and save them to a location accessible as you will extract and copy the firmware files to the desired download location in a bit.



## 4. 2. Create Firmware Repository

For the IGEL OS to download the required firmware files, they need to be accessible. This can be done using FTP, SFTP, HTTP, HTTPS, or FTPS. That is up to you.

For this document, we have tried to detail how to use the most common solutions, AWS, Citrix ShareFile, and a standard FTP server. You only need to choose one.

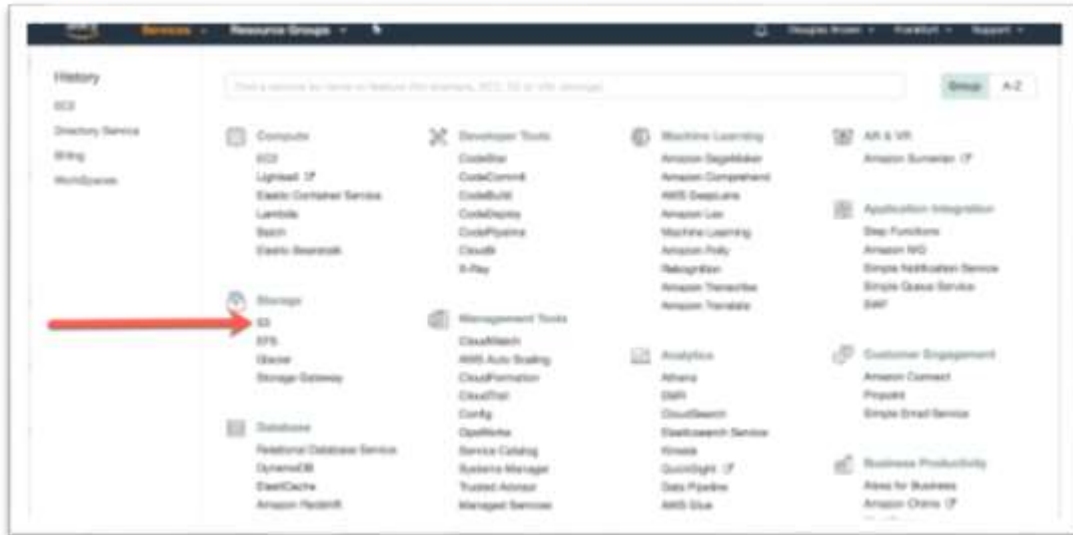
The following section is broken down into the following options:

- [How to Configure AWS S3 as the Firmware Repository](#)
- [How to Configure Citrix ShareFile as the Firmware Repository](#)
- [How to Configure Microsoft IIS FTP as the Firmware Repository](#)

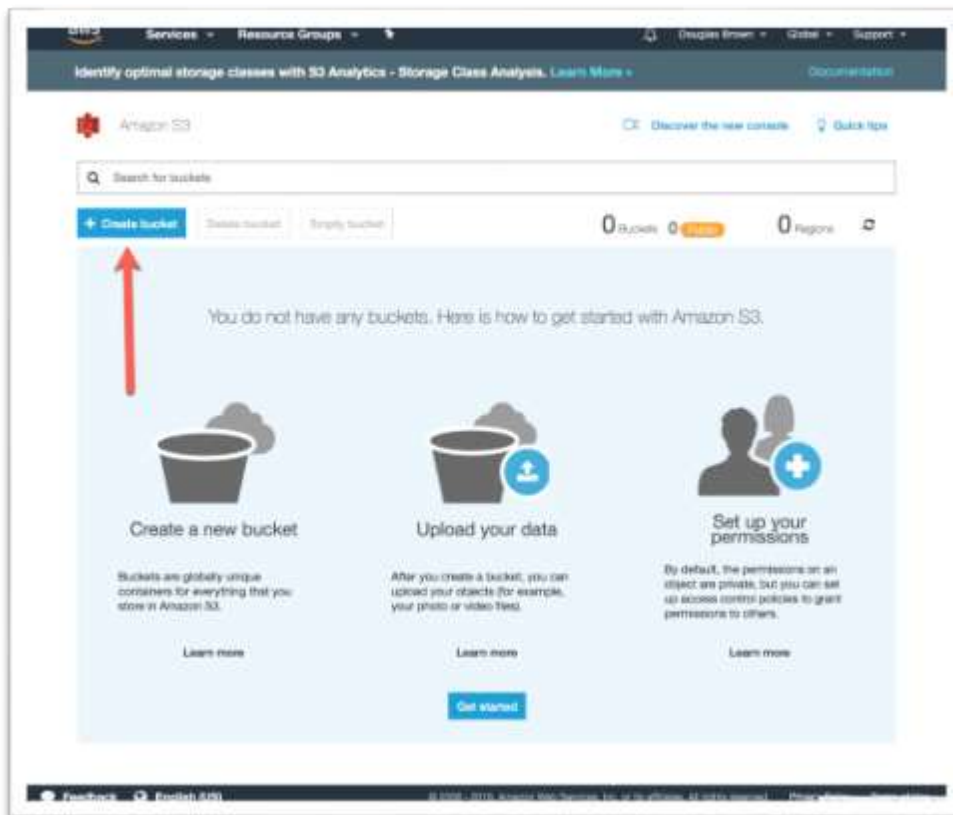
## 4. 2. 1 How to Configure AWS S3 as the Firmware Repository

If you have chosen to use AWS S3 as the firmware repository, please follow the steps below to configure a new AWS S3 Bucket:

1. Browse to the AWS portal and log in. From the **Services** menu click the **S3** link.



2. Click the **Create bucket** button to continue.



3. The next step is to create the S3 Bucket. You are required to enter a bucket name. The Bucket name needs to be a unique DNS-compliant name. This name must be unique across all existing bucket names in Amazon S3. After you create the bucket, you cannot change the name. This name is visible in the URL that points to the objects that you are going to put in your bucket, so please choose wisely.

For more information about naming buckets, please refer to the [Rules for Bucket Naming](#) in the **Amazon Simple Storage Service Developer Guide**.

Next, select the Region the firmware files are stored. If you have IGEL devices located across the globe, you will want to create multiple buckets and thus numerous profile configurations for each region. For now, select the region that is closest to your devices.

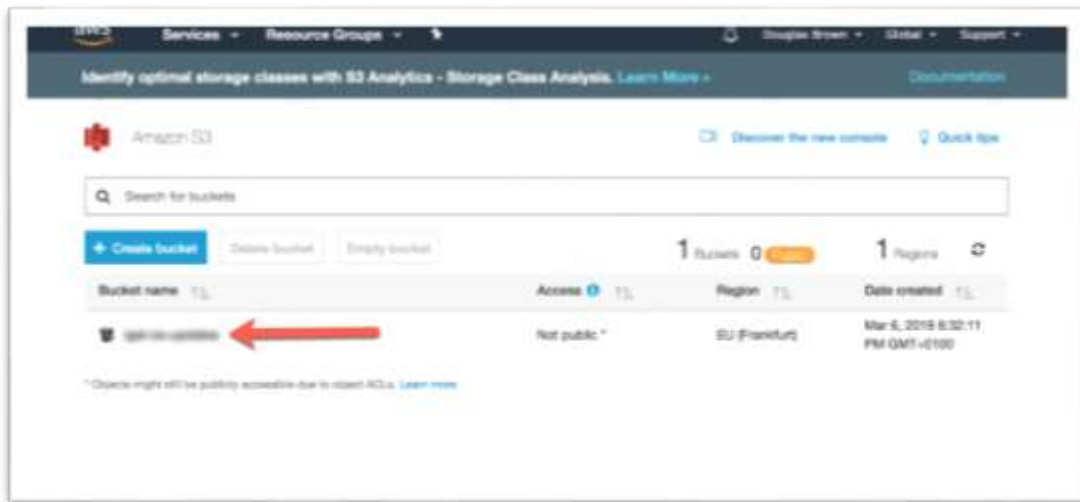
Click the **Create** button to create the new S3 storage Bucket.

The screenshot shows the 'Create bucket' wizard in the AWS Management Console. The wizard is in the 'Name and region' step. It shows a 'Bucket name' field with a red arrow pointing to it, a 'Region' dropdown menu with 'EU (Frankfurt)' selected and a red arrow pointing to it, and a 'Copy settings from an existing bucket' dropdown menu with 'You have no buckets' selected. At the bottom, there are 'Create', 'Cancel', and 'Next' buttons, with a red arrow pointing to the 'Create' button.

4. Your new bucket is created, and you will see it in the list of S3 Buckets.

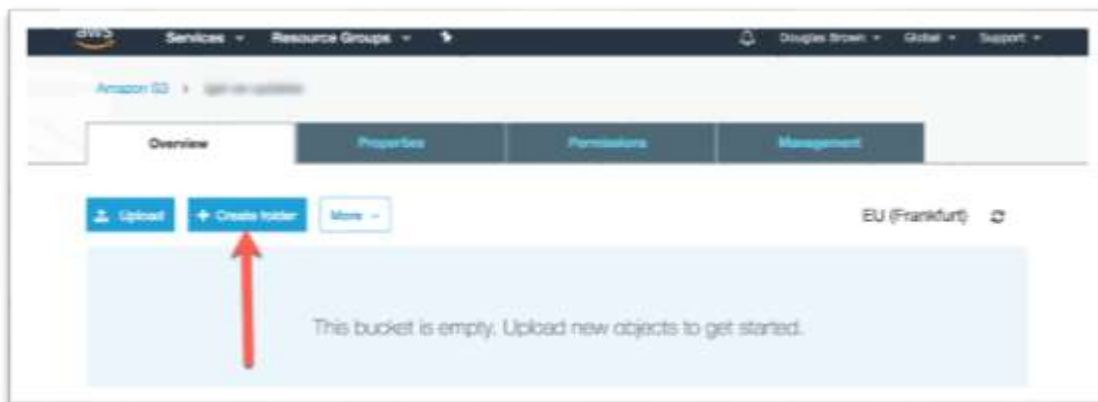
You will notice, we have blurred the name of the bucket. This is due to the fact the bucket name is used in the URL you will configure the IGEL OS to download the updates from. If this URL is publicly available, then anyone can use it to download their updates and thus your S3 storage bill could become rather large. You are duly warned.

Click the bucket name link to continue.



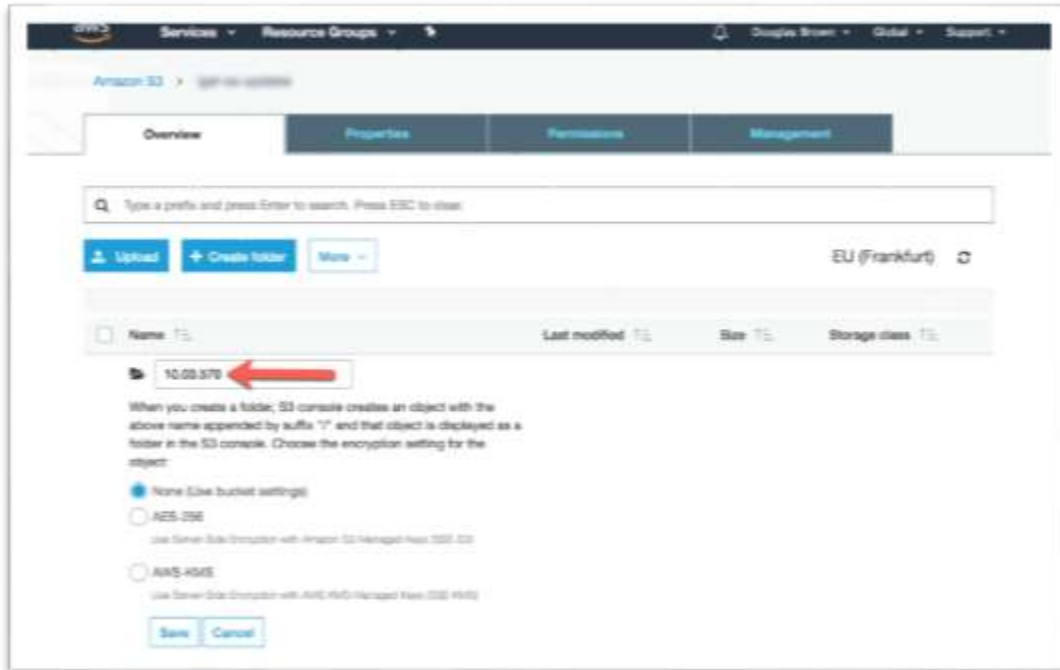
5. Over time you might find yourself with multiple firmware versions for a different type of devices and different firmware version numbers. Thus, it is recommended to create a folder for each firmware update.

Click the **Create folder** button to continue.

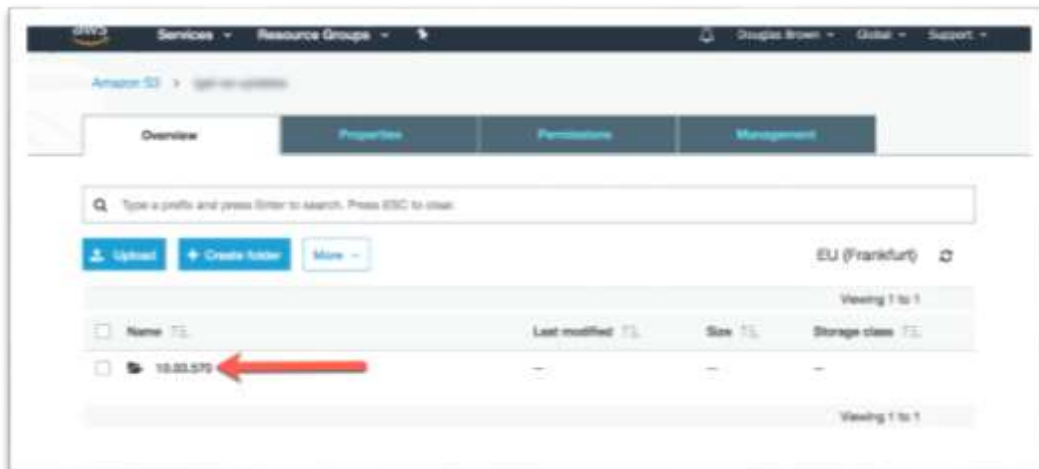


6. Enter a name for the new folder. We recommend selecting a name that reflects the firmware version.

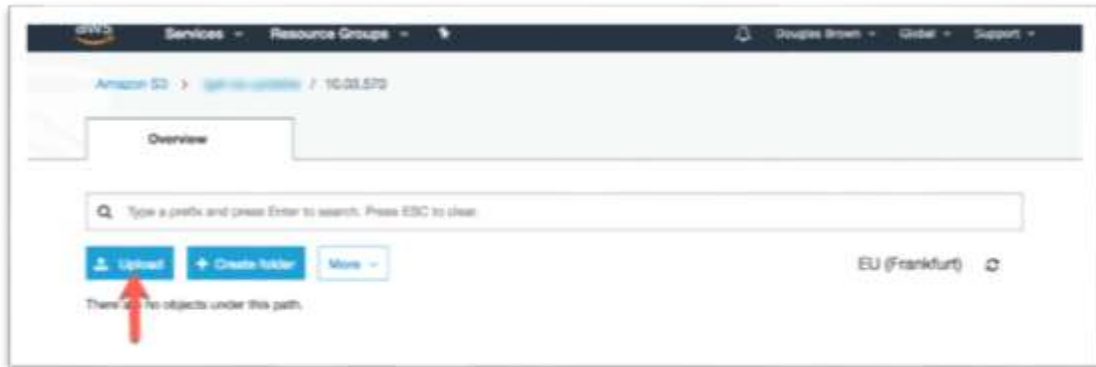
Enter the desired name and click the **Save** button to create the new folder.



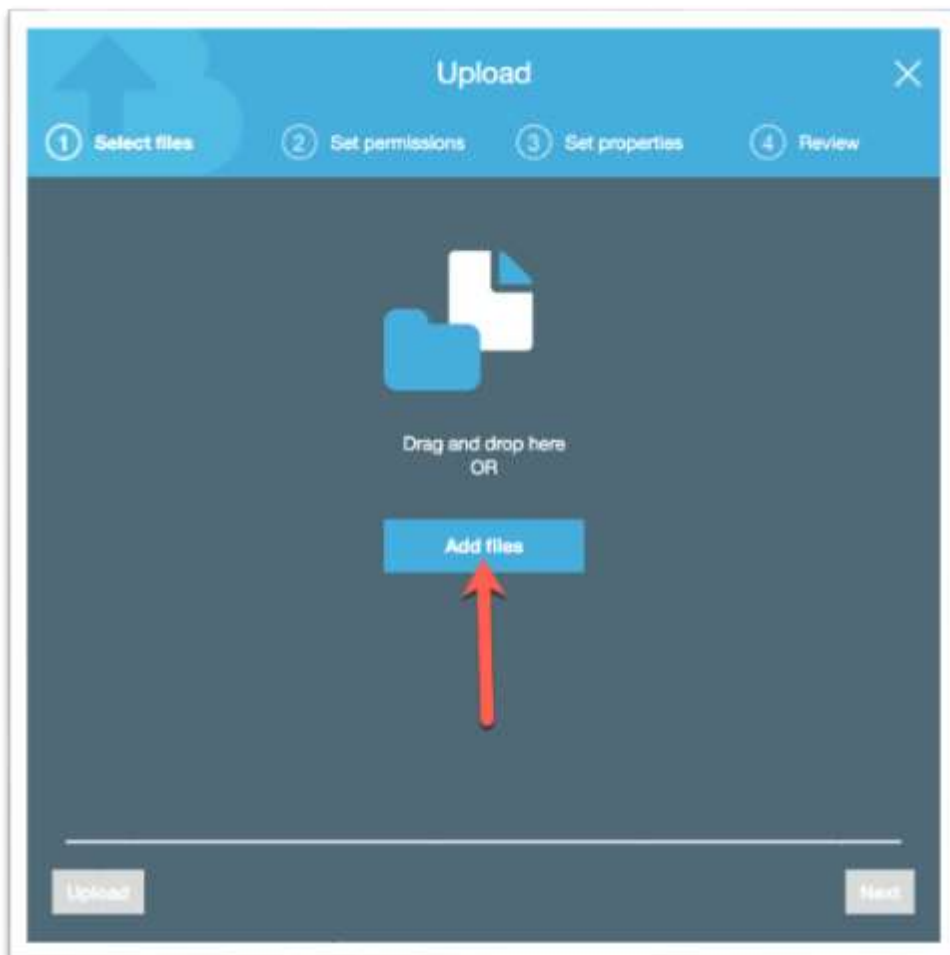
7. Click on the newly created folder to continue.



8. You are ready to upload the firmware files you downloaded above. Click the blue **Upload** button to continue.

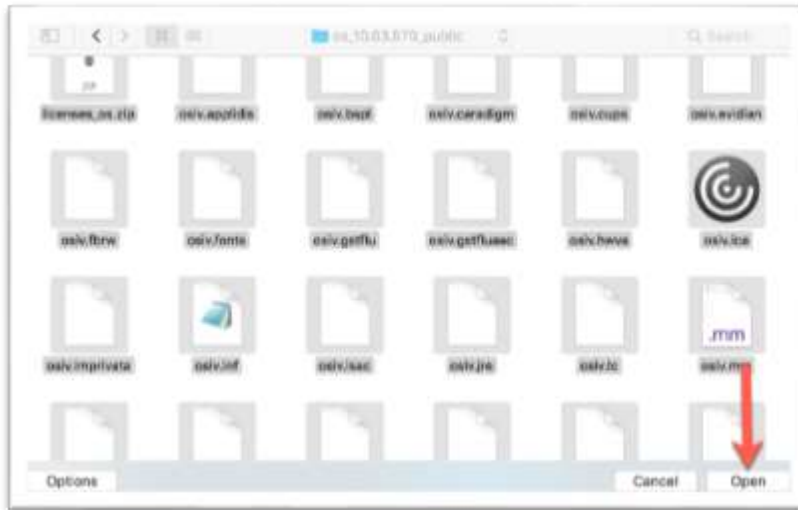


9. Click the **Add files** button to continue.

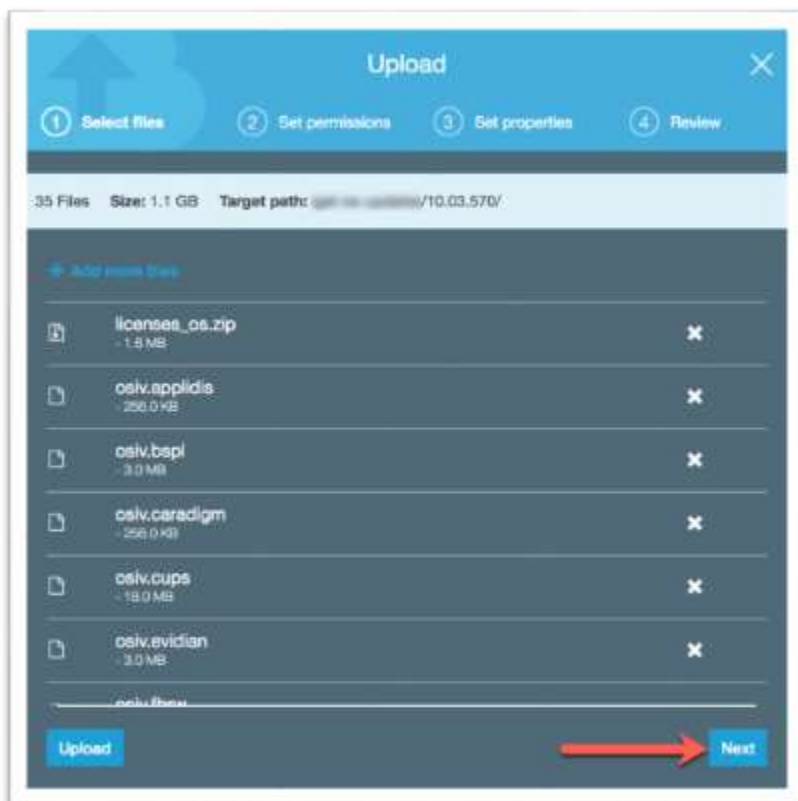




10. Browse to the location you extracted the firmware files you downloaded and hit **CTRL/Command A** (depending on OS version) to select all the files and then click the **Open** button.

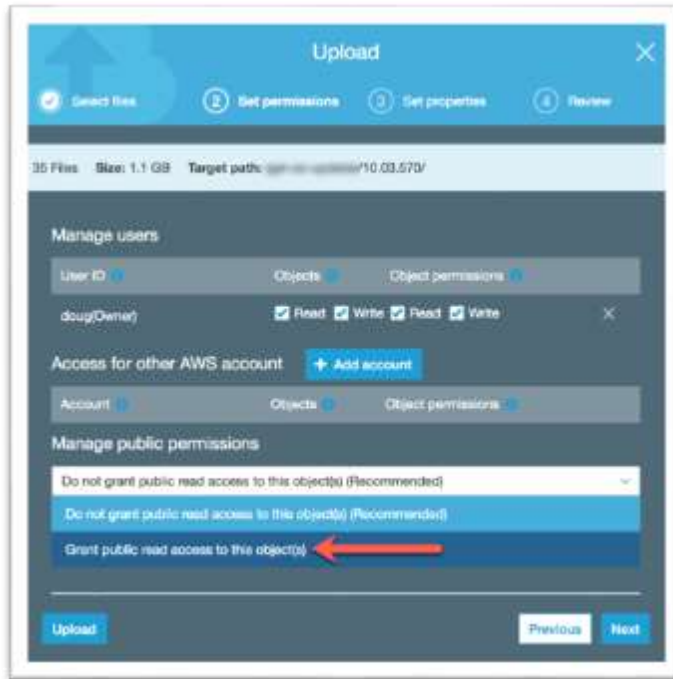


11. Click the **Next** button to continue.

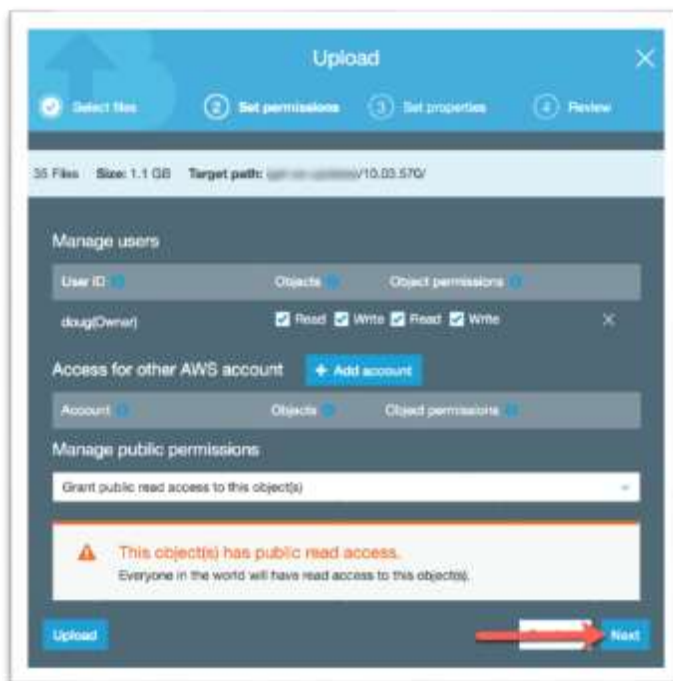


12. You are required to make the files public, so they are accessible to be downloaded by the IGEL OS. Click to drop down the **Manage public permissions** combo box and select the **Grant public read access to this object(s)** item.

Click **Next** to continue.



13. You are warned that everyone will have read access to your files. This is perfect, click the **Next** button to continue.



14. Click **Next** to continue.

**Upload**

Select files Set permissions **3 Set properties** 4 Review

35 Files Size: 1.1 GB Target path: `igel-os-firmware/10.03.570/`

**Storage class**  
Choose one depending on your use case scenario and performance access requirements.

☒ Standard ☐ Standard-IA ☐ Reduced redundancy

**Encryption**  
Protect data at rest by using Amazon S3 master key or by using AWS KMS master key.

☒ None ☐ Amazon S3 master key ☐ AWS KMS master key

**Metadata**  
Metadata is a set of name-value pairs. You cannot modify object metadata after it is uploaded.

Header	Value
--------	-------

Upload **Next**

15. You are ready to upload the firmware files. Click the **Upload** button to start the upload process.

**Upload**

Select files Set permissions Set properties **4 Review**

**Files** Edit

35 Files Size: 1.1 GB

**Permissions** Edit

2 grantees

**Properties** Edit

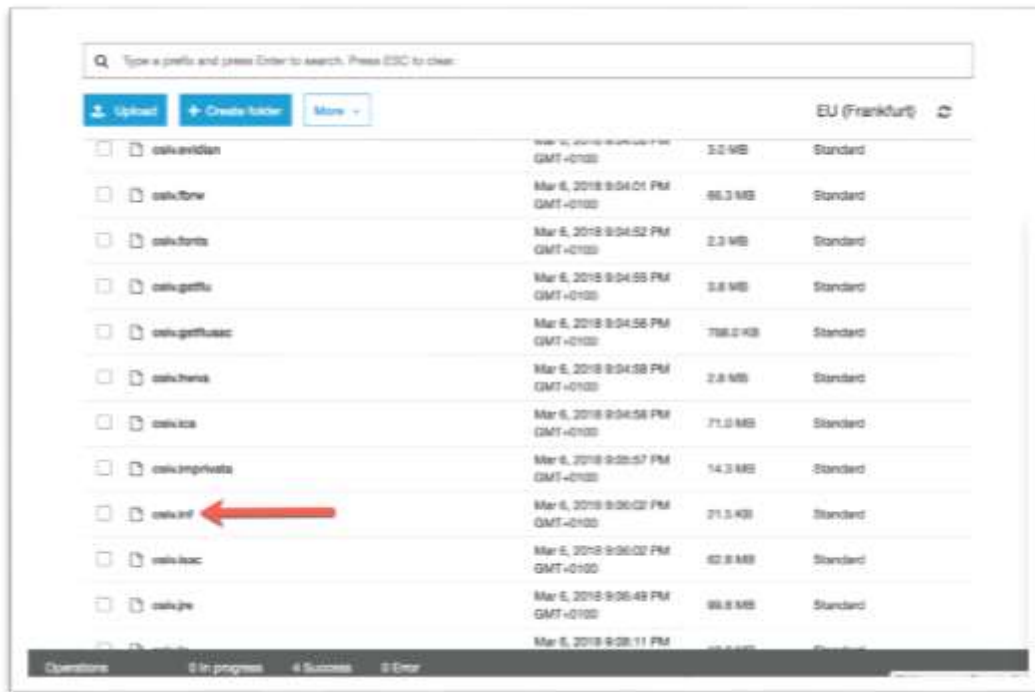
Encryption	Storage class
No	Standard

**Metadata**

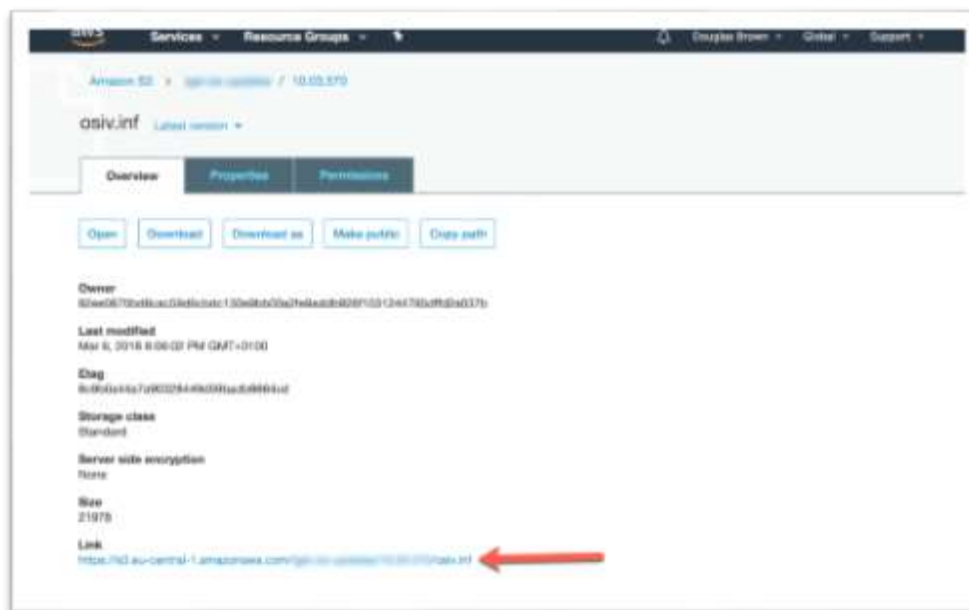
Tag

Upload

16. Once the files are uploaded, browse the list until you find the **osiv.inf** file and click to open its properties.



17. This is the file that gives you the complete path to the firmware files. Copy and paste this URL into a safe place as you will use it when creating a UMS update profile.



You are done and can skip to the **How to Create a Firmware Update Profile** section to configure the IGEL OS devices to use the newly created Firmware repository.

## 4. 2. 2 How to Configure Citrix ShareFile as the Firmware Repository

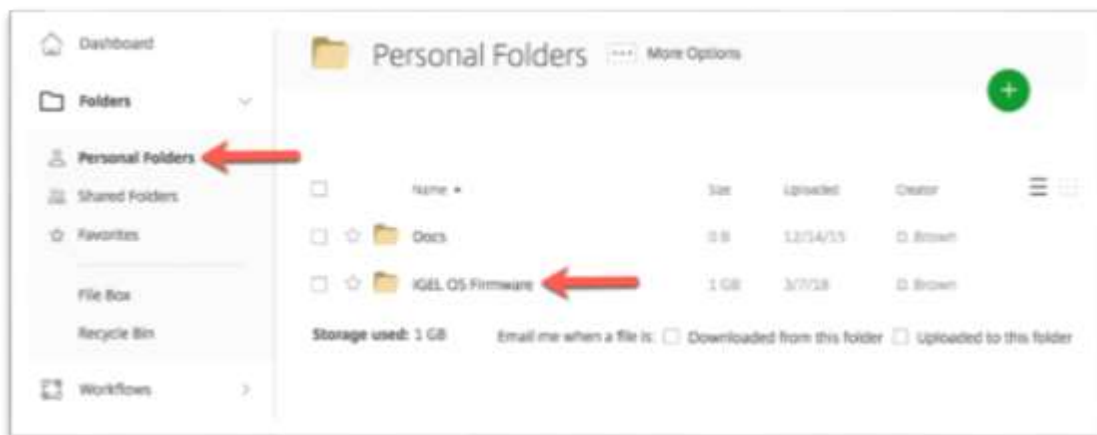
If you have chosen to use Citrix ShareFile as the firmware repository, please follow the

By default, the Citrix ShareFile FTP service only establishes nine FTP connections at a time. In this case, you would either need to set an update task to be trigger nine updates at shutdown and then repeat the process until all devices are updated, or you can try to contact ShareFile support and negotiate to change this setting on your ShareFile account, though we cannot promise they will.

steps below to configure ShareFile:

1. Open your favorite Browser and browse to your Citrix ShareFile account's web page and log in.
2. Once logged in, it is recommended to create a firmware update folder structure to store the different firmware updates the IGEL OS will be downloading. You can store this in any location you like, just be mindful of the location as you will need the full path when creating the UMS update profile in a coming step.

In this example, we have created a folder in the **ShareFile Personal Folders** called **IGEL OS Firmware**.

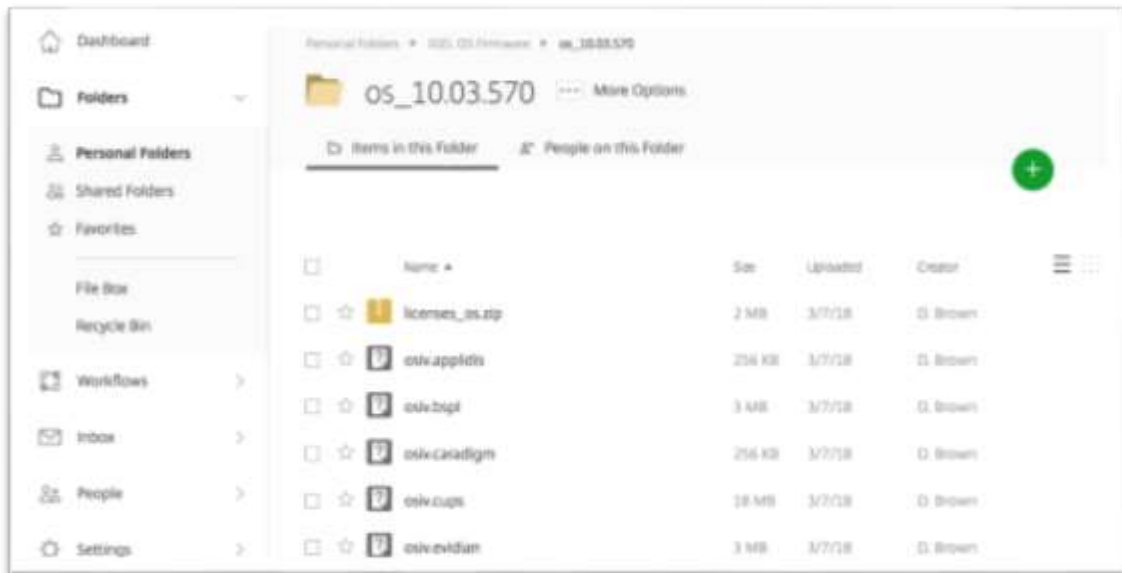


- Next, you will want to create the different folders for each firmware update. In this example, we have named it **os\_10.03.570**.



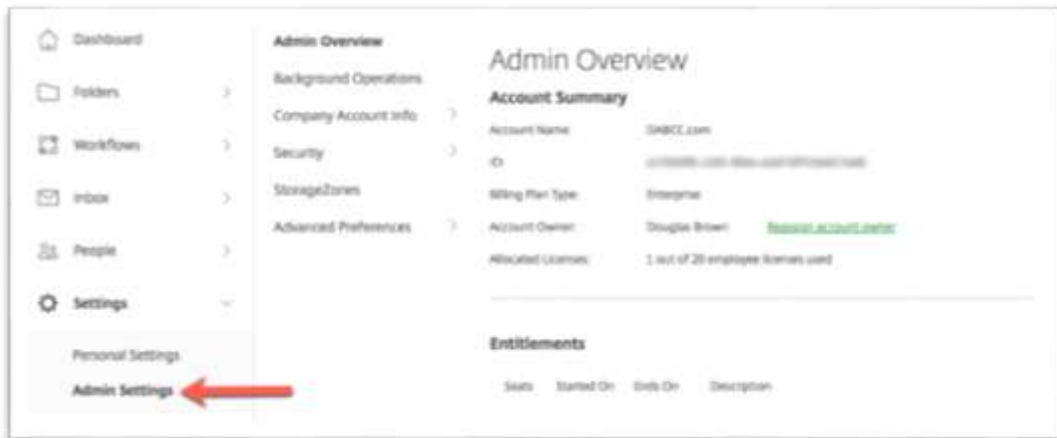
- Open the folder you created above and copy the extracted firmware files for the appropriate firmware to the newly created folder. This will take a bit of time to upload the files to the ShareFile cloud.

The upload will occur in the background; you can move forward to the next step.

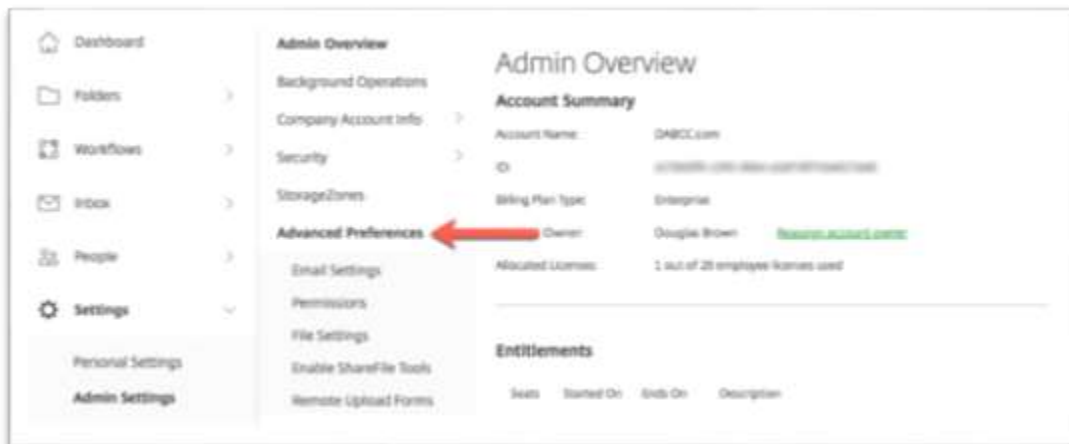


- Now that you have created your folder structure and are copying the firmware files to ShareFile you will need to configure the ShareFile service to allow the IGEL OS to download via the ShareFile FTP server.

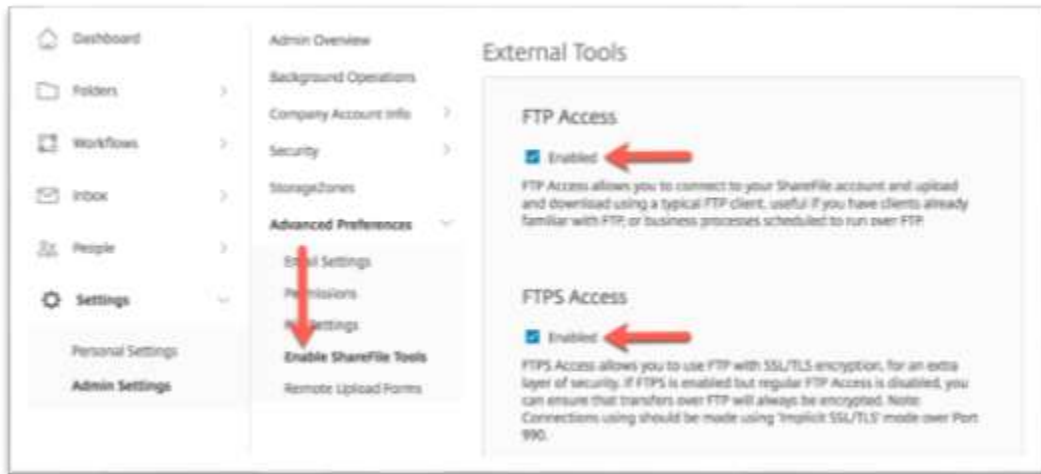
From the ShareFile web page, on the left menu, click to expand the **Settings** node and then click the **Admin Settings** link.



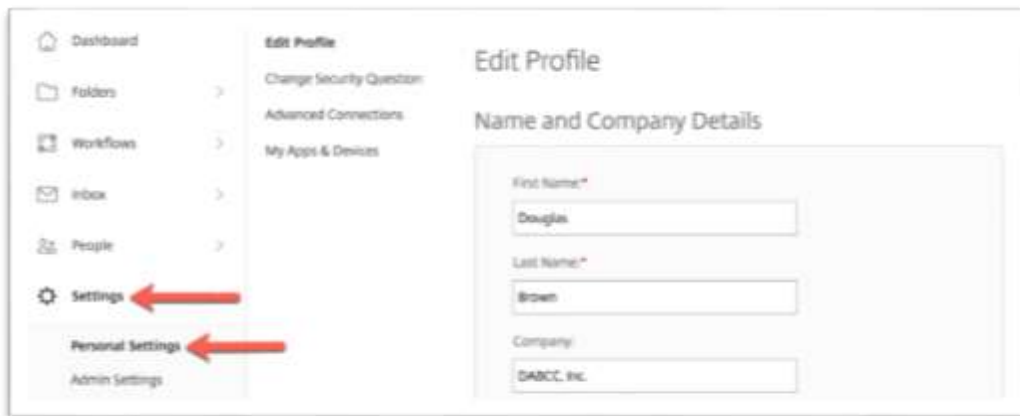
- Click to expand the **Advanced Preferences** node



- Click to the **Enable ShareFile Tools** node and browse to the **External Tools** section of the page. Click to check the **FTP Access** and **FTPS Access** checkboxes to enable the FTP service.



- From the **Settings** section of the left menu click to select the **Personal Settings** node.





9. Click to select the **Advanced Connections** node and browse to the **FTP Settings** section of the page. On this page, the FTP server name and username are displayed. Make a note of the **FTP Server URL** and the **User Name** as you will use them when creating the firmware update profile in a later section below.

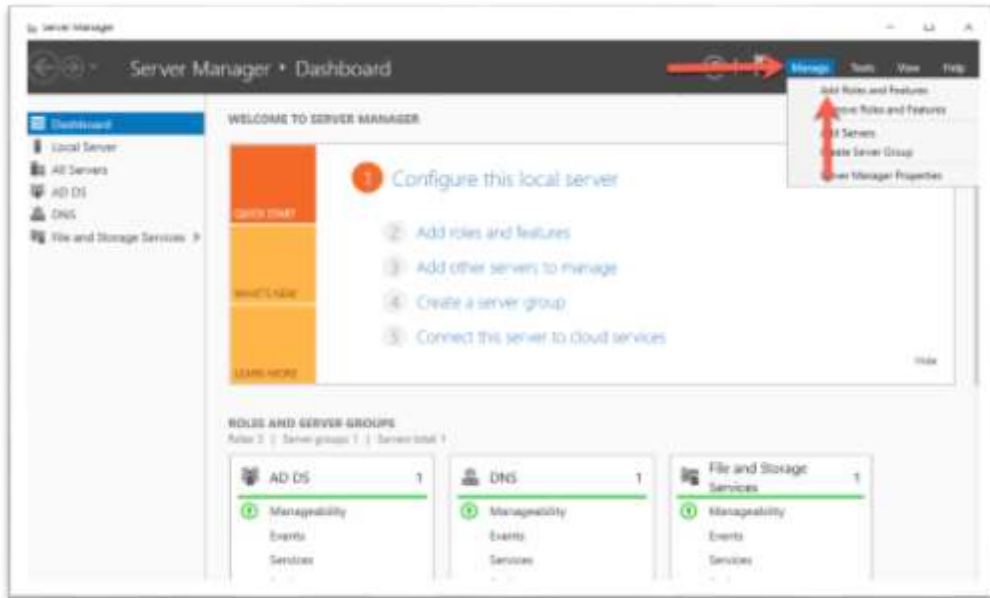


You are done and can skip to the [How to Create a Firmware Update Profile](#) section to configure the IGEL OS devices to use the newly created firmware repository.

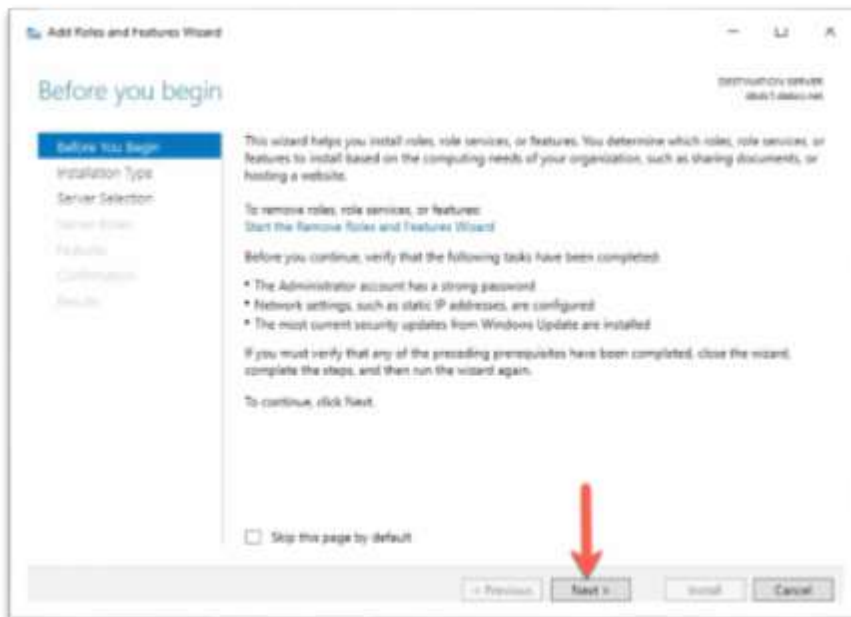
## 4. 2. 3 How to Configure Microsoft IIS FTP as the Firmware Repository

If you have chosen to use a Microsoft IIS FTP server as the firmware repository, please follow the steps below to create and configure the IIS FTP server:

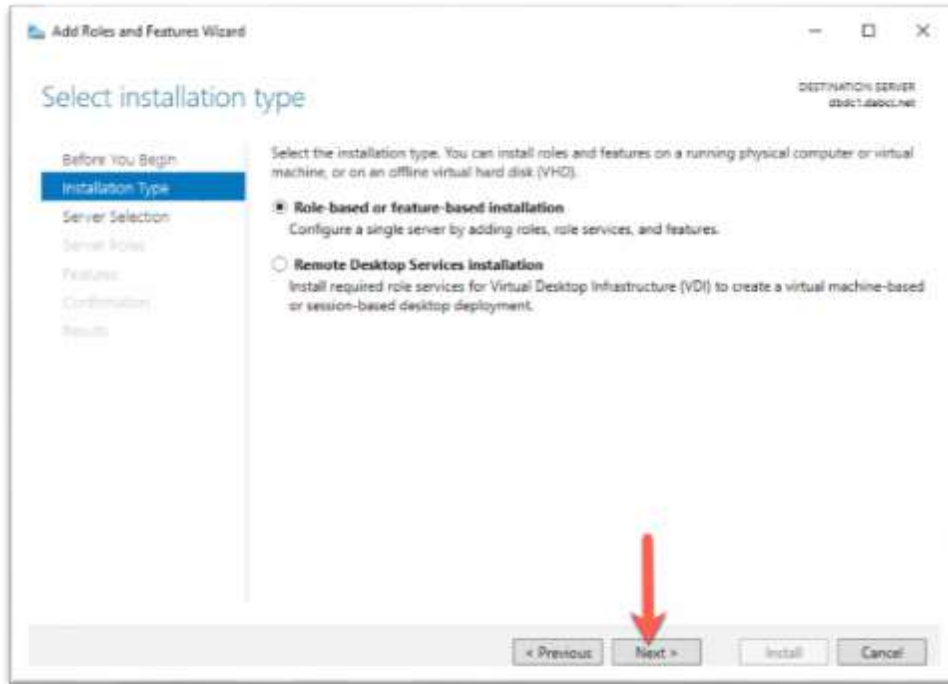
1. Open the **Server Manager** and click to expand the **Manage** menu and then click the **Add Roles and Features** link.



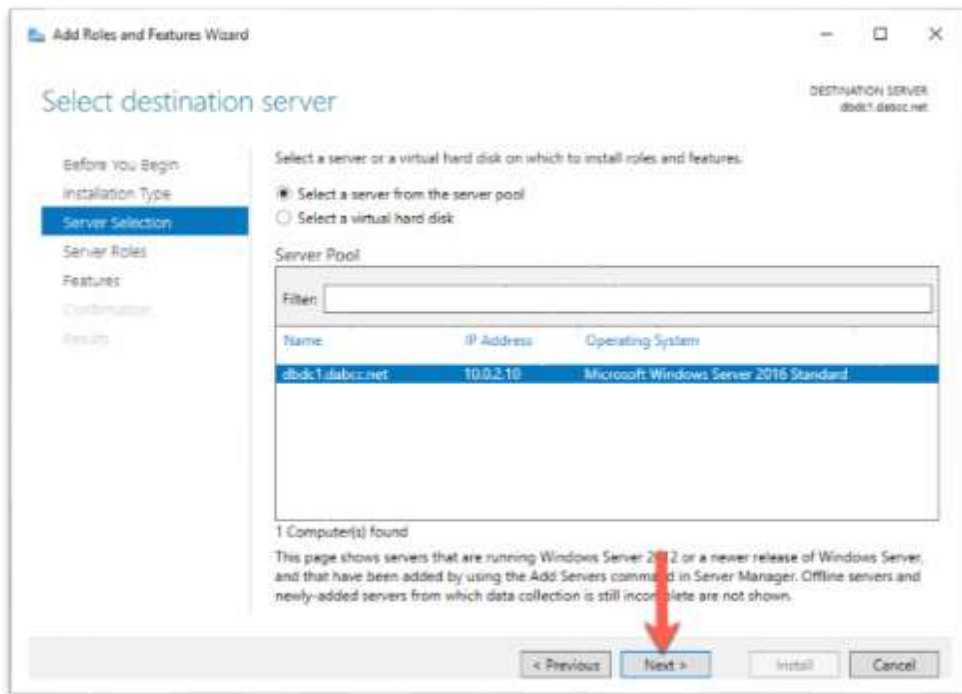
2. Click the **Next** button to continue.



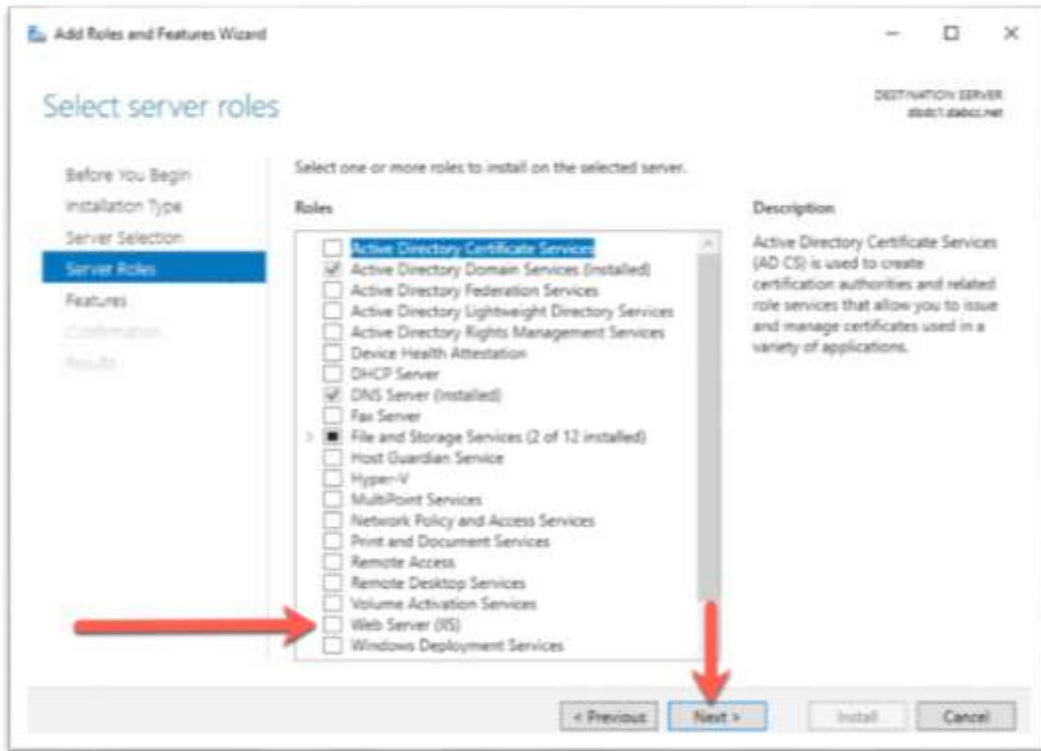
3. Accept the default **Role-based feature-based installation** and click **Next** to continue.



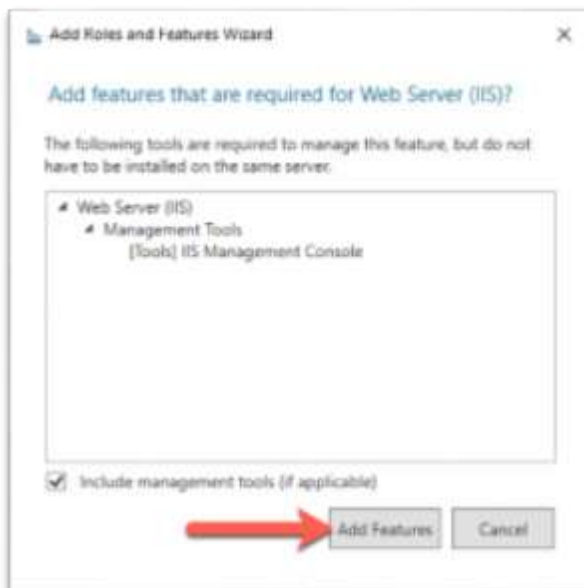
4. Accept the default **Select a server from the server pool** and click **Next** to continue.



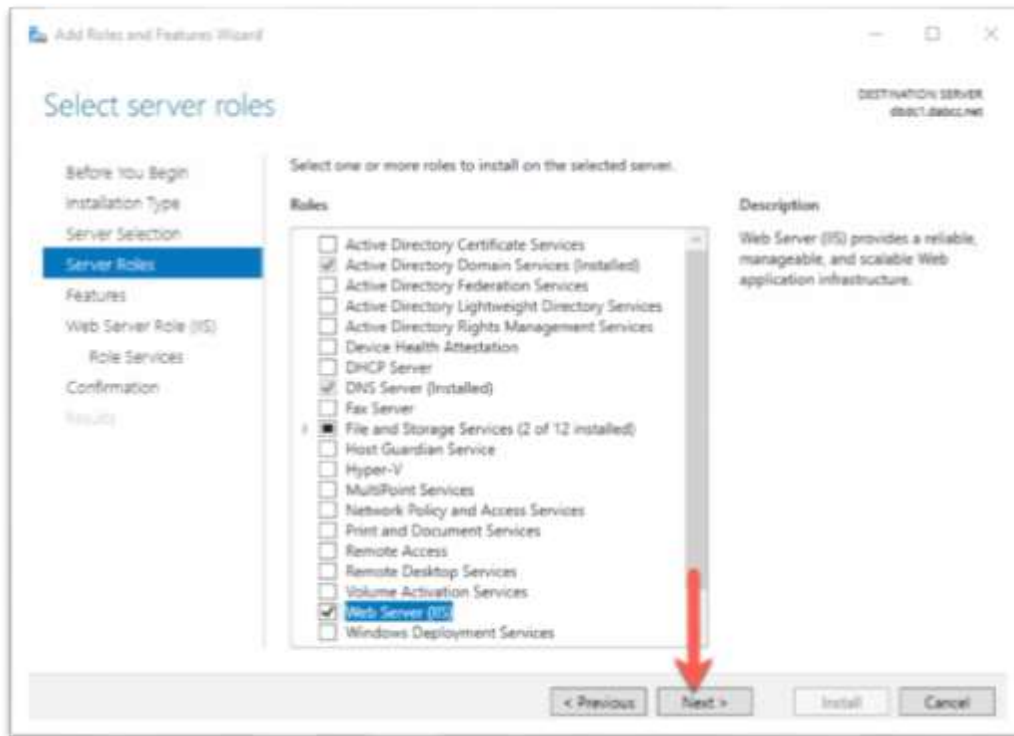
- Click to check the **Web Server (IIS)** role and click **Next** to continue.



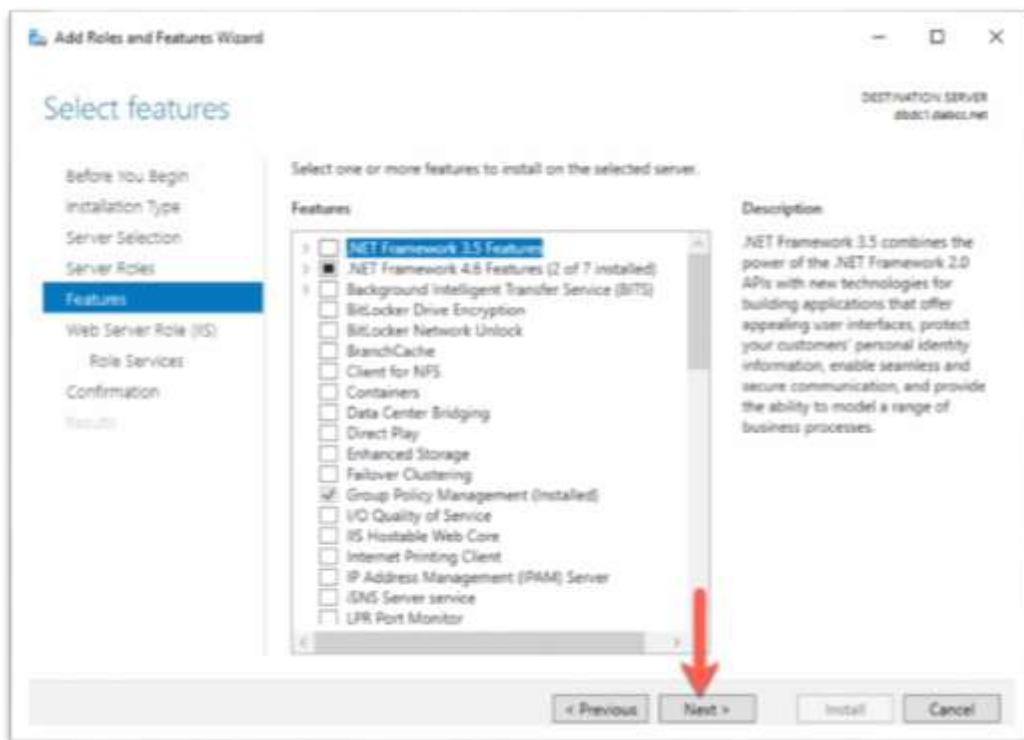
- Click the **Add Features** button to continue.



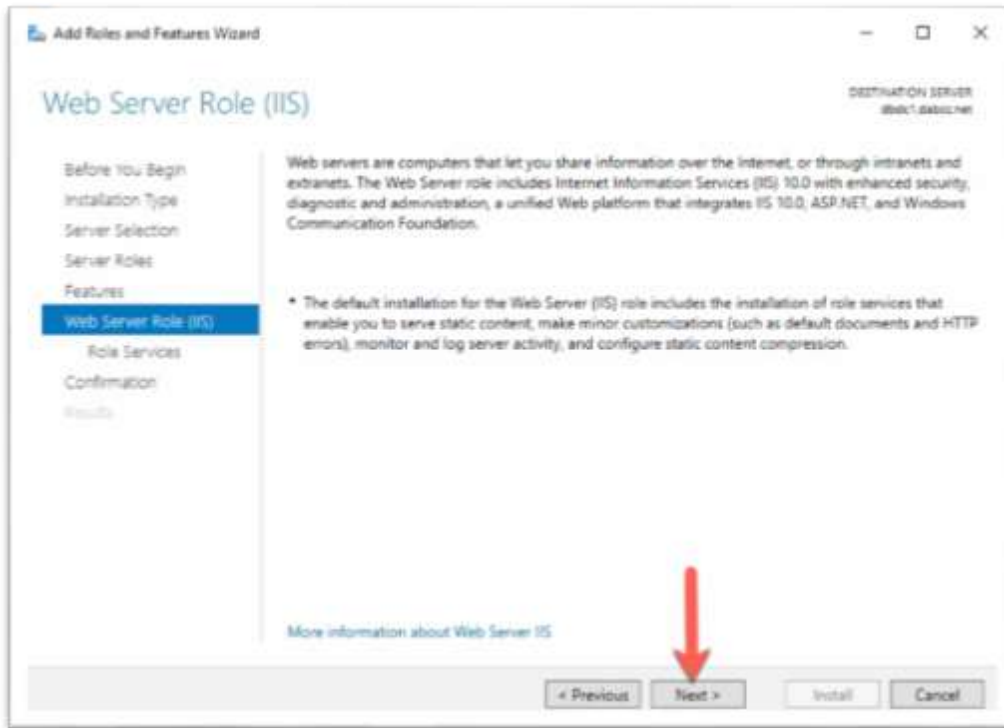
7. You are brought back to the Roles page, and you will notice the **Web Server (IIS)** checkbox is checked. Click **Next** to continue.



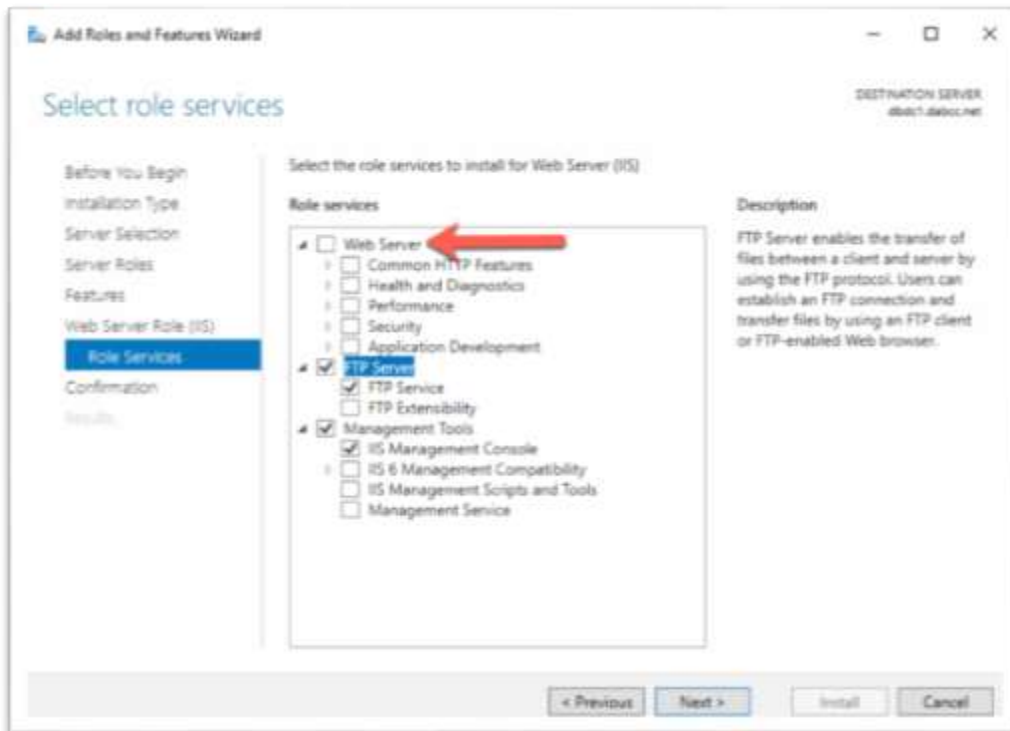
8. Click **Next** to continue.



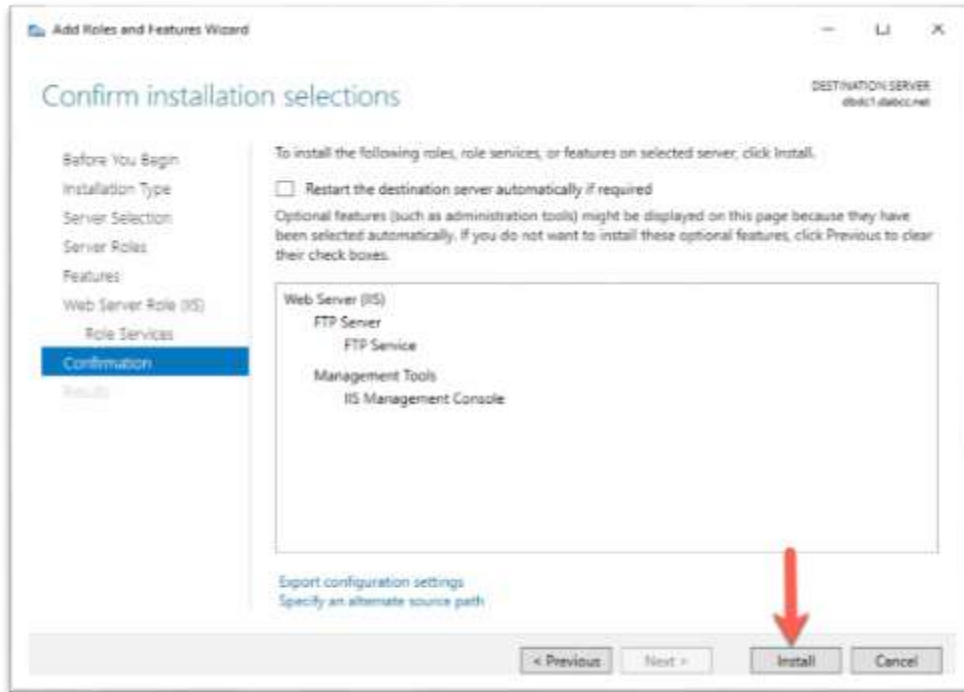
9. Click **Next** to continue.



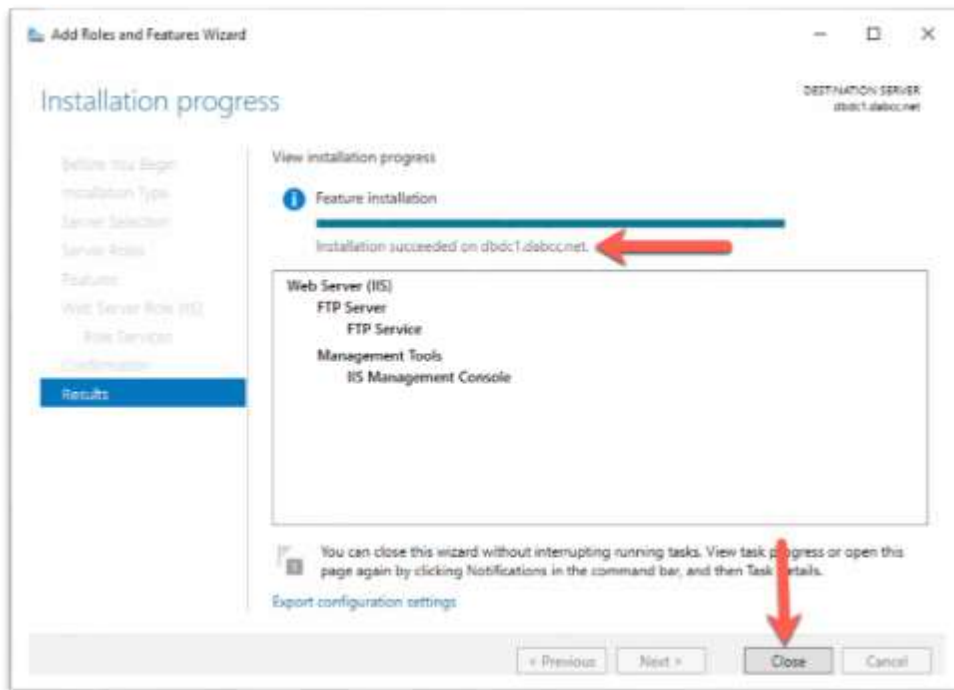
10. It is time to configure the different IIS Services you wish to install. In this use-case you are only installing the FTP Server, you can uncheck the **Web Server** checkbox and then click to check the **FTP Server** checkbox and then click **Next** to continue.



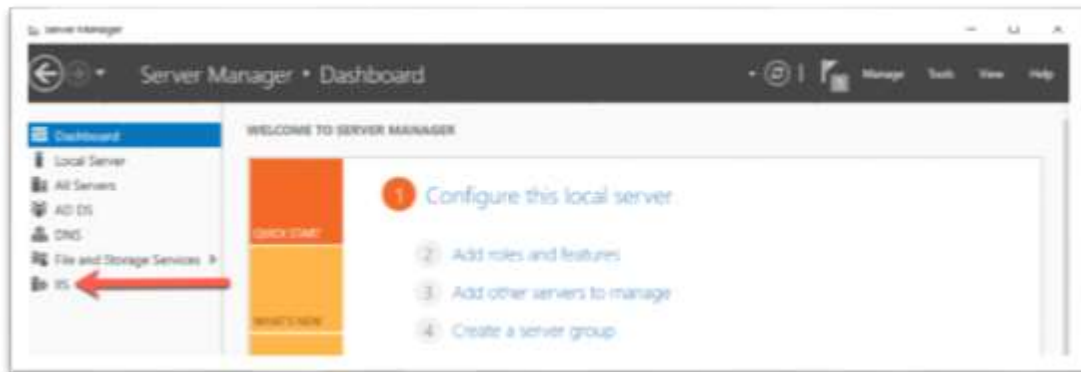
11. Verify your settings look like the screenshot below and click the **Install** button to install the FTP Server.



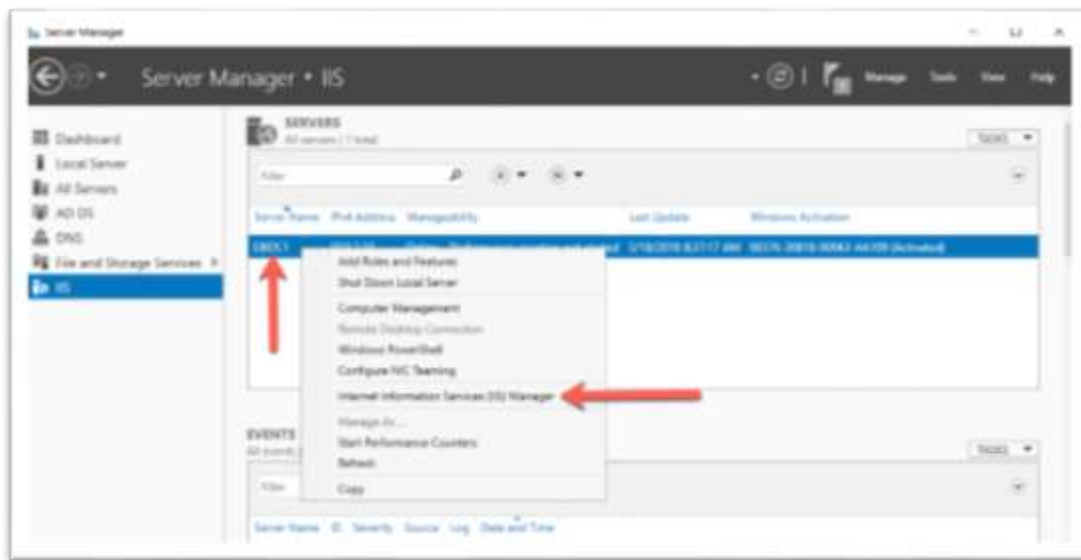
12. If all goes as planned, you are promoted that the installation succeeded. Click the **Close** button to continue.



13. You have successfully installed a Microsoft FTP server. The next step is to create the FTP site you will use to store IGEL OS firmware updates. Click the new **IIS** entry in the left menu.



14. You should see your newly installed FTP server listed in the right pane, right click on it to reveal the context menu. Click the **Internet Information Services (IIS) Manager** link.

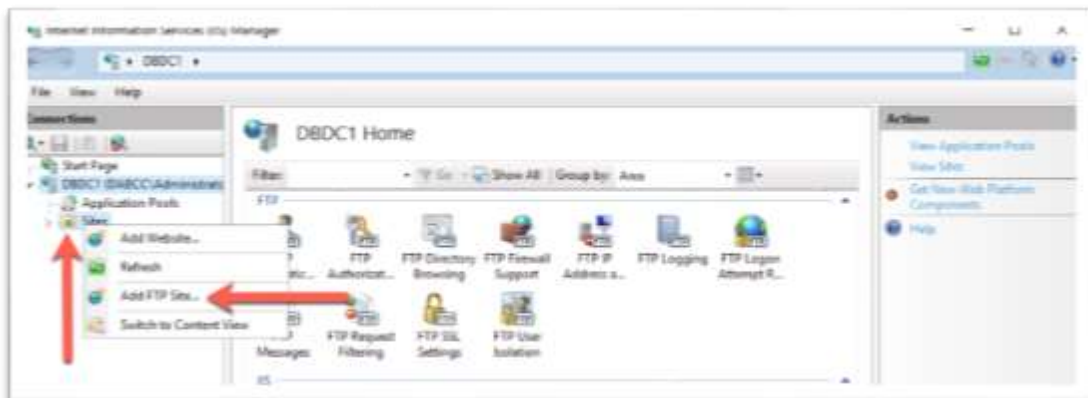




15. The **Internet Information Services (IIS) Manager** opens. Click to expand the server's node in the left men.



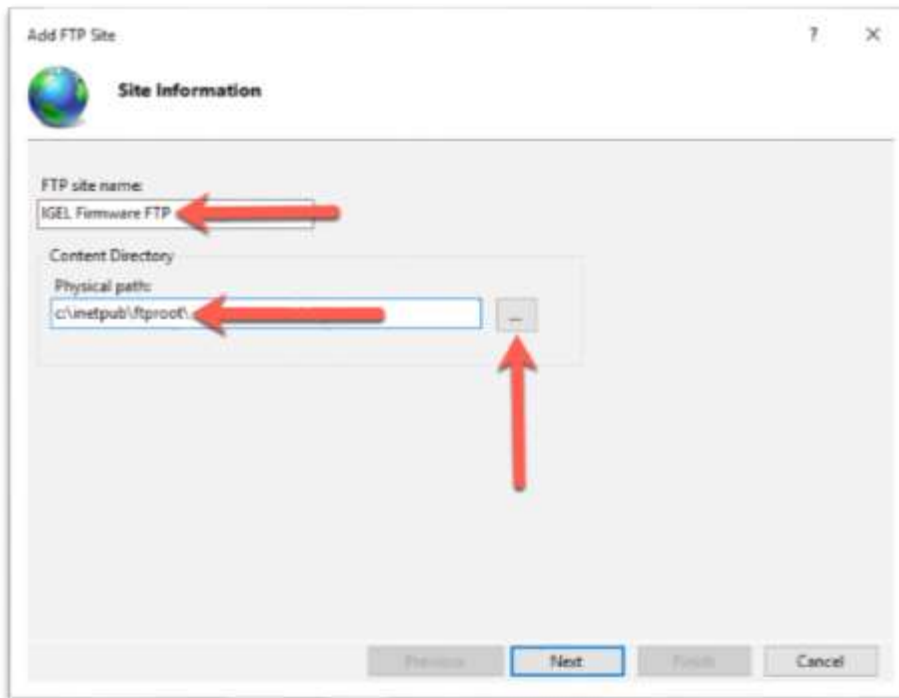
16. Right-click the **Sites** node to expose the context menu and click the **Add FTP Site** link to continue.



17. Enter a friendly name in the **FTP site name** text box and then enter **c:\inetpub\ftproot\** in the **Physical path** text box and click the ... button to create

You will need to make sure you have enough disk space to store the firmware updates. Firmware updates can be rather large, greater than 1GB in size.

the location you will be storing the firmware image files.



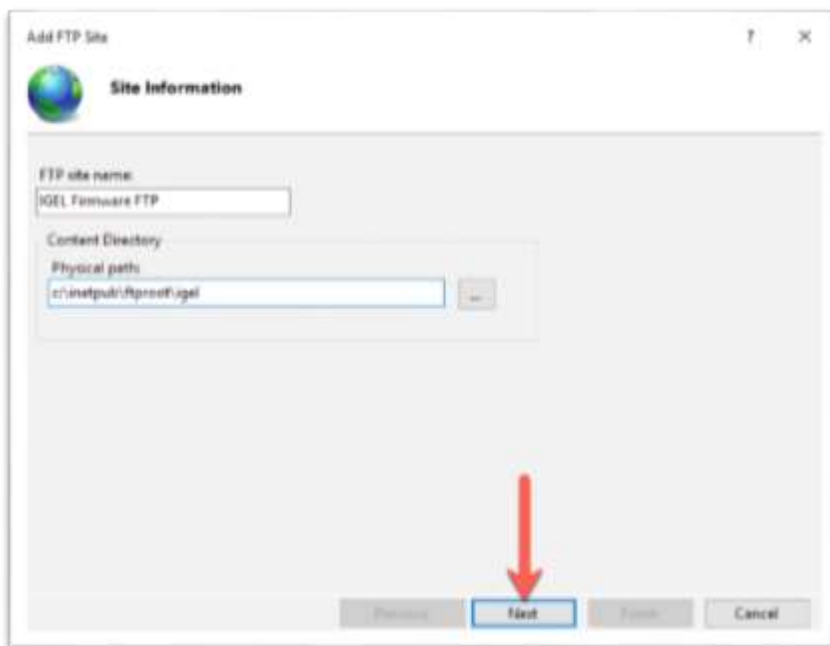
18. Click the **Make New Folder** button.



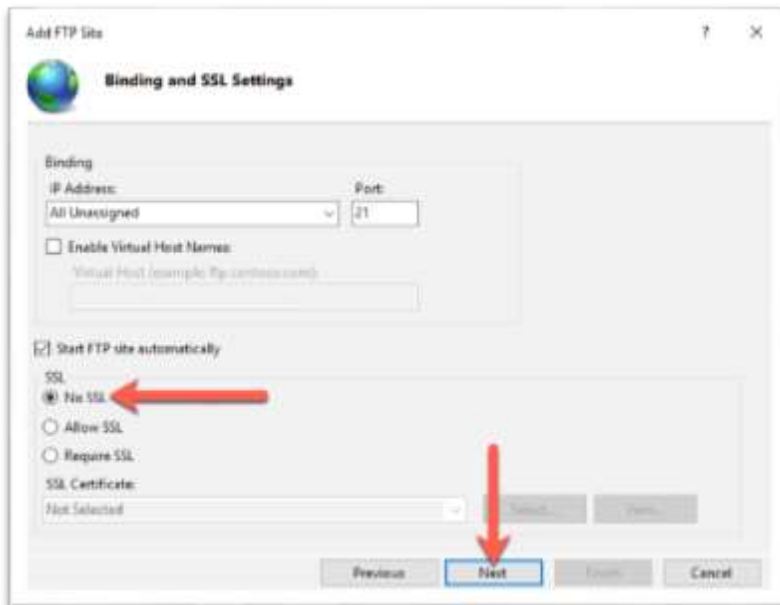
19. Enter a name for the firmware repository's root folder and click **OK** to continue.



20. Verify the settings are as desired and click **Next** to continue.



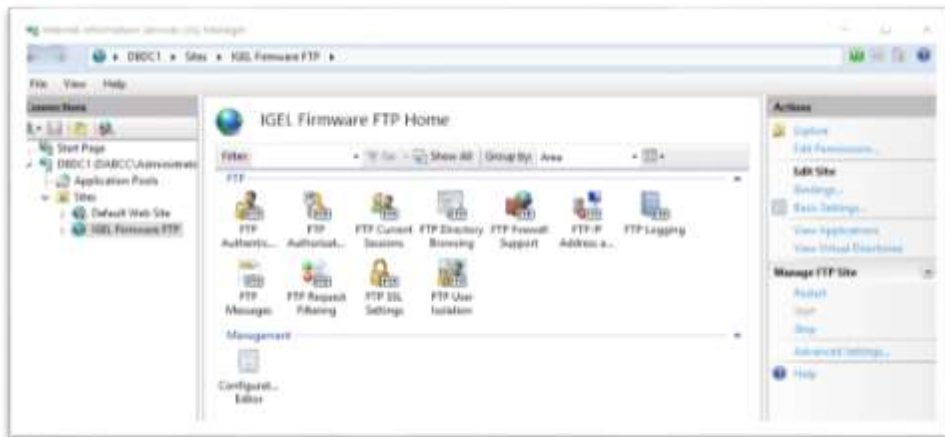
21. In this example, we are not deploying an SSL certificate and hence not using SFTP. Of course, you can do this if you desire. Click the **No SSL** radio button and click **Next** to continue.



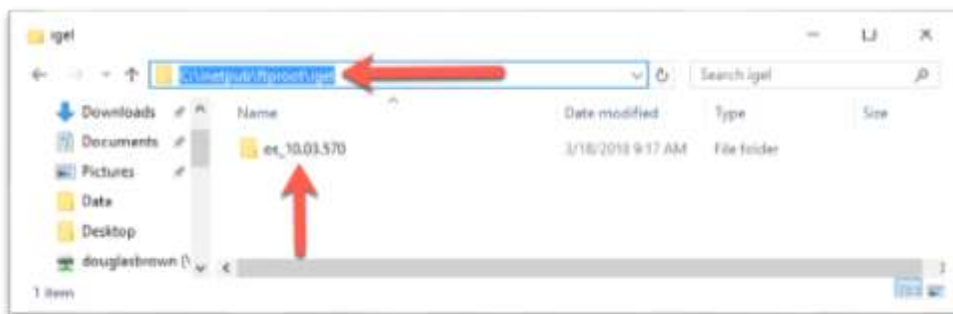
22. You are required to configure how the IGEL OS will authenticate with the FTP server to download the firmware updates. In this example, we will be using **Basic** authentication, and the permissions are set to **Read** only. You can either create a local windows user or, if your server is a domain member, you can use a Domain User account. In both cases, make sure this user account has the correct NTFS permissions on the FTP folders. Click **Finish** to continue.



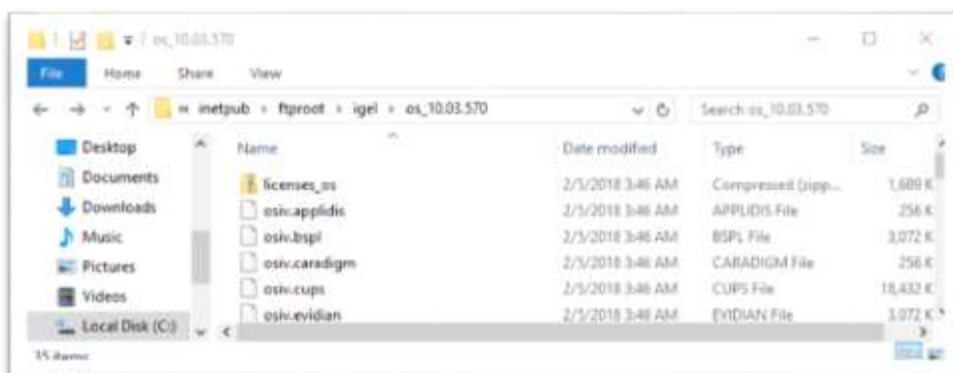
23. You are done configuring the Microsoft FTP server. You can test it by connecting to the FTP server with your favorite FTP client.



24. Now it is time to populate the FTP site with the desired firmware image files. Browse to the folder you defined in step 19 and create a new folder with a name corresponding to the desired firmware version you will be deploying. Repeat this step for every firmware version you would like to implement.



25. Open the newly created folder and copy and paste the extracted firmware image files to the folder.



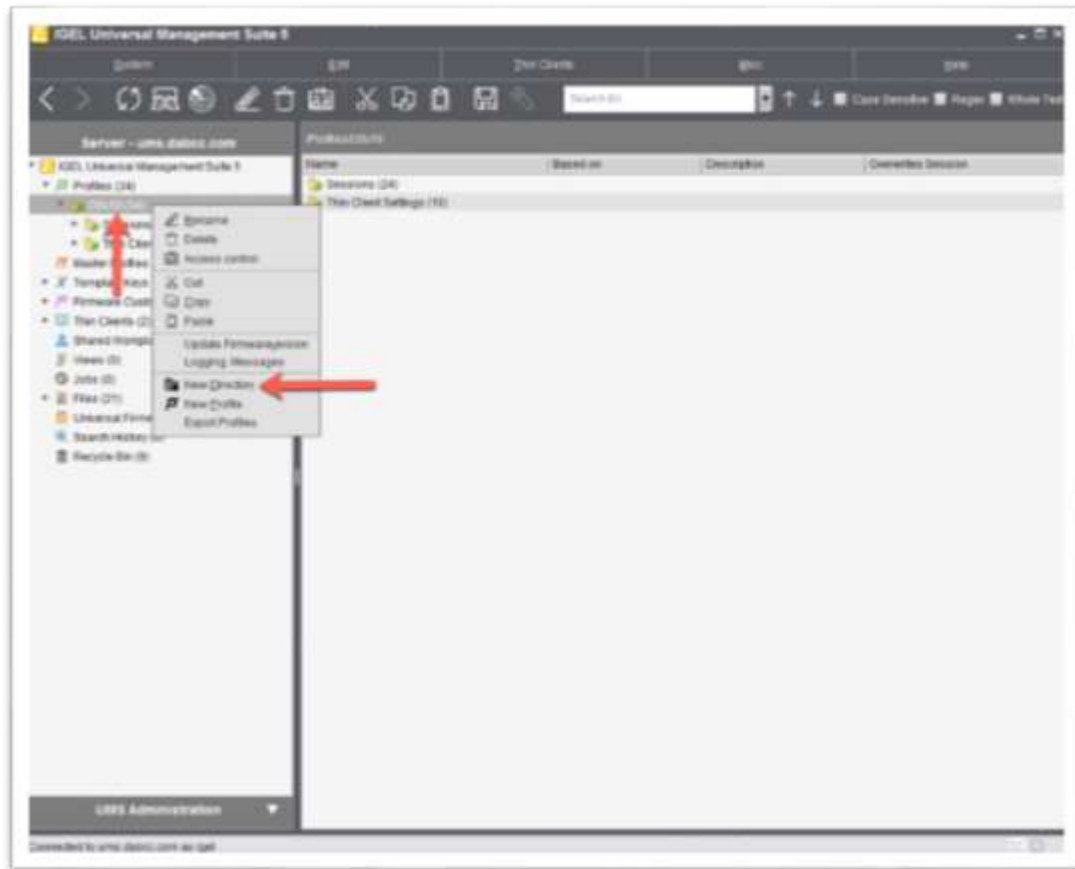
## 4. 3. How to Create a Firmware Update Profile

Once you have created the firmware repository, you are ready to create a UMS update profile. This profile is used to configure the desired IGEL OS devices to use the newly created Firmware repository settings.

The following details how to create a UMS update profile and assign it to the desired devices running the IGEL OS.

1. Login to the IGEL UMS and browse to the **Profiles** section. The first thing you will want to do is create a folder structure to house the different profiles you will be creating for each firmware version you wish to deploy.

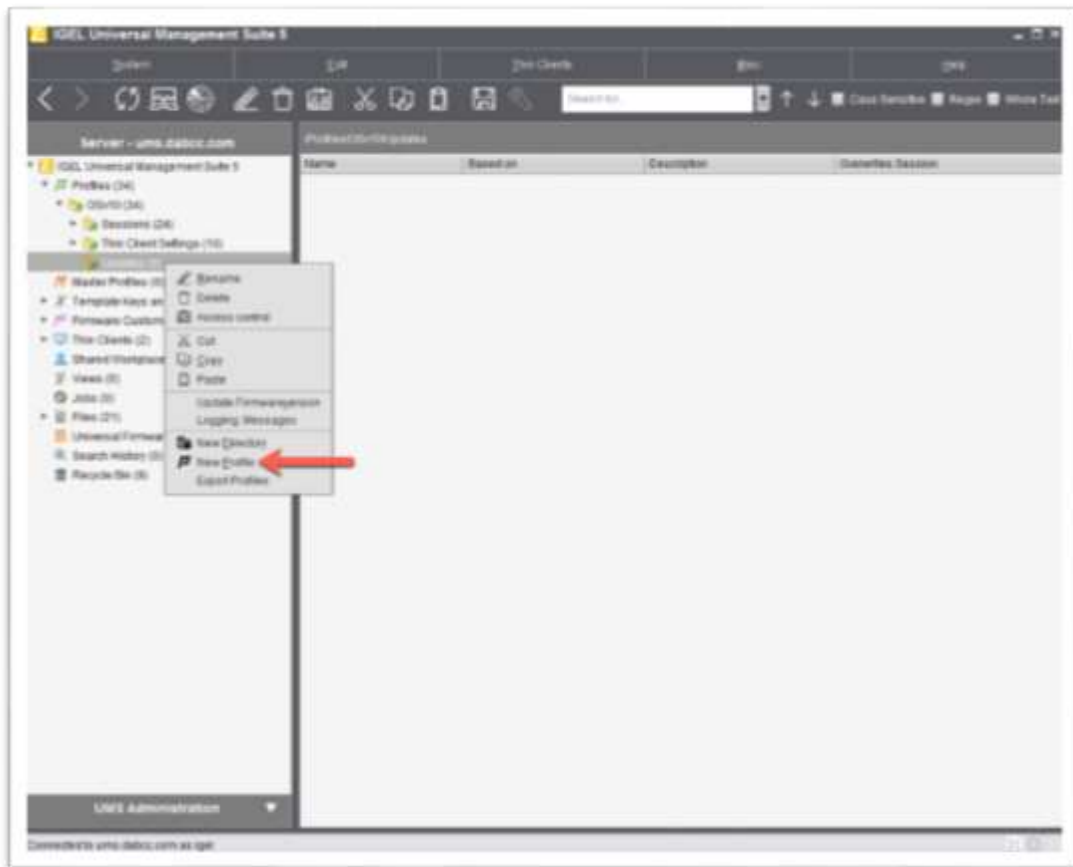
Right-click the root level folder that houses the profiles for the specific firmware family you are deploying and click the **New Directory** link.



2. Enter a name for the new directory that will house the update profiles. It is recommended to make this name descriptive. In the example below, we used the name **Updates**, though you are free to call it anything you like.



3. Right-click the newly created folder and click the **New Profile** link to start the process of creating an update profile.



4. You are required to create a specific profile for each IGEL OS Firmware you wish to deploy. Enter a detailed name for the new profile in the **Profile Name** text box. As with all names, make it descriptive. In the example below, the profile is named after the firmware version being deployed. Click the **OK** button to continue.



5. The profile window opens, click to expand the **System** menu item located in the left menu.





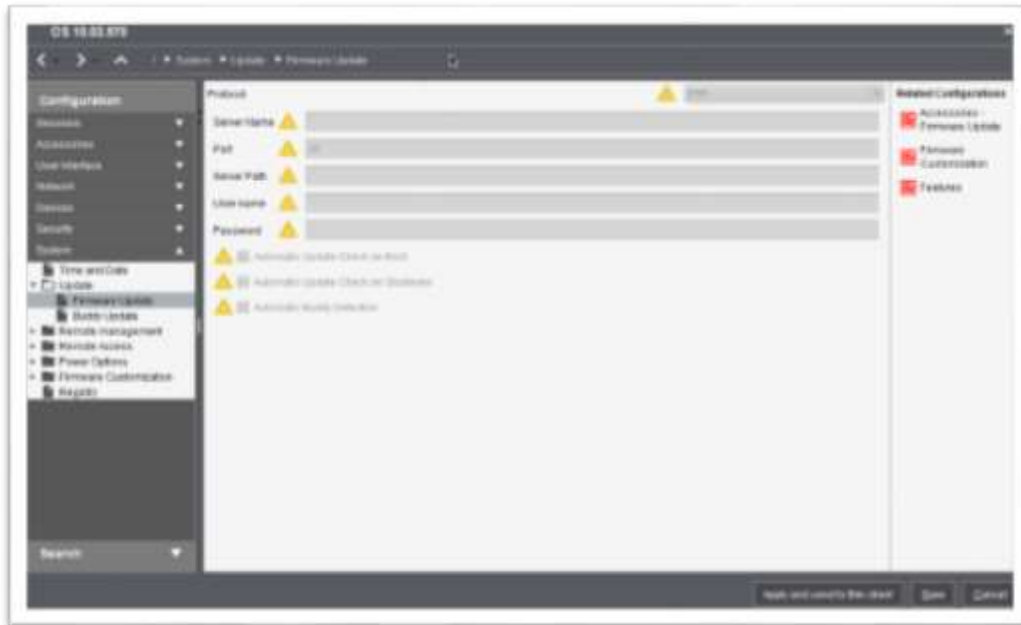
6. Click to expand the **Update** node.



7. Click the **Firmware Update** link to open the firmware update profile settings page.

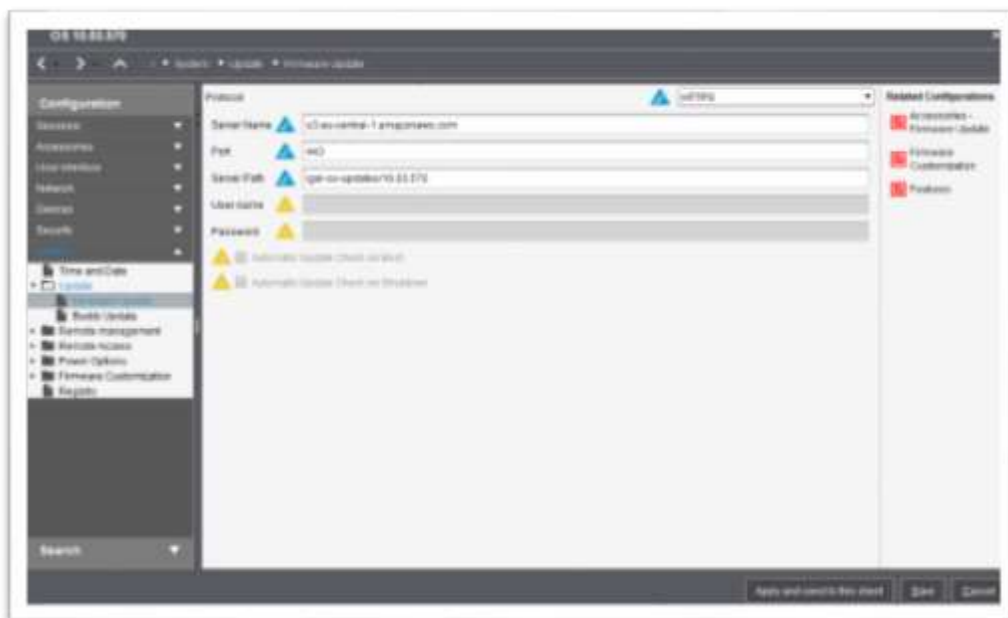


8. You are brought to the **Firmware Update Profile** properties page. This is where you will configure the IGEL OS where to download the firmware files. Depending on the firmware repository you choose to configure in the previous section will define what settings you will enter on this page.



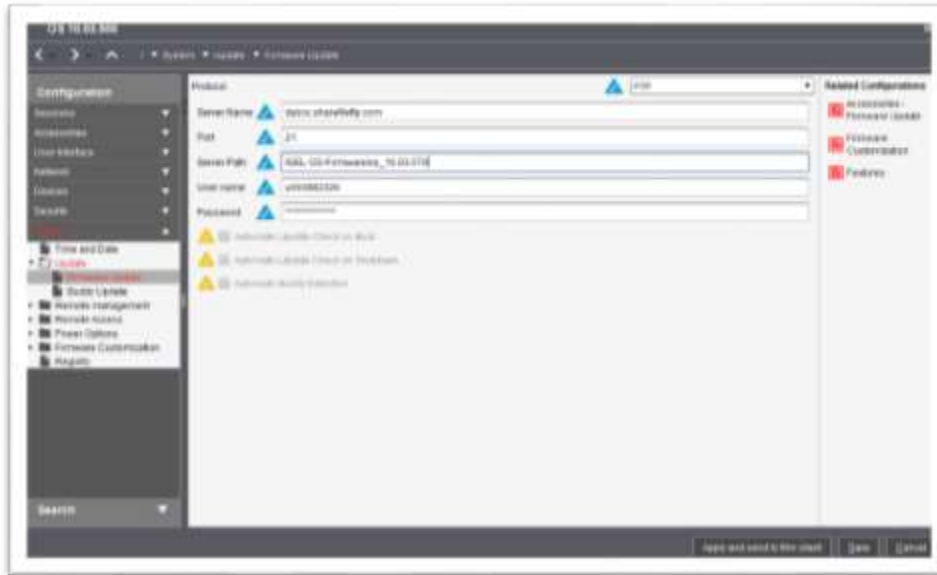
9. If you are using **AWS S3** as the firmware repository, as documented above, please refer to your notes for the specific server name, port, and server path. In the example above, it would look something like the screenshot below.

Enter your specific settings and click the **Save** button to save the new profile.



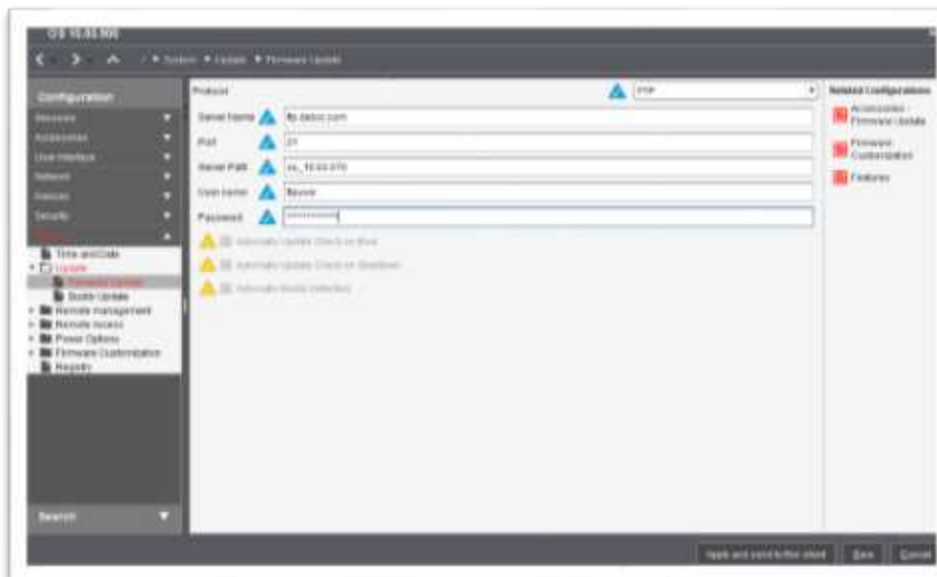
10. If you are using a **Citrix ShareFile** server as the firmware repository, as documented above, please refer to your notes for the specific server name, port, server path, username, and password. In the example above, it should look something like the screenshot below.

Enter your specific settings and click the **Save** button to save the new profile.



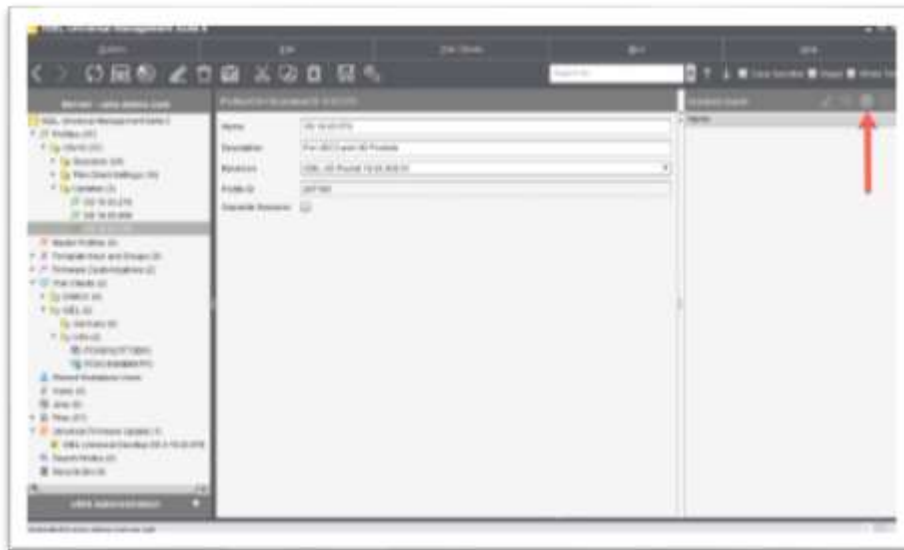
11. If you are using a **Microsoft IIS FTP** server as the firmware repository, as documented above, please refer to your notes for the specific server name, port, server path, username, and password. In the example above, it should look something like the screenshot below.

Enter your specific settings and click the **Save** button to save the new profile.



12. Now that you have created the firmware update profile you will need to assign it to the desired IGEL OS devices. This can be done in two ways, 1) you can drag and drop the newly created profile to a folder or device containing the IGEL OS devices you wish to assign the profile to, or 2) you can assign it using the **Assigned Objects** panel of the UMS.

For this example, let's assign the device using the **Assigned Objects** panel. Click the + icon located in the **Assigned Objects** section.



13. The Select assignable objects window opens, and you are presented with a tree of folders and devices to assign to the new update firmware profile. Do note that you are just assigning the firmware update settings and not triggering the update itself. In this case, it is not necessarily bad to assign the profile to all the desired devices at once. The update is relatively small and would not require a reboot.



14. Select the desired objects and click the > button to move them to the **Selected objects** pane. Repeat this step until you have assigned all the folders and devices you wish to the update firmware profile.

Click the **OK** button when finished to assign the profile to the desired IGEL OS devices.



15. The update time dialog box is opened prompting you to define when you would like the new settings to take effect. Select the desired settings and click **OK** to continue.



## 5. How to Deploy a Firmware Update

Once you have successfully downloaded the IGEL OS firmware and configured the IGEL UMS to update the IGEL OS firmware you are required to deploy it. In simple terms, in this step, you tell the IGEL OS when to download and update the firmware. IGEL provides four different options to configure the deployment; locally, via the UMS, automatically on shutdown or startup and you can create a scheduled task to update at a specific date and time.

This section is broken down into the following three possible steps, only one is needed:

- [How to Manual Deploy from UMS](#)
- [How to Automate Updates on Shutdown](#)
- [How to Schedule Updates using Jobs & Views](#)

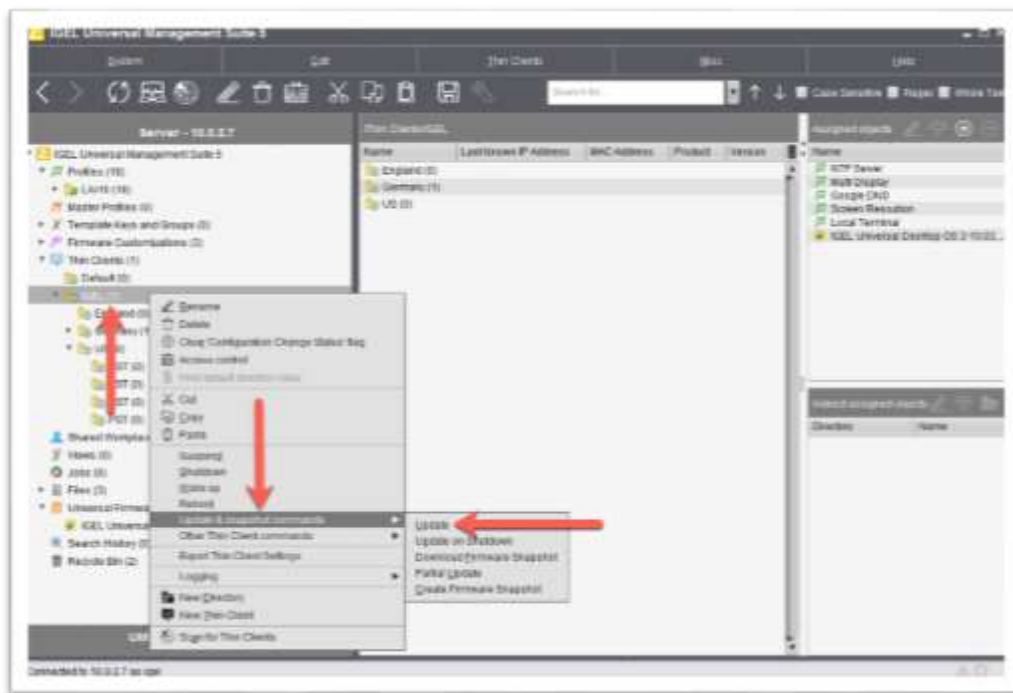
## 5. 1. How to Manual Deploy from UMS

The following steps detail how to manually configure deployment of the IGEL OS firmware update via the UMS. This option triggers the update to occur right away, in real time.

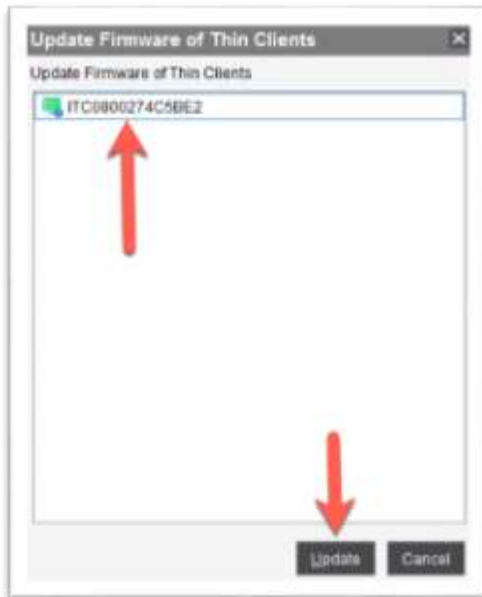
1. To deploy the IGEL OS firmware update you will need to do that from the IGEL OS folders or the device itself.

In this example, let's trigger the update for all devices in a folder. Right-click on the desired folder and click the **Update & snapshot commands**.

Click the **Update** link to continue.



2. The **Update Firmware of Thin Clients** window is opened listing the devices that will be updated. Confirm the list is correct and click the **Update** button to install the updates.



3. The firmware update should have started, look at an affected device, you might notice message boxes showing the progress of the firmware update.

Once finished the device will reboot, and the new OS version will be ready to use!





## 5. 2. How to Automate Updates on Shutdown

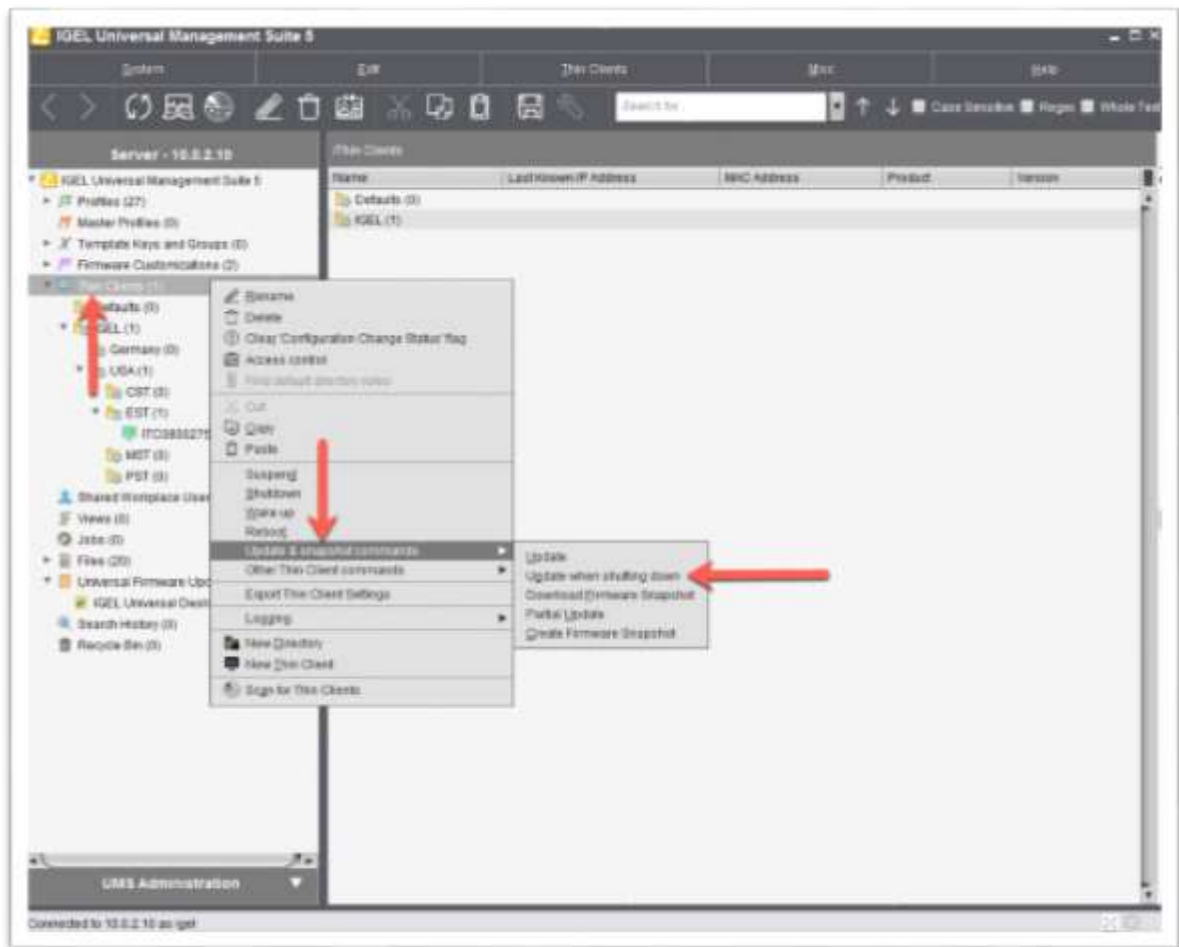
Although it is powerful to be able to deploy a new update on-demand, it might just be in your best interest to deploy the update the next time the device is shutdown.

The following steps details how to manually configure deployment of the IGEL OS firmware update via the UMS the next time the desired devices are shutdown.

1. To automate firmware updates the next time the IGEL OS is shutdown you need to do that from a folder containing IGEL OS device the desired device itself.

In this example, let's trigger the update for all devices in a folder. Right-click on the desired folder and click the **Update & snapshot commands**.

Click the **Update when shutting down** link to continue.



2. The **Update Firmware of Thin Clients on next shutdown** window opens listing the devices that will be updated. Confirm the list is correct and click the **Update when shutting down** button to install the updates.



It's that simple, the next time the configured IGEL OS devices are shutdown, the desired firmware update will occur.

## 5. 3. How to Schedule Updates using Jobs & Views

The IGEL UMS ships with a powerful feature for scheduling tasks called Jobs. With Jobs, you send reoccurring or one-time only commands to an IGEL OS device or a group of IGEL OS devices.

Currently, the UMS support sending the following commands via a Job:

- Update
- Shutdown
- Reboot.
- Suspend
- Update on boot
- Update on shutdown
- Wake up
- Settings TC->UMS
- Settings UMS->TC
- Download Flash Player
- Remove Flash Player
- Download Firmware Snapshot
- Partial Update
- Update desktop customization

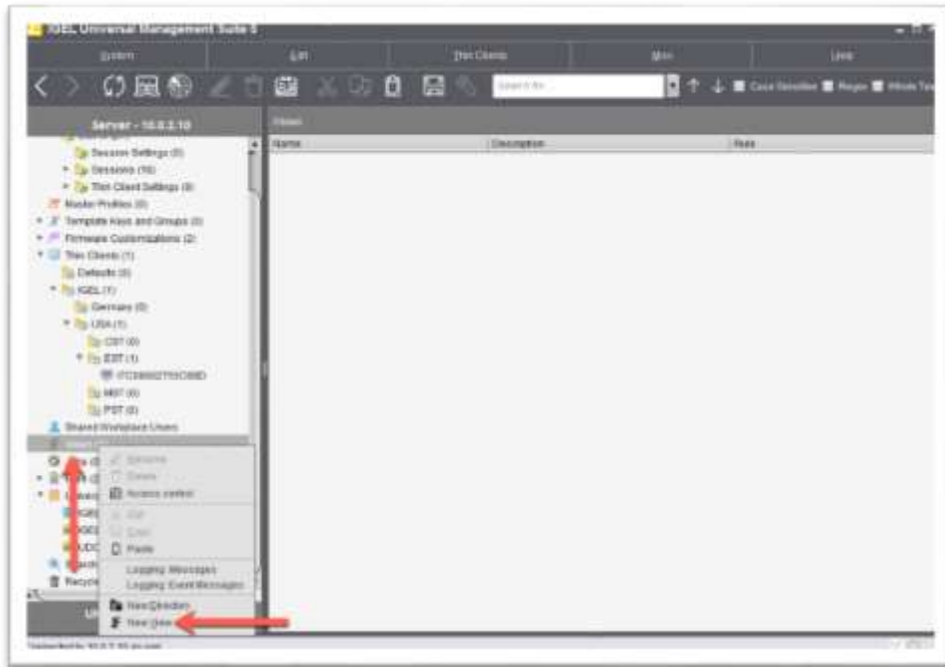
To learn more about the UMS Jobs feature, please refer to the following eDocs article:  
<https://kb.igel.com/endpointmgmt/en/jobs-910606.html>.

The UMS also ships with a feature called, Views that perfectly compliment the Jobs feature. A View allows administrators to define a list of devices based on many different criteria, For example, listing all the devices that are older than a certain firmware version. Once a View is created, you can assign it to a Scheduled Job.

To learn more about the UMS Views feature, please refer to the following eDocs article:  
<https://kb.igel.com/endpointmgmt/en/views-910591.html>.

The following steps detail how to schedule a firmware update using the UMS Jobs and Views features:

1. If you would like to use a View to define a list of devices based on criteria more than just a group of devices or specific devices, then a View is for you. To create a View right-click on the **Views** node in the left menu and click the **New View** link.

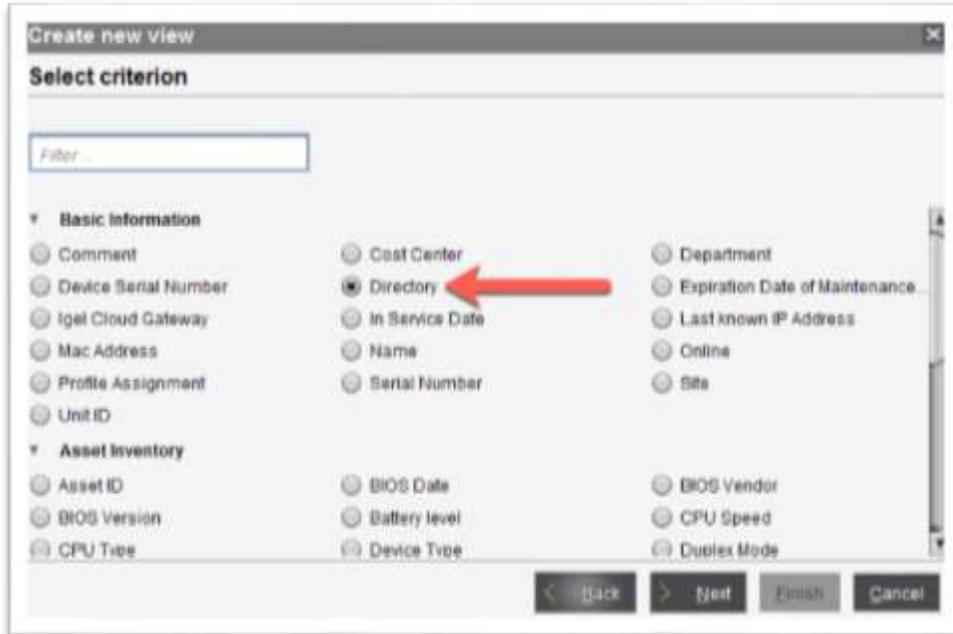


2. Enter a descriptive name in the **Name** text box and click **Next** to continue.

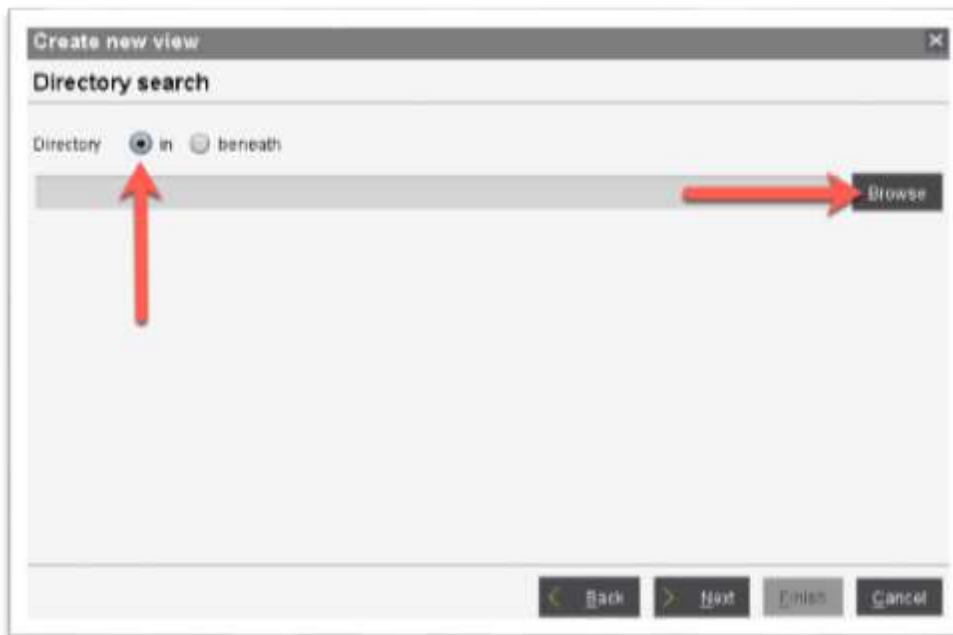


3. You are prompted to select the criteria you would like to use to make the list of devices. As you can see, there are many options to choose from. You can even filter the list by using the **Filter** text box.

For this example, click the **Directory** radio button and then click **Next** to continue.



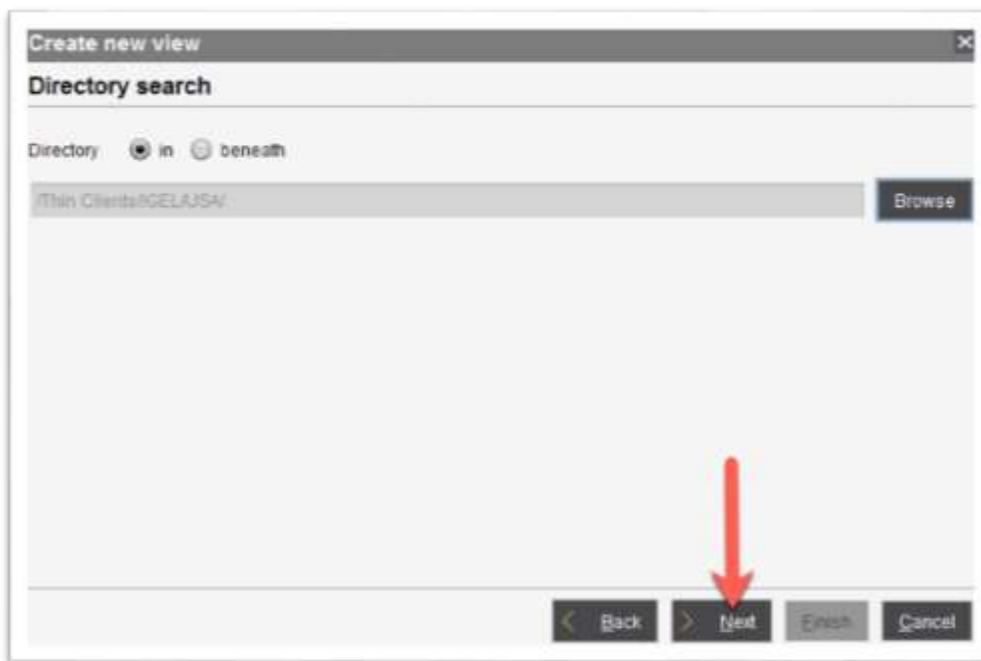
4. The **Directory Search** page allows you to define which thin client folder you wish to narrow your search within. Click the **in** radio button and then click **Browse**.



5. Select the thin client directory you wish to use and click the **OK** button to continue.



6. You are brought back to the **Create new view** page, click **Next** to continue.



7. You are asked if you would like to continue building your view or create additional search criteria.

For our example, click the **Narrow search criterion (AND)** radio button and then click **Next** to continue.

The screenshot shows a dialog box titled "Create new view" with a close button (X) in the top right corner. The main heading is "Finish view creation". Below this, there are three input fields: "Name" with the text "Define\_my\_concerned\_Endpoints\_for\_updates", "Description" (empty), and "View criteria" containing the text "Is in the directory with ID 81". At the bottom, there are three radio buttons: "Create view", "Narrow search criterion (AND)" (which is selected and has a red arrow pointing to it), and "Create additional search criterion (OR)". At the very bottom are four buttons: "Back", "Next", "Finish", and "Cancel".

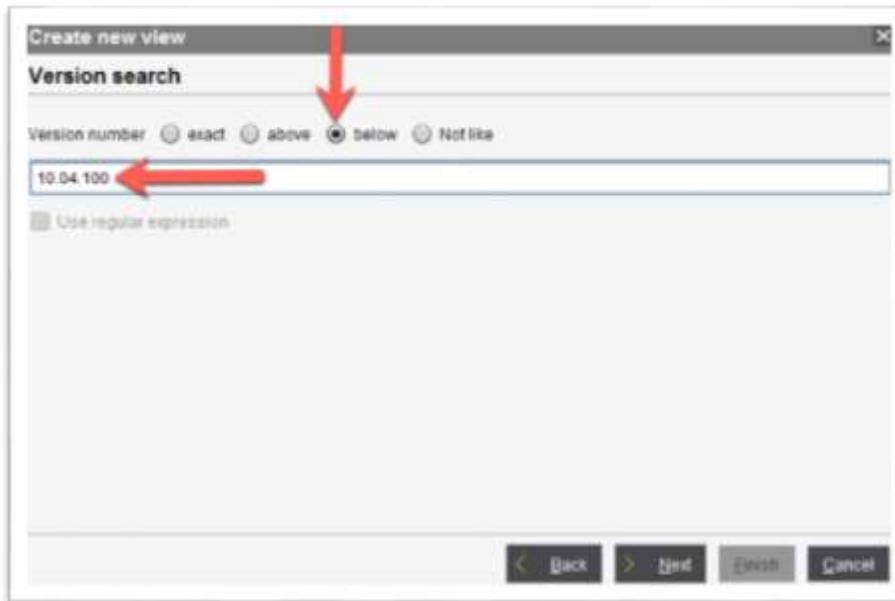
8. The next screen allows you to define the criteria the narrow your search. In the example below, we have used the Filter function to narrow the results to the item related to firmware. Click to check the **Firmware Version** radio button and then click **Next** to continue.

The screenshot shows the same dialog box, but the "Select criterion" tab is active. At the top, there is a text box containing the word "firmware" with a red arrow pointing to it. Below this, under the heading "Asset Inventory", there are three radio buttons: "Firmware Description", "Firmware Update (Relative)", and "Firmware Version" (which is selected and has a red arrow pointing to it). At the bottom are the same four buttons: "Back", "Next", "Finish", and "Cancel".

9. You are prompted to enter the version number you wish to build the list upon. You can define if the list contains all devices with the same version or the devices above/below or not like at all.

For this example, click the **below** radio button to build the list of all devices that are below the stated version number.

Enter the desired version number in the text box and click **Next** to continue.



The screenshot shows a dialog box titled "Create new view" with a sub-header "Version search". Below the sub-header, there are four radio buttons: "exact", "above", "below", and "Not like". The "below" radio button is selected. Below the radio buttons is a text box containing the version number "10.04.100". A checkbox labeled "Use regular expression" is located below the text box. At the bottom of the dialog box, there are four buttons: "Back", "Next", "Finish", and "Cancel". A red arrow points to the "below" radio button, and another red arrow points to the text box containing "10.04.100".

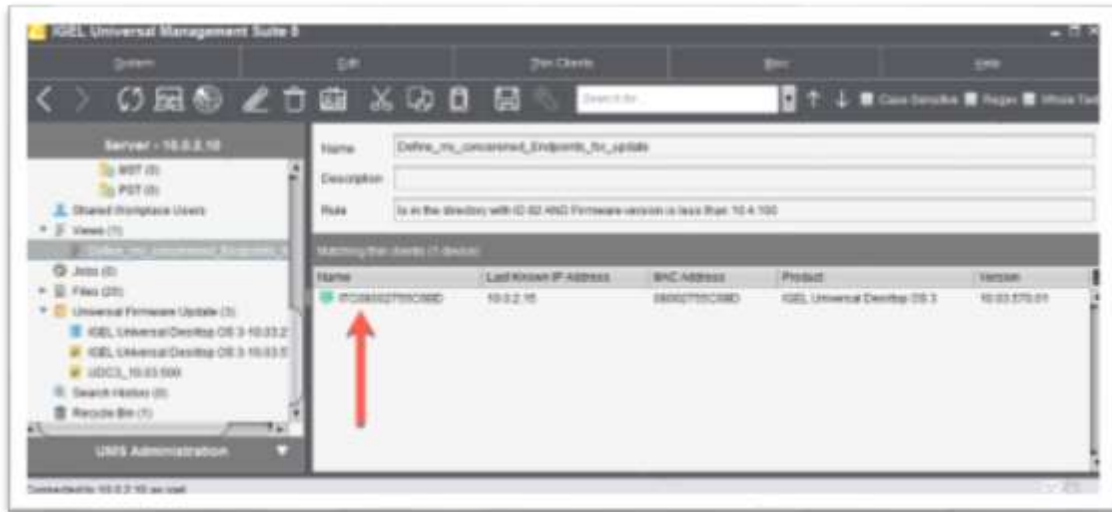
10. You are prompted if you would like to continue building your view or create additional search criteria. Though, we are done! Click the **Finish** button to have the UMS build the View.



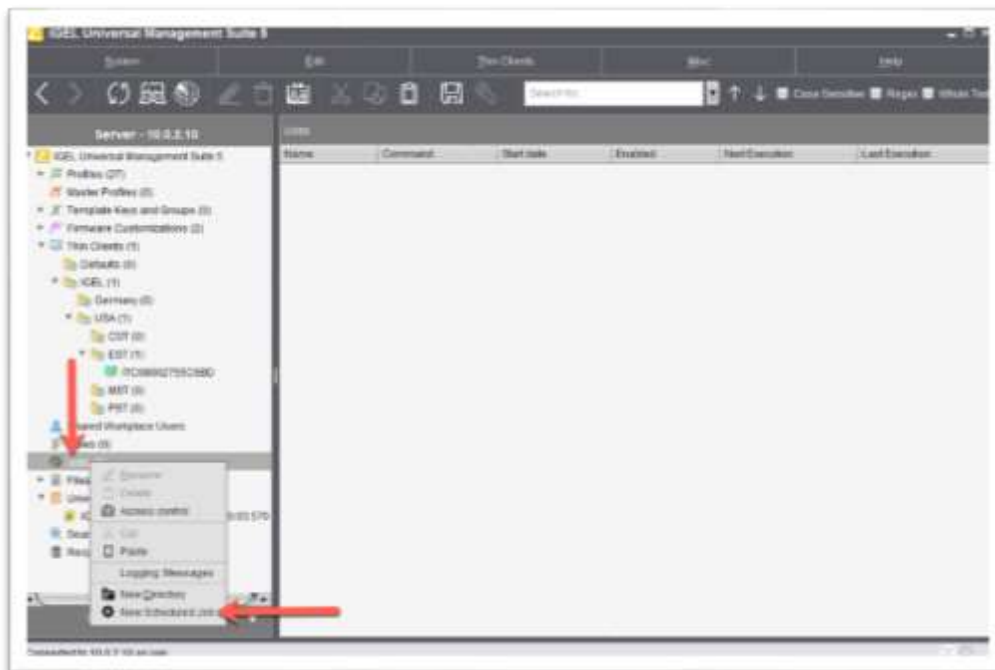
The screenshot shows a dialog box titled "Create new view" with a sub-header "Finish view creation". Below the sub-header, there are three text boxes: "Name" (containing "Define\_my\_concerned\_Endpoints\_for\_update"), "Description" (empty), and "View criteria" (containing "Is in the directory with ID R1 AND Firmware version is less than 10.4.100"). Below the text boxes, there are three radio buttons: "Create view", "Narrow search criterion (AND)", and "Create additional search criterion (OR)". The "Create view" radio button is selected. At the bottom of the dialog box, there are four buttons: "Back", "Next", "Finish", and "Cancel". A red arrow points to the "Finish" button.



11. You are brought back to the UMS, and your View is listed containing the client devices found. You are ready to create the Job and schedule the firmware update.



12. To trigger the IGEL OS firmware update via a UMS Job, right-click on the **Jobs** entry in the UMS' left menu and click the **New Scheduled Job** link.



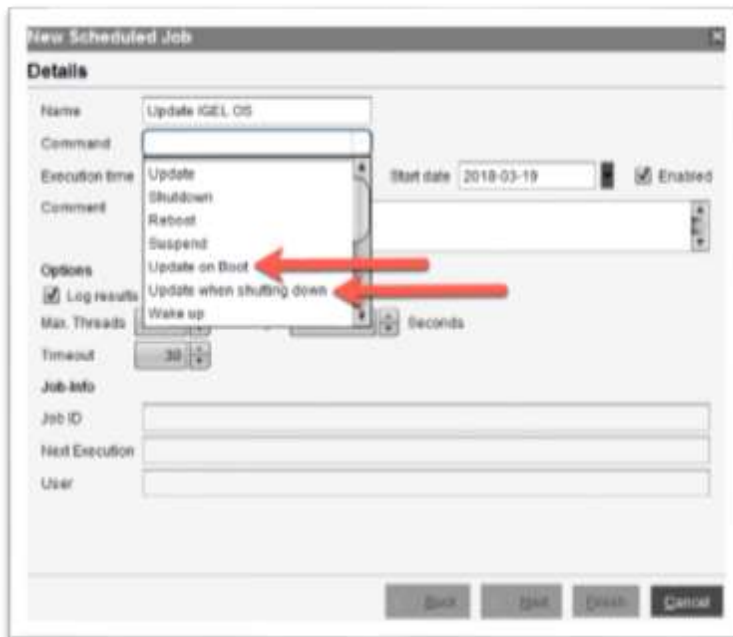
13. Enter a friendly name for the new job in the **Name** text box.



The screenshot shows the 'New Scheduled Job' dialog box. The 'Name' field is highlighted with a red arrow and contains the text 'Update IGEL OS'. The 'Command' field is a dropdown menu. The 'Execution time' is set to 15:18, and the 'Start date' is 2018-03-19. The 'Enabled' checkbox is checked. There are also 'Options' for logging results, max threads, timeout, and delay, and a 'Job Info' section with fields for Job ID, Next Execution, and User.

14. Click the **Command** combo box to reveal the list of possible commands you can schedule. In this list, you will find the ability to **Update on Boot** and **Update when shutting down**.

Select the desired command.



The screenshot shows the 'New Scheduled Job' dialog box with the 'Command' dropdown menu open. The dropdown list shows options: Update, Shutdown, Reboot, Suspend, Update on Boot, Update when shutting down, and Wake up. Red arrows point to 'Update on Boot' and 'Update when shutting down'.

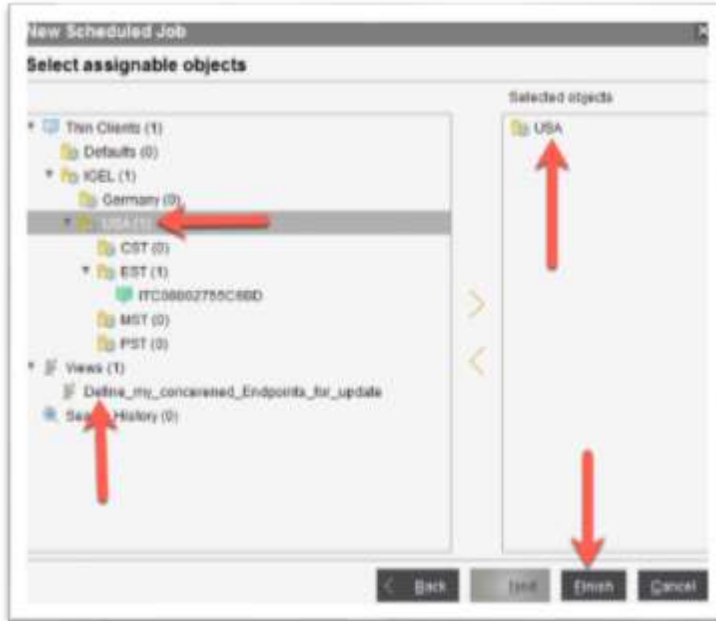
15. Next, configure the time you wish the command to execute in the **Execution time** text box and then select the day in the **Start date** text box. When finished, click the **Next** button to continue.

The screenshot shows the 'New Scheduled Job' dialog box with the 'Details' tab selected. The 'Name' field contains 'Update IGEL OS'. The 'Command' dropdown is set to 'Update on Boot'. The 'Execution time' is set to 18:00 and the 'Start date' is 2018-03-21. The 'Enabled' checkbox is checked. The 'Comment' field is empty. The 'Options' section includes 'Log results' (checked), 'Retry next boot' (unchecked), 'Max. Threads' (99), 'Delay' (0 seconds), and 'Timeout' (30). The 'Job info' section shows 'Job ID' (empty), 'Next Execution' (Mar 21, 2018 6:00 PM), and 'User' (empty). At the bottom, there are buttons for 'Back', 'Next', 'Finish', and 'Cancel'. A red arrow points to the 'Next' button.

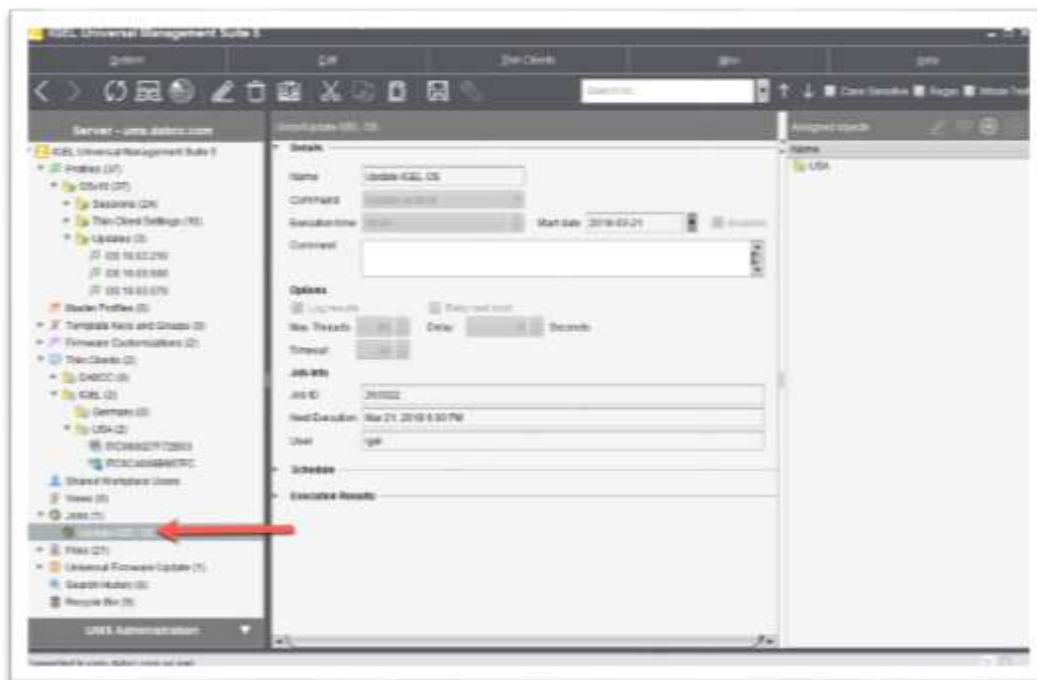
16. The next screen prompts you to define the specifics on when you would like the Job to execute. Familiarize yourself with the settings, though in our use-case all you need to do is click the **Next** button to continue.

The screenshot shows the 'New Scheduled Job' dialog box with the 'Schedule' tab selected. The 'Execution time' is 18:00 and the 'Start date' is 2018-03-21. The 'Expiration date' is empty. The 'Repeat Job' section is set to 'Every' day. The 'Exclude Public Holidays' checkbox is checked. The 'Cancel job execution' section has 'Never' selected. At the bottom, there are buttons for 'Back', 'Next', 'Finish', and 'Cancel'. A red arrow points to the 'Next' button.

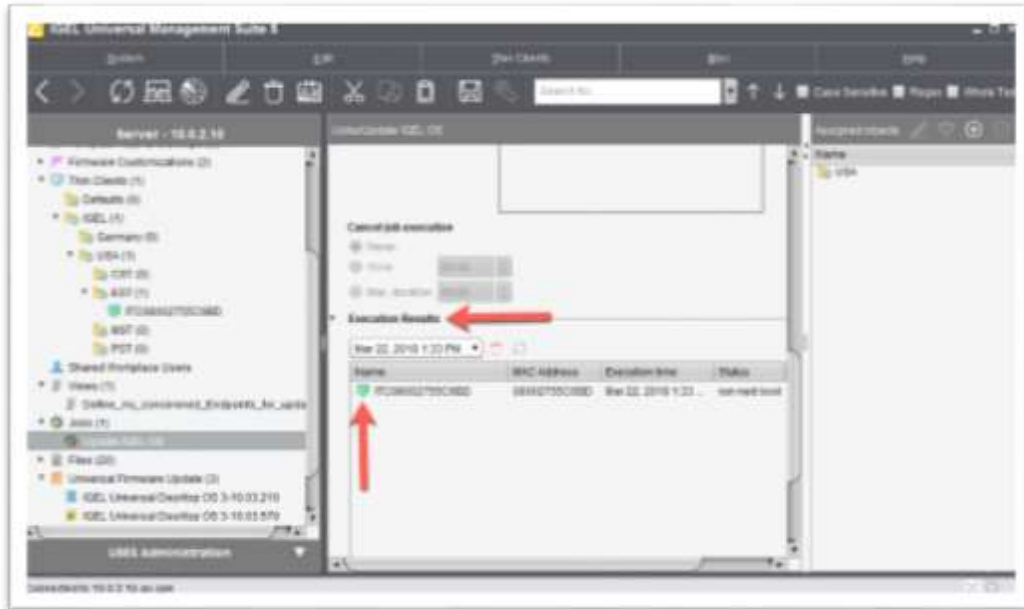
17. You are prompted to assign the desired IGEL OS devices you wish to add to the new Job. Click to select a folder, device, or View and click the top arrow button to move it to the **Selected objects** folder. Repeat this step to assign all the desired folders and devices and click the **Finish** button to create the new Job.



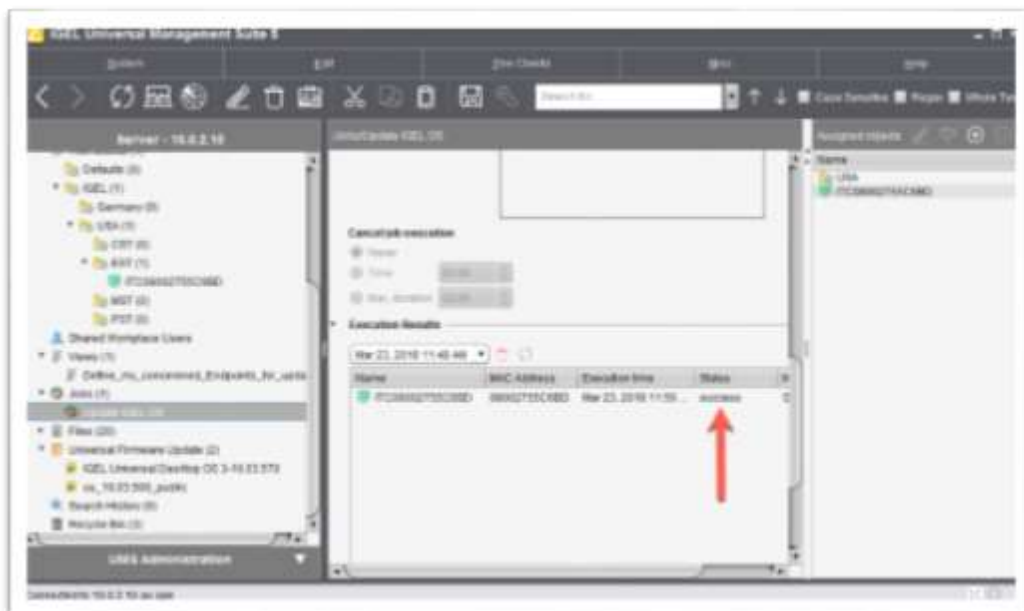
18. If all goes as planned, the Job is created, and you are presented with the Job's properties page.



19. You can view the Jobs status by scrolling down to the **Execution Results** section of the page. You are presented with a list of the devices in the Job along with the status. For example, the device in our example will run the firmware update the next time the device boots.

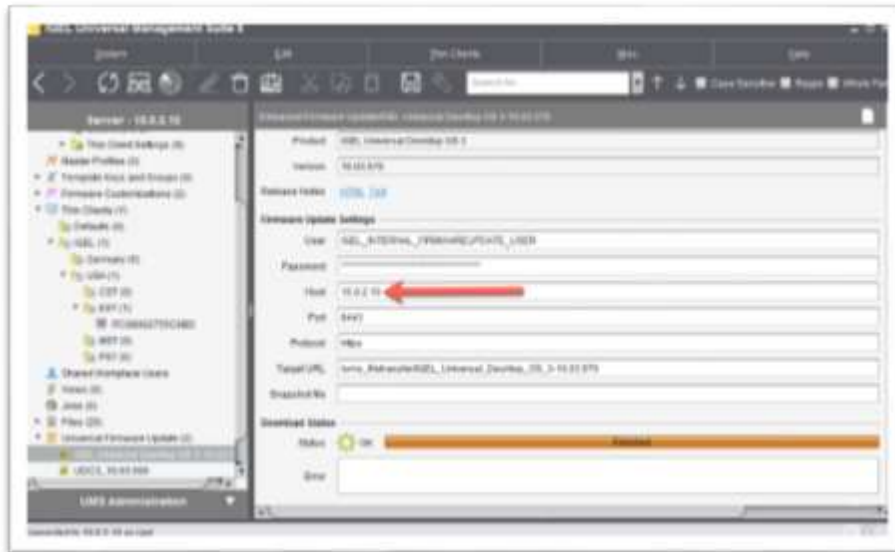


20. In the example below, you see the device was rebooted, and the firmware update was a success!

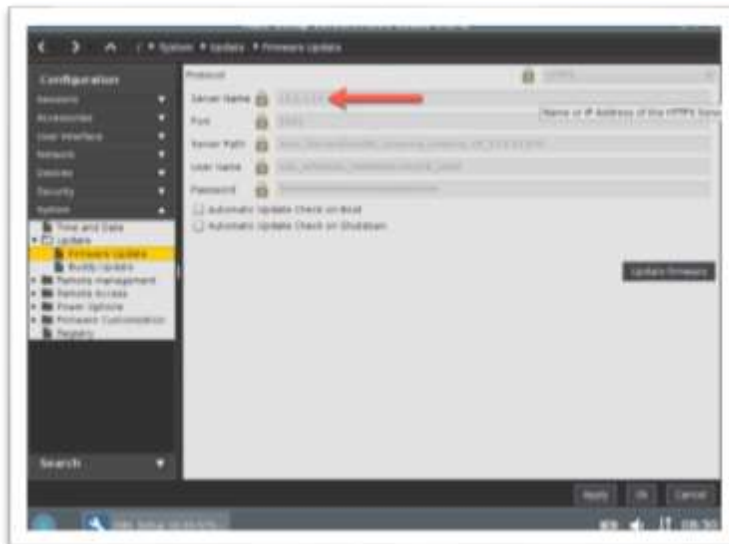


21. If you are not so lucky and the update fails, it is possible the device was not able to connect and download the firmware files. In this case, you will want to verify the host IP address is stated correctly in the **Host** text box of the desired firmware update.

The screenshot below works for when deploying updates via the UMS Universal firmware update feature.



22. You can also view these settings from the IGEL OS by clicking **Start** > **System** icon > **Setup**. Then click to expand the **System** node > click **Update** and then click the **Firmware Update** link to expose the firmware update settings that have been assigned to the local device. Verify the IP address is the address of the firmware repository and if not then verify you followed the above steps properly.

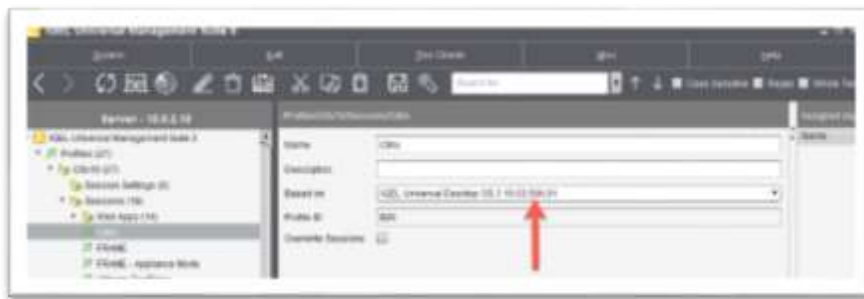


## 6. How to Update Existing Profiles

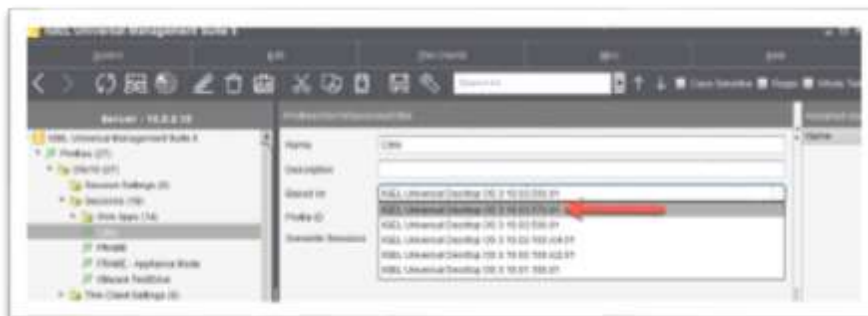
New versions of the IGEL OS might add new features and/or updates to installed applications, such as the Citrix Receiver. It is important to understand UMS profiles are specific to the firmware version they were based on, usually the latest version deployed at the time the profile was created. Thus, after you deploy firmware updates, it's recommended to go through your profiles and update the desired profiles to the latest version. Of course, this is only required if a new feature was added to the configuration you are deploying. For example, upgrading the Citrix Receiver to the latest version.

The following steps details how to update a profile to utilize the latest firmware configurations:

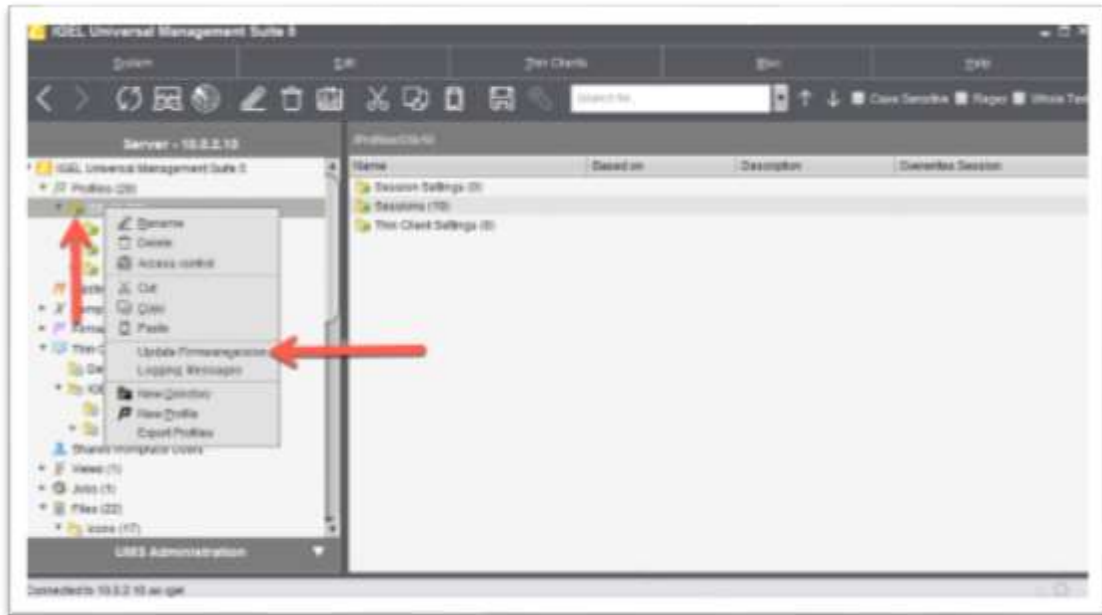
1. Browse to the desired profile and click it. You will be shown the profiles Name, Description, and Based on settings. The **Based on** combo box is the setting you need to click to upgrade to the desired firmware version.



2. Click the **Based on** combo box to expose the list of firmware versions available to assign to the profile. Select the desired version. Repeat this step for the profiles that have a new feature you wish your deployed devices to take advantage of.



3. If you have many profiles and wish you update them all to the latest firmware version at the same time, then you can use do this too. Right-click on the folder, be it the root or a subfolder and click the **Update Firmwareversion** link in the context menu.



4. The **Update profile to new firmware version** window opens allowing you to select the desired firmware version. Once selected, click the **OK** button to update all profiles at once.





5. If all goes as planned, you will be presented with the following popup telling you the update was successful! Click **OK** to continue.



For more information on how to update an existing profile and change the Citrix Receiver version, in case a new version was released, please refer to the following blog article <https://masterxen.wordpress.com/2018/03/21/post-igel-firmware-missing-new-citrix-receiver-version/>