

impero educationpro

Installation Guide

Impero learning series

English

© 2015 Impero Solutions Ltd.

power at your fingertips

impero

table of contents

Introduction	4
Minimum System Requirements	4
.NET	5
How to verify if you have the correct .NET Framework installed	5
Installing .NET 3.5 SP1 Framework	5
Installation	6
Download Impero Education Pro	6
Impero Server Installation	6
Installing Windows Clients	9
Group Policy	12
Installing Mac OSX Clients	14
Installing iOS Clients	14
Installing Chromebook Clients	14
Getting Started	16
Active Directory Settings	16
Impero Groups	17
Group Priorities	20
Console Access Rights	21
Browser Extensions	24
Internet Explorer	24
Google Chrome	25
Anti-Virus Exclusions	27
Training Materials	28

Advanced Settings	28
Reactivating Your Server	28
Troubleshooting Server Install	28
Troubleshooting Window Clients	30
Troubleshooting Apple Mac Clients	31
DNS Record	32
Terminal Services & Virtual Desktop Environments	32
Using Apple Xserve	34
Network Connections	35
Impero Server Outbound	36
Impero Client to Impero Server	36
Impero Client to Impero Client	37
Impero Client Loopback	37
Impero Server Backups	38

1 Introduction

This guide will take you through the process of installing and registering the Impero Server, and deploying the Impero clients. You will also find details of steps to help you get started with using Impero Education Pro, as well as some advanced troubleshooting topics to answer common questions.

2 Minimum System Requirements

Before proceeding with your installation of Impero Education Pro, please ensure you meet the minimum system requirements for the Impero Server and clients as specified below.

Impero Server:

- Microsoft Windows 7/8/8.1, Windows Server 2008/2008 R2/2012/2012 R2
- Microsoft .NET Framework 3.5 SP1
- 32 bit and 64 bit operating systems
- 2.0+ Dual Core processor
- 4 GB RAM
- Approximately 150 MB HDD for Installation
- 40 GB HDD for logs (Actual space requirement depends on your retention policy)
- TCP/IP connection
- Internet Connection required for registering Impero Server
- Impero recommends that the server is *not* installed on your Domain Controller

Note: Actual requirements will vary based on your system configuration, number of clients, and the applications and features you choose to install.

Impero Client:

Windows

- Microsoft Windows 7/8/8.1, Windows Server 2008/2008 R2/2012/2012 R2,
- Microsoft .NET Framework 3.5 SP1
- 32 bit and 64 bit operating systems
- Windows Installer 3.5
- 1.6 GHz x86-compatible processor
- 1 GB RAM
- TCP/IP connection
- At least 5 GB HDD space

Apple Mac

- Intel Mac
- Apple Mac OSX 10.9+ operating systems
- 32 bit and 64 bit operating systems
- TCP/IP connection
- At least 5 GB HDD space

iOS

- iOS v7.1.2+

Chrome OS

- Latest stable release

3 .NET

Both the Impero Server and the Impero client require .NET 3.5 SP1 framework in order to function correctly.

Note: .NET 3.5 SP1 is not included as part of .NET 4.

Please use the following checks to verify whether you have the correct version of .NET framework installed.

3.1 How to verify if you have the correct .NET Framework installed

Microsoft Server 2012

Control Panel > Programs and Features > Turn Windows features on or off

Click 'Next >' on the 'Add Roles and Features Wizard' window. Select 'Role-based or feature-based installation', and then click 'Next >' three times until you are at the 'Features' section. Ensure '**.NET Framework 3.5 Features**' is selected.

Please refer to Microsoft's Server documentation for official procedures as those above are intended for demonstration purposes only.

Microsoft Server 2008

Start > Administrative Tools > Server Manager > Features

Under features installed you are looking for .NET 3.0 or .NET 3.5.1. If you do not see either of these features then you will need to click on 'Add Feature' and select .NET.

Please refer to Microsoft's Server documentation for official procedures as those above are intended for demonstration purposes only.

Microsoft Windows 8.1 / 8 / 7

Control Panel > Programs > Programs and Features > Turn Windows features on or off

In the list of features, check for Microsoft .NET Framework 3.5.1, which should have a filled in checkbox marked next to it.

Note: Windows 7 standard installation has a partial install of Microsoft .NET 3.5.1 framework that will work with Impero software. Reminder: Microsoft .NET 4 does not include the correct .NET framework needed to run Impero software.

Please refer to Microsoft's Server documentation for official procedures as those above are intended for demonstration purposes only.

3.2 Installing .NET 3.5 SP1 Framework

If you do not have the correct version of .NET Framework installed, this can be downloaded from the Impero [website](#).

support downloads

microsoft .net framework

[.NET Framework 3.5 SP1 \(XP/2003/2008\) Full Package](#)

[.NET Framework 3.5 SP1 \(XP/2003/2008\) Bootstrapper](#)

[Install .NET Framework 3.5 as a feature \(Windows 8\)](#)

[Install .NET Framework 3.5 as a feature \(Windows Server 2012\)](#)

Image 1 - .NET Download

Click on the relevant link to be redirected to the Microsoft website where you can download the correct version of .NET Framework.

Follow the instructions on the Microsoft website, ensuring you download the correct version relevant to the operating system you are running. Once the download has completed, locate downloaded the file and double click to launch the installer.

4 Installation

4.1 Download Impero Education Pro

Once the minimum system requirements have been satisfied, you are able to continue and download the Impero Education Pro installation package and commence the installation.

You will require an activation code to download and register Impero Education Pro. If you already have an activation code, please contact [Impero Support](#), quoting your activation code in order for the downloads to be made available to you.

If you do not yet have an activation code, please either contact [Impero Sales](#) or request a code from [here](#).

There are three downloads that will be available to you:

ImperoServerSetupXXXX.msi

This is the Impero Server install file.

ImperoClientSetupXXXX.msi

This is the Impero client install file for Windows.

ImperoClientSetupMACXXXX.zip

Extract this zip file to locate the Impero client install file for Mac OSX in dmg format.

*XXXX will be the version number of Impero Education Pro that has been made available to you.

4.2 Impero Server Installation

Once you have downloaded the Impero Education Pro install files, locate '**ImperoServerSetupXXXX.msi**', and double-click it. You will then be prompted to go through the installation steps:

1. You may be prompted with a security warning asking if you wish to run this file. Click on '**Run**'.
2. On the welcome screen, click on '**Next**'.
3. Read through the End-User License Agreement. If you accept the terms, select the checkbox to mark your acceptance and click on '**Next**'.
4. You are then prompted to select an install location for the Impero Server. If you are happy with the default location, click on '**Next**' and skip to step 7.
5. If you wish to change the install location, click on '**Browse**' to navigate to an alternate location.
6. Once you have selected your alternate location, click on '**Next**'.
7. Click '**Install**'.
8. Once the installation has completed, click on the '**Finish**' button to close the Impero Server Setup wizard window.
9. Impero Server is now installed. In order to continue setting up Impero, you then need to register your Impero Server.

Registering the Impero Server

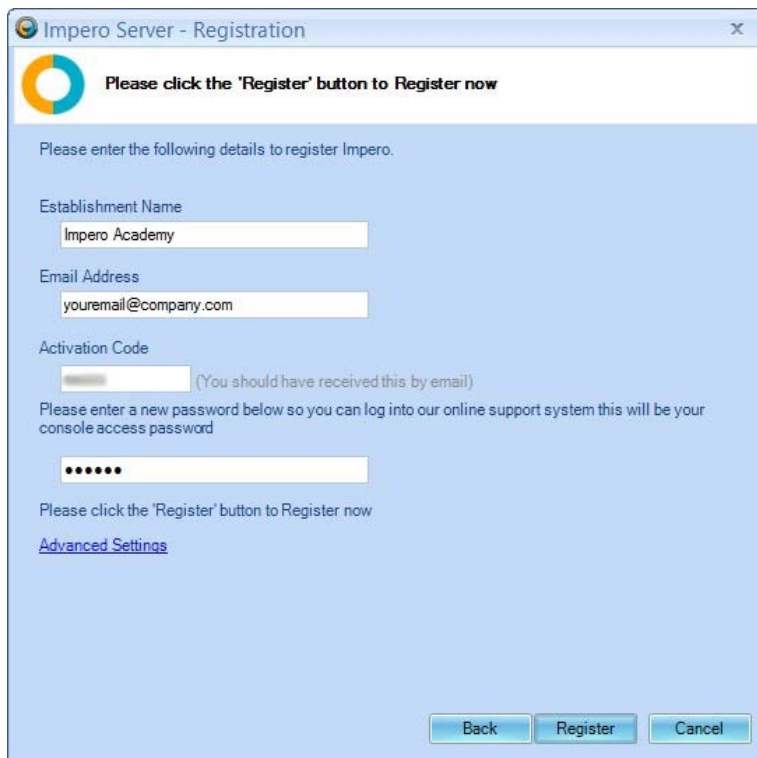
1. Double click on the new Impero Server icon on your desktop (Image 2).



Image 2 - Impero Server Icon

2. You will then see an 'Introduction' window explaining the registration process. Please read this window, and then click on '**Next**'.

3. On the following screen, enter your Establishment Name, Activation Code and a desired password. This password will be used to access the Impero online support portal, as well as become your default Impero Console access password; although this can be changed once your server is registered. Once these details are entered, please click '**Register**' (Image 2.1).

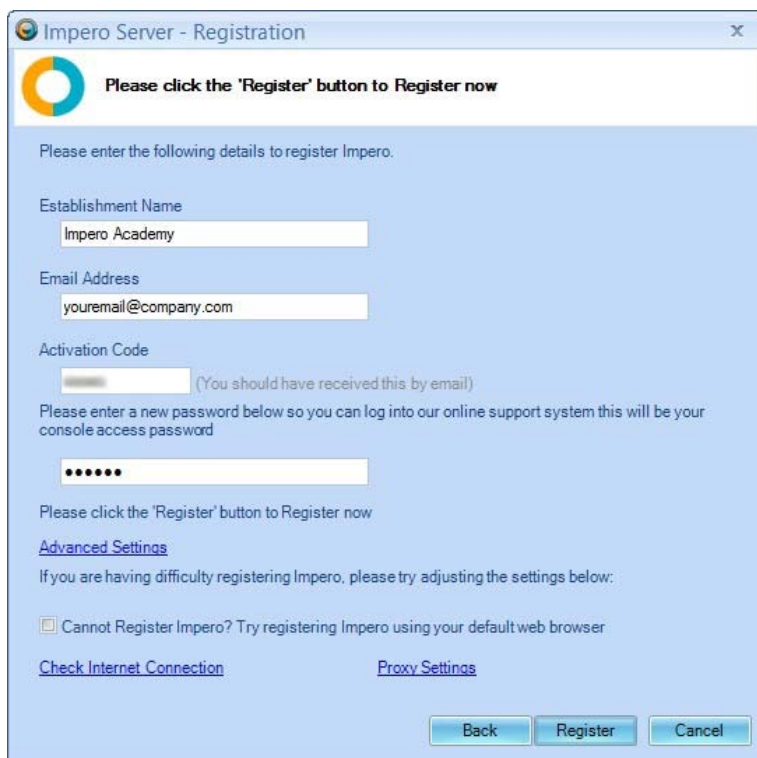


The screenshot shows the 'Impero Server - Registration' window. At the top, there is a header bar with the Impero logo and the text 'Please click the 'Register' button to Register now'. Below this, a message says 'Please enter the following details to register Impero.' The form contains the following fields: 'Establishment Name' with the value 'Impero Academy', 'Email Address' with the value 'youremail@company.com', and 'Activation Code' with a masked value and a note '(You should have received this by email)'. Below these is a password field with masked characters and a note 'Please enter a new password below so you can log into our online support system this will be your console access password'. At the bottom, there is a message 'Please click the 'Register' button to Register now' and a link for 'Advanced Settings'. The bottom right corner has three buttons: 'Back', 'Register', and 'Cancel'.

Image 2.1 - Impero Server Activation

4. If the registration is successful, please skip ahead to Step 15. If the Impero Server failed to register, please continue to Step 5.

5. If your Impero Server failed to register, click on '**Advanced Settings**' (Image 2.2)



The screenshot shows the 'Impero Server - Registration' window with the 'Advanced Settings' section expanded. The top part of the form is identical to Image 2.1. Below the password field, there is a message 'Please click the 'Register' button to Register now' and a link for 'Advanced Settings'. The 'Advanced Settings' section is titled 'If you are having difficulty registering Impero, please try adjusting the settings below:'. It contains a checkbox labeled 'Cannot Register Impero? Try registering Impero using your default web browser'. Below this, there are two links: 'Check Internet Connection' and 'Proxy Settings'. The bottom right corner has three buttons: 'Back', 'Register', and 'Cancel'.

Image 2.2 - Impero Activation Advanced Settings

6. If you are using a Proxy Server, click on '**Proxy Settings**'. Enter the relevant details and click on '**OK**' (Image 2.3):

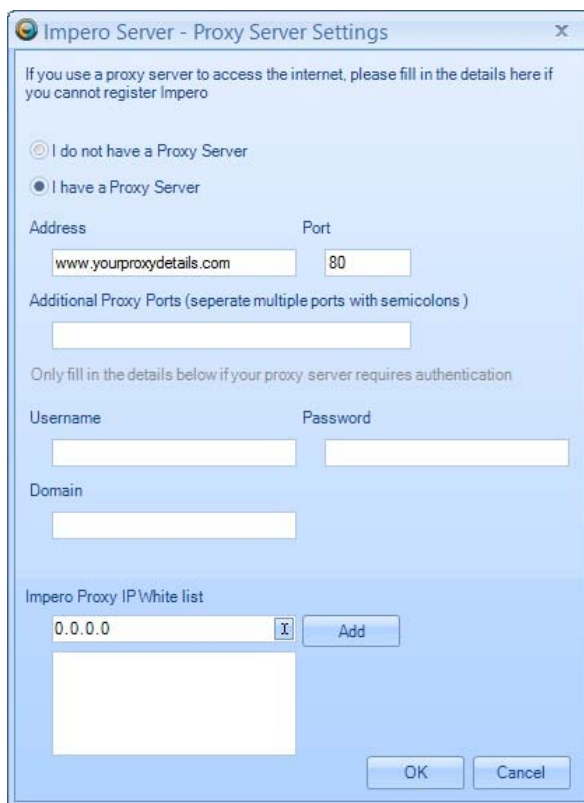


Image 2.3 - Impero Server Advanced Proxy Settings

7. Click on the **'Register'** button
8. If the registration is successful, please skip ahead to Step 15. If the Impero Server still failed to register, please continue to Step 9.
9. Tick the box next to **'Cannot Register Impero? Try registering Impero using your default web browser'**, located under Advanced Settings (Image 2.2).
10. Click **'Register'**. This will open the 'Register Impero using a Browser' wizard (Image 2.4).

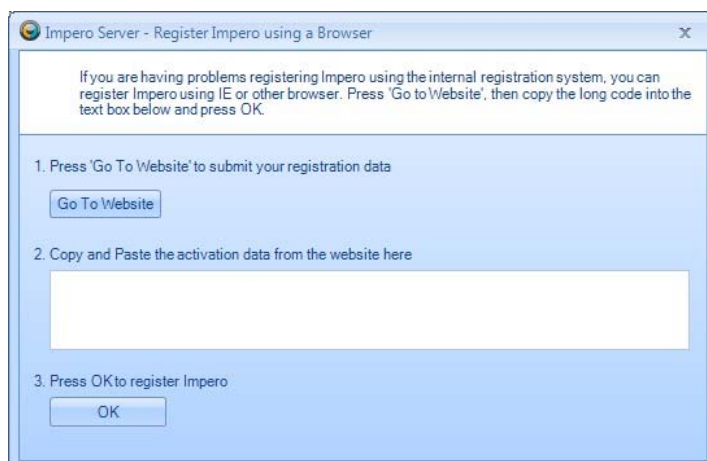


Image 2.4 - Register Impero using a Browser

11. Click **'Go To Website'**.
12. This will open your default web browser, and display an activation string. Select the string, and copy (CTRL + C) to your clipboard.
13. Switch back to the **'Register Impero using a Browser'** window (Image 2.4), and paste your activation string (CTRL + V) into the text area.
14. Click the **'OK'** button, which should now register your Impero Server.
15. Once the registration is complete you will be presented with a 'Registration Complete' dialogue box. Take note of the details, and click on **'Finish'**.

16. You should now also receive an email confirming these details.
17. You are now ready to install the Impero Client across your network.

4.3 Installing Windows Clients

Once your Impero Server has been installed, you are then able to start installing the Impero Client. In order to do so, return to the '**ImperoClientSetupXXXX.msi**' file that you previously downloaded. Double-click this on the computer where you wish to install your first client*.

**The ImperoClientSetupXXXX.msi file is the installer for both the Impero 'teacher' Console and the Impero 'student' workstation.*

An 'Impero Console' desktop icon will be created and a system tray notification pop-up message will tell you when the client is active (Image 3). You can then begin to use the Impero Console, or continue to install further clients across your network.



Image 3 - Client Installed

You can use the Impero Console to deploy clients to your network.

Double-click the 'Impero Console' icon on your desktop, and when prompted enter your Console Access password - this was the password you created when registering your Impero Server earlier. This will launch your Impero Console. Click the 'Admin' menu icon and then select 'Deploy MSI' (Image 3.1).



Image 3.1 - Deploy MSI

This will now open the 'Impero - Remote Deploy MSI' wizard (Image 3.2) which gives you three options with which you can deploy the Impero Client to your network.

First you must select the desired computers to install the Impero Client to. You can do this a number of different ways; **Found Computers**, **Manual Add** and **Add Domain**.

Step 1 - Selecting Computers

Found Computers

You will be presented with a list of computers that have been found on your network by your computer on the left-hand side. You simply need to tick the computers that you would like to install the Impero Client on, and those that you have ticked will appear in the right-hand panel.

Note: This will only show computers that have been discovered by your Computer Browser service. This will only show PC's that have been switched on for at least 12 minutes and are also on the same VLAN. If it has not found the desired computers, see the 'Manual Add' and 'Add Domain' options.

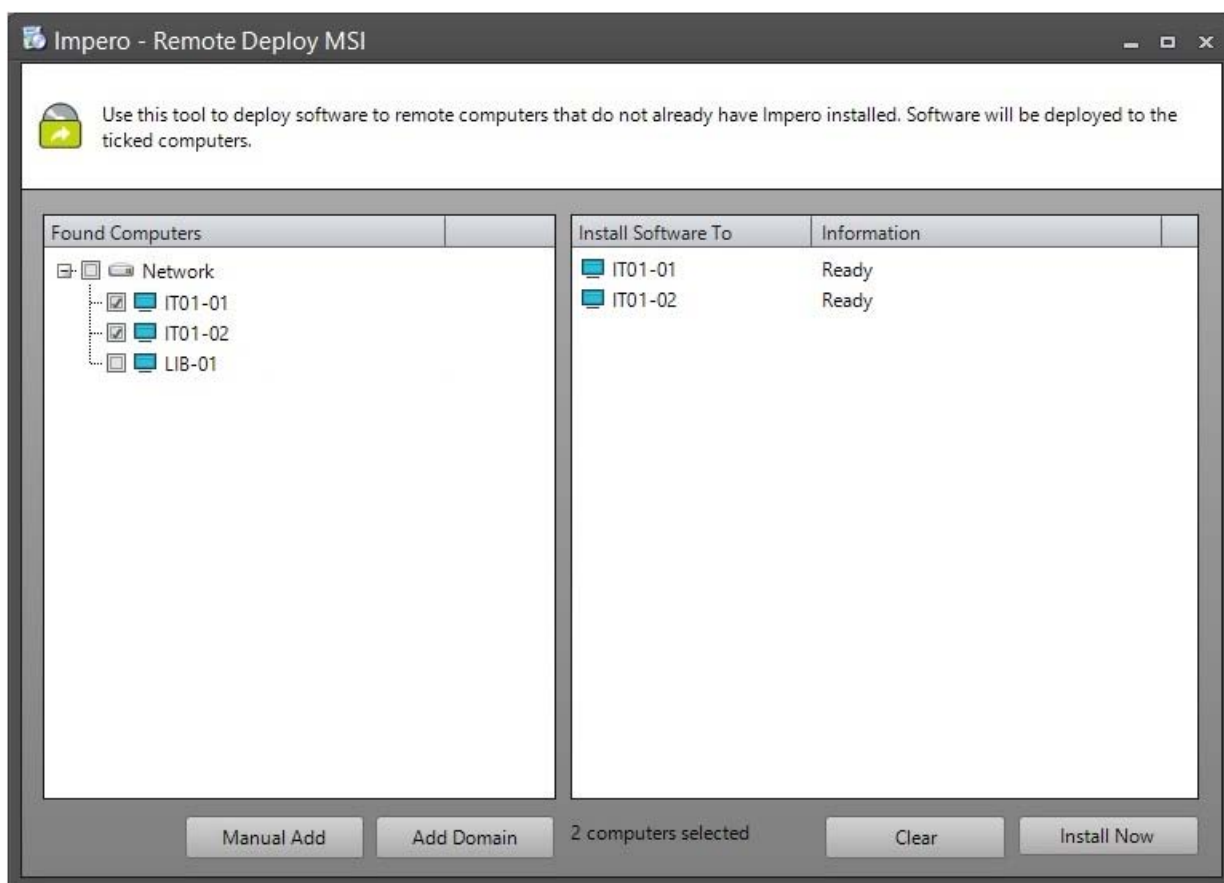


Image 3.2 - Remote Install Client, Found Computers

Manual Add

Enter a computer name or IP Address

This option allows you to either enter the computer name or the IP Address of the computer you would like to install Impero client on (Image 3.3).

Enter an IP Address Range

This allows you to enter a starting IP Address and an ending IP Address (Image 3.3). The 'Impero - Remote Deployment' wizard will then try to install the Impero Client to every IP Address in that range.

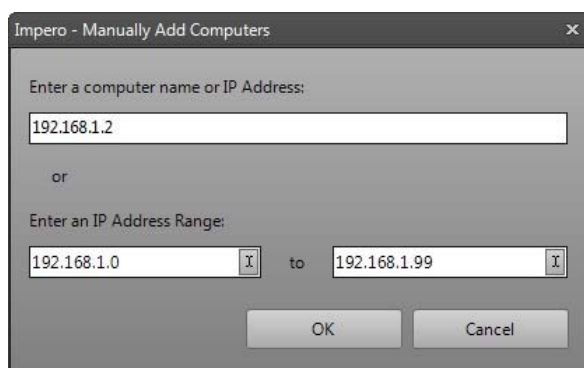



Image 3.3 - Manual Add

Any entries that you have added using either of these methods will then load a list of the Computer Names/IP Addresses into the right-hand panel of the 'Impero - Remote Deploy MSI' window.

Add Domain

This option will allow you to load your Active Directory (AD) structure into the 'Impero - Remote Deploy MSI' wizard (Image 3.4). Enter your Active Directory details and a valid set of credentials with which you can connect to your AD, and click 'OK'.

This will then load your AD structure into the 'Found Computers' panel on the left-hand side, underneath the list of computers that have been discovered on your network.

If you do not see your AD structure, you may need to minimise the 'Network' node by clicking on the  icon to the left of the 'Network' heading.

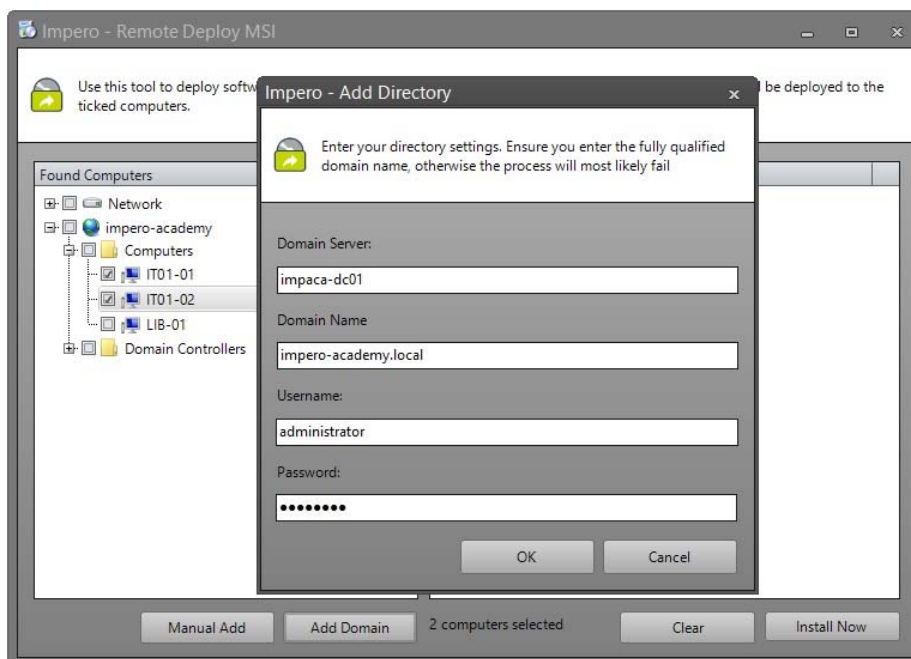


Image 3.4 - Add Domain

You then need to tick the computers that you would like to install the Impero Client on, and those that you have ticked will appear in the right-hand panel.

Step 2 - Installing the Client

- Once you have selected the remote computer(s) using your preferred method from Step 1, click the '**Install Now**' button.
- On the dialogue box 'Impero - Choose MSI', select 'Browse' to locate the ImperoClientSetupXXXX.msi. This file must be local to this machine as the MSI deployment tool does not support the use of shared directories.
- Leave the 'Enter Parameters' dialogue box blank as Impero Client already has the parameter silently built-in.
- Click '**OK**'.
- Click '**OK**' on the dialogue box warning you that Impero requires Microsoft .NET 2 Framework.
- In the 'Impero - Enter Password' dialogue box, enter a username and password that will allow you connection to the remote computer(s). You may choose to use a local admin user account or a domain admin user account.

Local Account:

Username: Administrator
Password: password

Domain Account:

Username: Domain\Administrator
Password: password

- Click '**OK**'.
- In the 'Impero - Enter Server IP' dialogue box, enter the IP Address of your Impero Server. If you do not know the IP Address, you can leave this blank as the Impero Client will do a UDP Broadcast to find the Impero Server. If you use multiple VLANs across your network, you will need to enter the IP Address of your Impero Server at this stage, or see creating a [DNS record](#).
- Click '**OK**'.
- The Remote Deploy Wizard will now install the Impero Client on the computers you have selected. It will only deploy to ten computers at a time, reducing the amount of traffic on your network. As one client deployment finishes, another will start.
- You will either see 'Installation Successful' or an error message. If you receive an error message please refer to [troubleshooting Windows clients](#).

Manual Installation of the Impero Client

In order to manually install the Impero Client on a computer, locate and run the ImperoClientSetupXXXX.msi file on the local PC. You can navigate to your Impero Server to retrieve this file from the following location:

64 bit machines - 'C:\Program Files (x86)\Impero Solutions Ltd\Impero Server\Updates\ImperoClientSetupXXXX.msi'

32 bit machines - 'C:\Program Files\Impero Solutions Ltd\Impero Server\Updates\ImperoClientSetupXXXX.msi'

Copy the ImperoClientSetupXXXX.msi file to the machine that you wish to install the client on, and run the file.

Once it has finished the 'Impero Client' window will disappear and an 'Impero Console' desktop icon will be created. Once the Impero Client Service has started a system tray notification will pop-up a message telling you that it has connected to the Impero Server (Image 3.3). You can now begin to use the Impero Console.



Image 3.3 - Client Installed

FAQ's for Advanced Users

Q. Can I include the Impero Client in a default image that can be pushed out to the rest of the network?

A. Yes, Impero can be installed on a master image that then can be pushed out to the rest of the network. Impero will not require any additional configuration settings once it has been installed on the image.

Q. What if we use multiple VLAN's on our network?

A. Impero supports multiple VLAN's. You just need to create a [DNS Record](#) or, when you remote deploy the Impero Client be sure to enter the IP Address of the Impero Server when prompted to do so.

Q. Can I use Group Policy Object (GPO) to deploy the Impero Client?

A. You may deploy the clients using Group Policy. Please refer to the Group Policy chapter of this guide, or the [Microsoft website](#) for additional information.

Q. We have Thin Clients on our network, will Impero work?

A. Yes, Impero supports many different types of Thin Client, i.e. Terminal Server, NComputing, VMware, Citrix.

4.3.1 Group Policy

You can use Group Policy (GPO) to deploy the Impero Client across your network.

You will first need to create a distribution point on your server, which is a shared network folder from which the Impero Client will be distributed. Ensure that your Impero client MSI file is copied to this network folder.

You can now configure a GPO to distribute the Impero client MSI. In 'Group Policy Management', create a new GPO or add to an existing object. Right-click on the desired policy and select 'Edit' to open the 'Group Policy Management Editor' window. On the left-hand side of this window, choose whether you wish to distribute the client via 'Computer' or 'User', and browse to '**Policies > Software Settings**'. Right-click '**Software installation**', and select '**New > Package**' (Image 4).

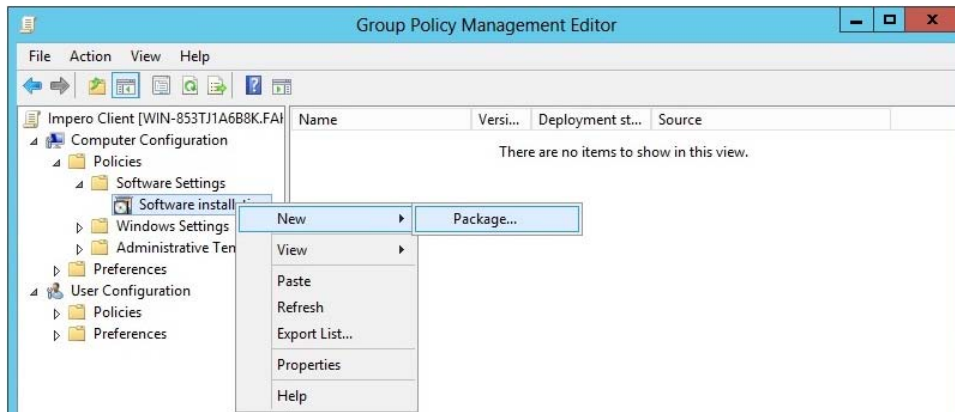


Image 4 - New Group Policy Package

Browse to the shared network folder you previously set up, select the Impero client MSI that you copied into this folder, and click 'Open'.

If you are prompted with a 'Deploy Software' pop-up, select 'Assigned' and click the 'OK' button. The selected file should now appear on the right-hand side of the window (Image 4.1).

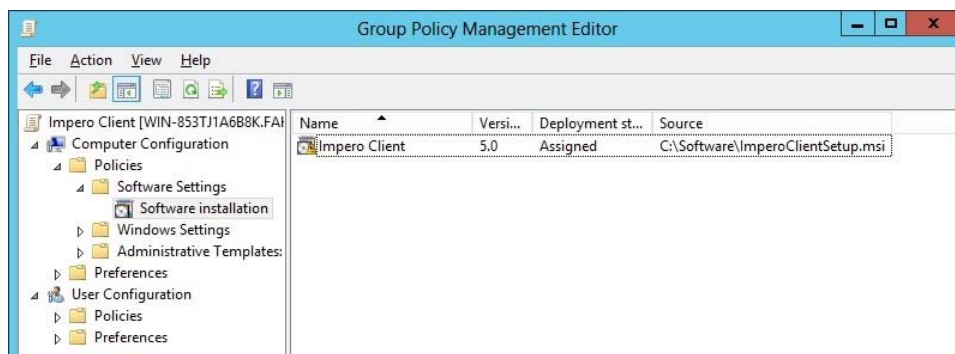


Image 4.1 - Impero Client GPO

Close the 'Group Policy Management Editor' to return to the 'Group Policy Management' window. You can now define where you wish to install the Impero Client using GPO. Select the GPO to which you added the Impero Client on the left of this window. On the right-hand side, in the 'Security Filtering' panel, click on 'Add'. Enter the name of the group to which you wish to distribute the client, and click on 'OK' (Image 4.2).

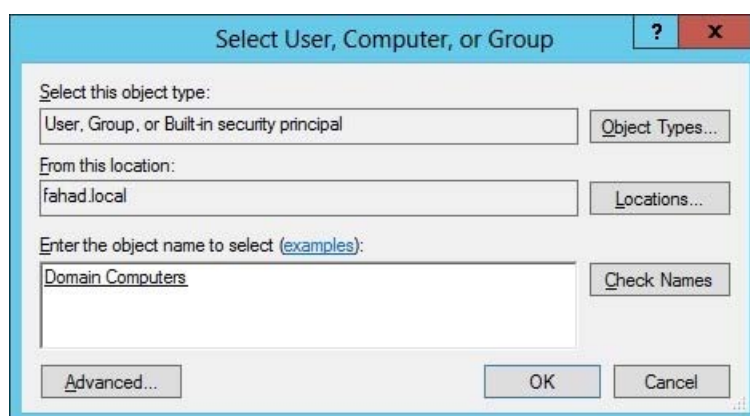


Image 4.2 - Distribution Group

Computers on your network may require a reboot before they pick up any changes made to your Group Policy. For further information on using Group Policy to deploy MSI files on your network, please visit the [Microsoft website](#).

4.4 Installing Mac OSX Clients

The Impero Mac OSX client provides many of the same capabilities of the Windows client and gives you the ability to manage the OSX machine from any Windows operating system.

Locate the 'ImperoClientSetupMACXXXX.zip' file you earlier downloaded, and extract it. The extracted folder will contain the .dmg file that you will need to run on the Mac OSX machine to install the Impero client. The .dmg file will need to be manually on the OSX machine, or run by any other means that you have to deploy to OSX machines, i.e. Apple Remote Desktop.

Note: Once the Impero Apple Mac software is installed, you then will be able to use Impero to deploy software to your Macs.

To install manually, double click the downloaded file and navigate through the following steps. Once the install has finished the program will disappear. A notification in the Finder bar will inform you when the client has connected to the Impero Server.

If you have any issues please see the section on '[Troubleshooting Apple Mac Clients](#)'.

4.5 Installing iOS Clients

The 'Impero iOS Pro' application can be downloaded for free directly onto your iOS device. Using the 'Safari' app on your iOS device, please navigate to:

itms-services://?action=download-manifest&url=https://www.imperosoftware.co.uk/release/Impero.plist

You will be prompted to install the 'Impero Edu Pro' application (Image 5).

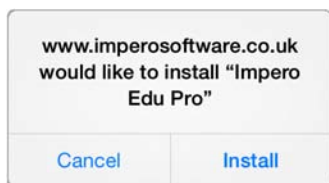


Image 5 - Install App

Click on '**Install**'; you will then see the 'Impero iOS Pro' icon on your home screen.

In order to point the iOS device to your Impero Server, open the 'Settings' application on the device and locate '**Impero iOS Pro**'. Add the IP Address or Hostname of your Impero Server and the TCP Port number which should be set to '**30015**'.

The Impero iOS Pro app can also be installed to multiple devices using a 'Mobile Device Management' (MDM) solution.

For further information on the Impero iOS Pro application, please see the [iOS Pro manual](#).

4.6 Installing Chromebook Clients

In order to install the Impero application to your Chromebook device, you will need to download the [Impero Client Application](#) and [Impero Client Extension](#) from the Chrome Web Store. Click on the 'FREE' button in order to download and install the two applications (Image 6)

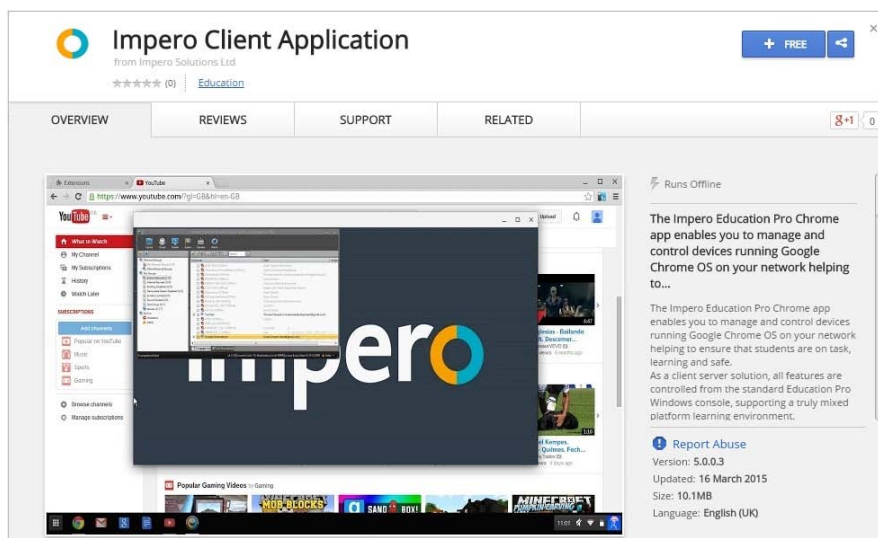


Image 6 - Application Download

When prompted to confirm the new applications, click on the '**Add**' button (Image 6.1).

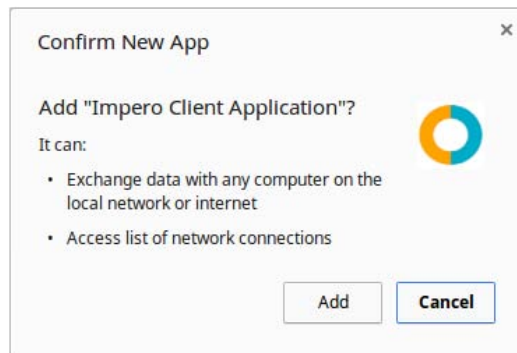


Image 6.1 - Confirm New App

To verify that your applications have installed, launch your Google Chrome browser and navigate to '**chrome://extensions**'. Ensure that 'Impero Client Application' and 'Impero Client Extension' both appear in your list of browser extensions and are both set to 'Enabled' (Image 6.2).

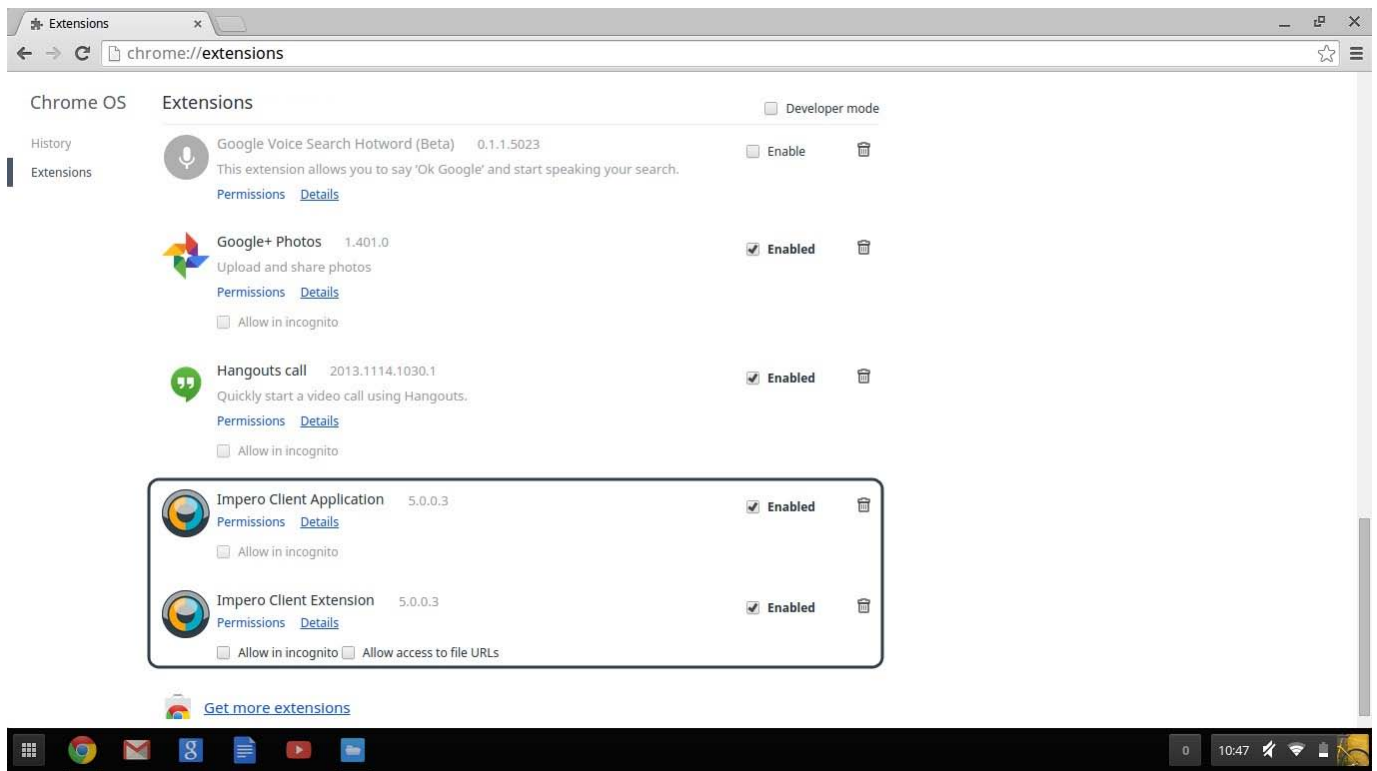


Image 6.2 - Chrome Extensions

Once downloaded and installed, you will need to configure your Impero Chromebook application to connect to your Impero Server. In order to do this, first launch your Google Chrome web browser. Double-tap the area under the URL bar to open the 'Bookmarks' menu, and select '**Add page...**'.

The 'Edit Bookmark' page will now open. In the 'Name' field, enter '**Impero Server**', and in the 'URL' field enter the IP Address of your Impero Server machine, i.e. 672.66.60.46 (Image 6.3). Once entered, click on '**Save**'.

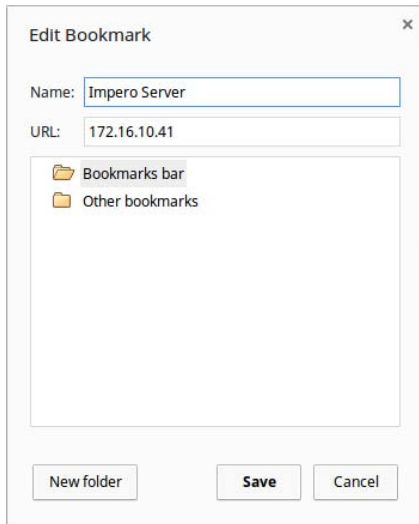


Image 6.3 - Edit Bookmark

This bookmark must be present for the Chromebook to connect to the correct Impero Server. You may need to reboot your device after adding the bookmark in order for the change to take affect.

The Chromebook application and extension can also be deployed through Chrome Management Console. For further details on Chromebook integration with Impero Education Pro, please see the [Chromebook manual](#).

5 Getting Started

Once you have installed your Impero Server and your first Impero clients, there are a few recommended configuration steps you can carry out to ensure you take full advantage of the features within Impero Education Pro.

The recommended configuration will involve integrating Impero with Active Directory, creating groups within the Impero Console, and setting up your Console Access Rights within the Impero Server.

5.1 Active Directory Settings

Impero Education Pro has the ability to integrate with your Active Directory (AD), allowing you to import users to Impero from AD amongst other features such as password changes. Impero will never write to your AD.

In order to set the integration with AD, open your Impero Server. Select the '**Settings**' tab; the '**Active Directory Settings**' sub-tab will then display (Image 7).

Some elements of Impero assume that Active Directory access is available. These details are required if linking to Active Directory.

Fully qualified Domain Name(FQDN) of a Directory Server (e.g- servername.test.local)

User name (Format: DOMAIN\USERNAME)

Password

☐ Force Google Chromebooks to authenticate with Active Directory

Image 7 - Active Directory Settings

Enter your AD server details into the three available fields.

Please ensure that you enter the Fully Qualified Domain Name of your AD server into the first field, and include the domain name in the second field. Click the **'Test Directory Settings'** button in order to verify the connection to your AD server.

A further option here allows you to prompt Chromebook device users to enter the AD credentials upon logging into the device so that their username appears against any logs from the Chromebook device.

Once your AD settings are successfully applied, you can move onto creating groups within the Impero Console.

5.2 Impero Groups

To create groups within Impero, first launch the Console by double-clicking the 'Impero Console' shortcut on your desktop. Enter your Console password (created when registering your Impero Server), which will open the Console on your screen, displaying all the clients you have installed Impero to on the right-hand side of the window.

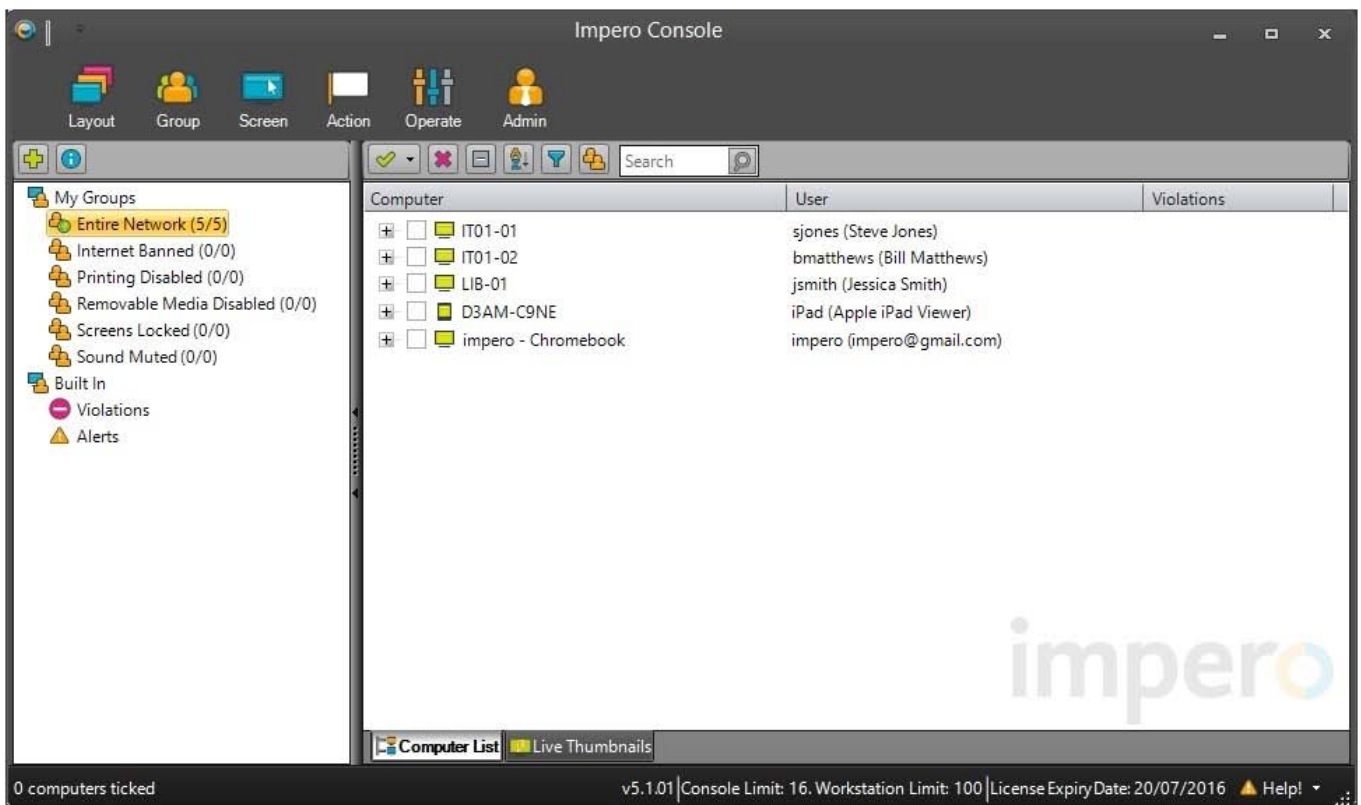


Image 8 - Impero Console

On the left-hand side of the Console window, you will see the six default groups that are automatically created within Impero. The 'Entire Network' group will contain all Impero clients that are installed on your network and connected to the Impero Server. The following five groups - 'Internet Banned', 'Printing Disabled', 'Removable Media Disabled', 'Screens Locked', 'Sound Muted' - allow you to place restrictions on specific users by adding them to the group.

In addition to the six default groups, you are able to create your own groupings in Impero by creating custom 'Computer' groups and 'User' groups.

Computer Groups

A computer group can contain any grouping of computers, i.e. IT suites, classrooms, laptop trolleys etc. The group will contain these computers regardless of the user that is logged into them.

User Groups

A user group can contain any grouping of users, i.e. staff, students, year 8 students etc. The group will contain these users regardless of which computer they log into. These groups can be imported from Active Directory.

To create a custom group, click the  icon in the top left of the Console window, above the list of groups. You will then see the 'Add Group' window (Image 8.1).

Image 8.1 - Add Group

There are a number of fields in this window to complete in order to create your group:

Name of Group

Allocate an appropriate name for your group, i.e. 'IT Suite', 'Laptop Trolley' for computer groups, 'All Staff', 'Year 10' for user groups.

Group Priority

You can choose a priority from 'Low', 'Medium' or 'High'. Typically a computer group is set to 'Low' while a user group is set to 'Medium' or 'High'. Please see the 'Group Priorities' section for a full explanation of priorities and best practices.

Type of Group

Select from the drop-down list whether you are creating a 'Computer' or 'User' group.

Existing Group Members

Under this section you are able to add or edit the members of the group you are creating:

Computer Group Members

If you have selected 'Computer' in the 'Type of Group' drop-down list, you will need to add the required computers to the 'Existing Group Members' area. Click the **[Add New Member]** link under the 'Member Name' column.

A new row will appear where you can add a new member to the group. You can enter the client 'hostname' to the 'Member Name' field to add a specific computer to the group. You can also choose to populate this group using any of the methods displayed in the 'Search Tag' drop-down list.

The 'Member Name' field supports the use of wildcards, by entering the asterisk (*) key before or after any term, for example, entering 'IT01*' will populate this group with all client machines where the hostname begins with 'IT01' (Image 8.2).

Impero Console - Add Group

This window allows you to add a new group. Choose a group name, type, members and access rights for other console users.

Group Details / Members | Group Access Rights | Group Settings

Name of Group: IT Suite Group Priority: Low Type of Group: Computer

Existing Group Members

You can use Wildcards in the list below to include members in this group. Eg- ITRoom1* will cover all computers in ITRoom1. To EXCLUDE a member simply use a ! followed by the member name. Eg - !PC1 will exclude PC1 from the group.

Member Name	Search Tag	Reason in Group	Removal Date	
[Add New Member]				
IT01*	Impero Host		23 June 2015 12:27	Delete

Remove All Import Users Group Members: 1

OK Cancel

Image 8.2 - New Computer Group



Click '**OK**' to save your new group.

User Group Members

If you have selected 'User' in the 'Type of Group' drop-down list, you will need to add the required users to the 'Existing Group Members' area.

You can click the [Add New Member] link under the 'Member Name' column to add specific usernames to this group. To add a group from Active Directory, select '**AD Group**' from the 'Search Tag' drop-down list, and type the name of your AD group into the 'Member Name' field.

Click '**OK**' to save your new group.

As you create and save your new groups, they will appear on the left-hand side of the Console window, under the six default groups. Computer groups will have a  icon, while user groups will have a  icon by their group name (Image 8.4).

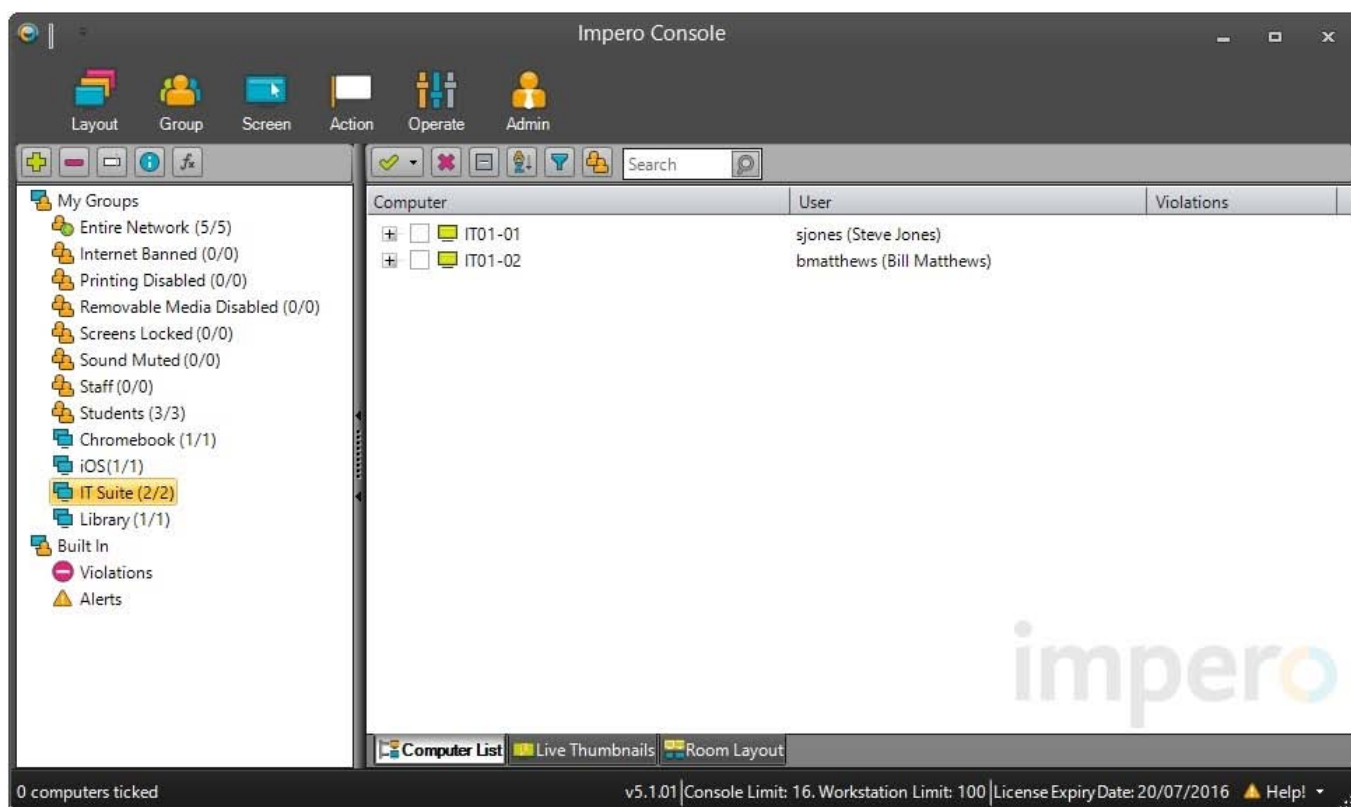


Image 8.4 - Impero Groups

Once you have created your Impero Groups, it is important to ensure you have your group priorities set up correctly, before moving onto configuring your Console Access Rights.

5.2.1 Group Priorities

When creating your Impero groups, it is important to ensure your the group priority is set correctly.

In order to gain an understanding of group priorities, right-click on one of your created groups, and select '**Properties**'. Then, select the '**Group Settings**' tab (Image 9).

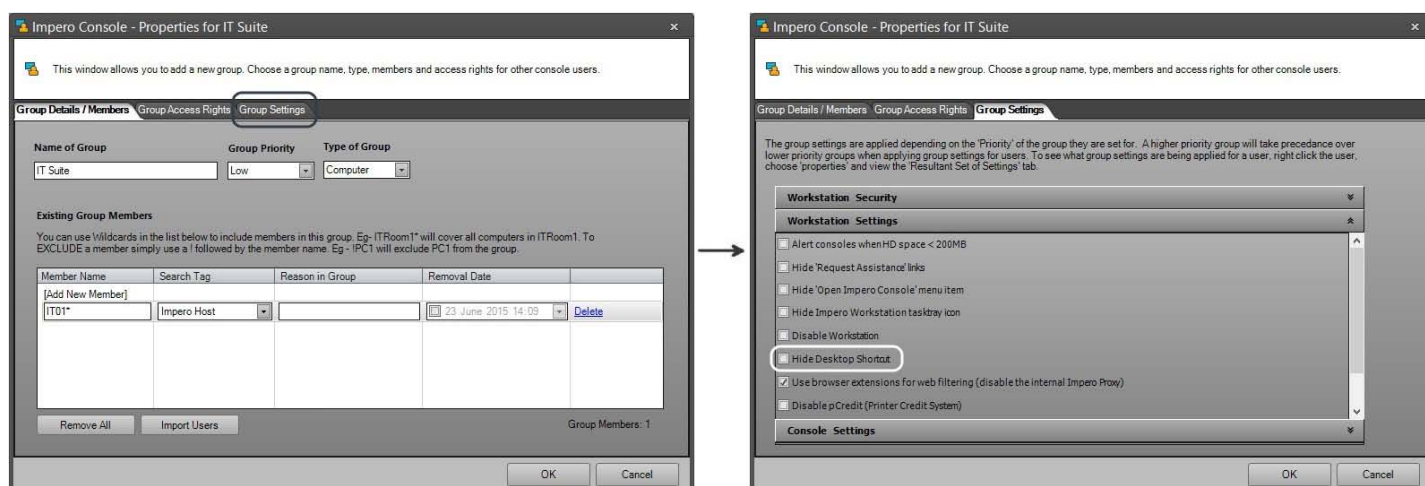


Image 9 - Group Properties

The 'Group Settings' tab contains a number of settings that you can apply per group; every Impero group contains these same settings, for example 'Hide Desktop Shortcut' (Image 9). The 'Hide Desktop Shortcut' setting will hide the 'Impero Console' desktop icon for all members of the selected group.

However, one user can easily belong to multiple groups, for example, a student user could belong to the 'Entire Network' group,

the 'Students' user group, and a classroom computer group all at one time. At this time, the user will have the same setting applied to them three times. It is therefore the priority of those three groups that will define which setting applies to the user at that time.

A good way to quickly see which setting applies to a user is to right-click the user in the Impero Console and select '**Properties**'. Now, click the '**Resultant Set of Settings**' tab (Image 9.1).

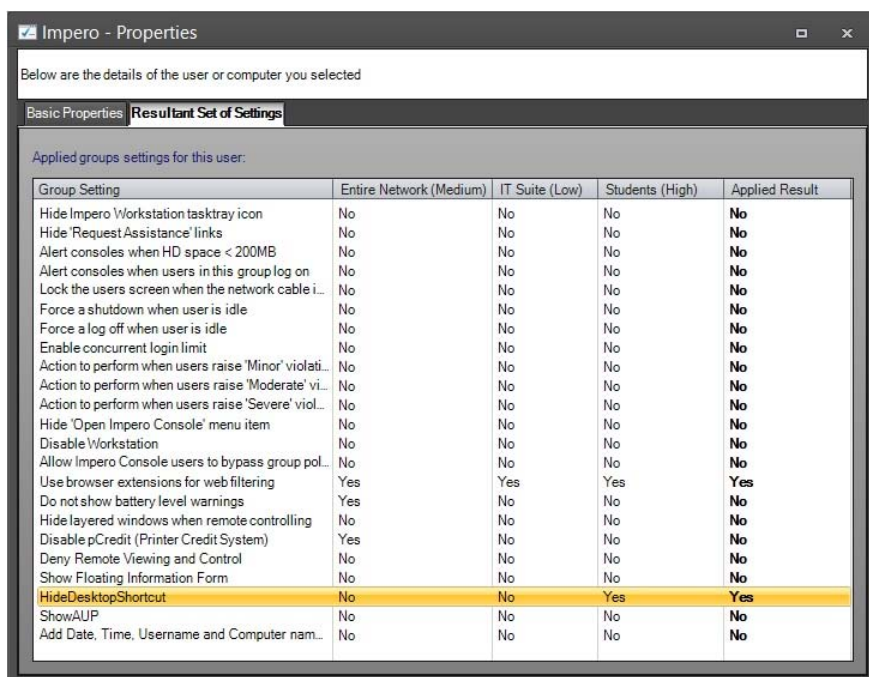


Image 9.1 - Resultant Set of Settings

The group with the highest priority that the user belongs to will be the setting that applies to the user. It is therefore recommended that your user groups are set to higher priorities. For example:

Group Name	Group Type	Group Priority
Entire Network	-	Low/Medium
Staff	User	High
Students	User	High
IT Suite	Computer	Low
Library	Computer	Low
Laptop Trolley	Computer	Low

With this configuration, your users should belong to only one high priority group, as users should only belong to one user group. The setting applied to that user group will apply to its members wherever they log in. For example, the 'Hide Desktop Shortcut' setting can be applied to the 'Students' user group so that student users will never see the 'Impero Console' desktop icon, while 'Staff' users will see the icon as they are in a separate group where the setting is not applied.

5.3 Console Access Rights

Once you have set up some groups in the Impero Console, the next step is to set up your Console Access Rights. This defines who is able to launch the Impero Console, and what level of access they have.

In order to set this up, open your Impero Server. Click the '**Settings**' tab, and then select '**Console Access Rights**'.

Every workstation that has the Impero client installed to it has the Impero Console installed. By default, the Console is password protected - anyone is able to launch the Console providing they enter the password displayed in the 'Console Access Rights' tab (Image 10).

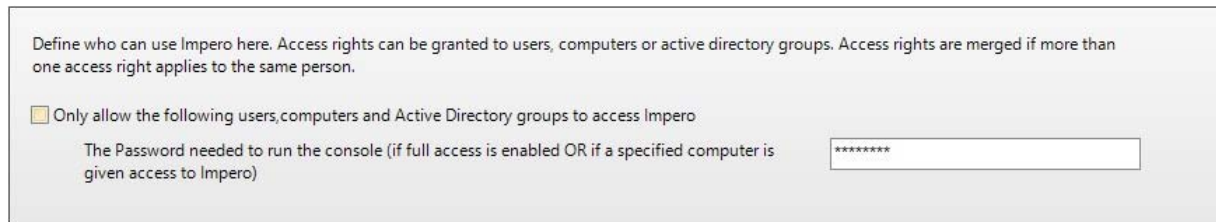


Image 10 - Console Access Rights - Password

However, you are able to lock this down further by allowing Console access to only specific users. Tick the option to 'Only allow the following users, computers and Active Directory group to access Impero'. At this point, a further section will display (Image 10.1).

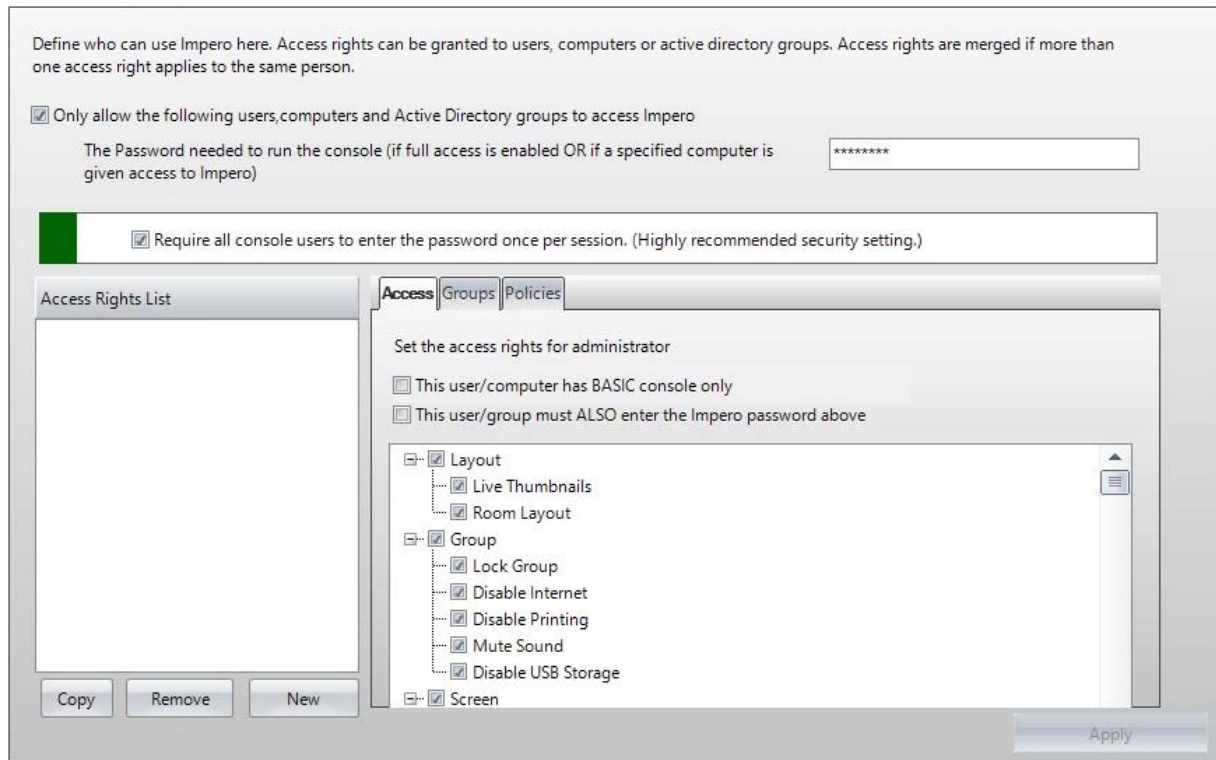


Image 10.1 - Console Access Rights

Once this option has been selected, access to the Impero Console is restricted only to members of the 'Access Rights List' on the left of this window. Click '**New**' to add a new member.

You can choose to add specific usernames, computer names and Active Directory (AD) groups to the Access Rights List. Select which member type you wish to add, enter the name into the text area (Image 10.2) and then click on '**OK**'.



Image 10.2 - Add User

If you have chosen to add an AD group, you can click the '**Find**' button to browse your AD for a specific group.

Note: You can add only one member at a time from this window.

All members you have entered will be added to the Access Rights List area (Image 10.3).

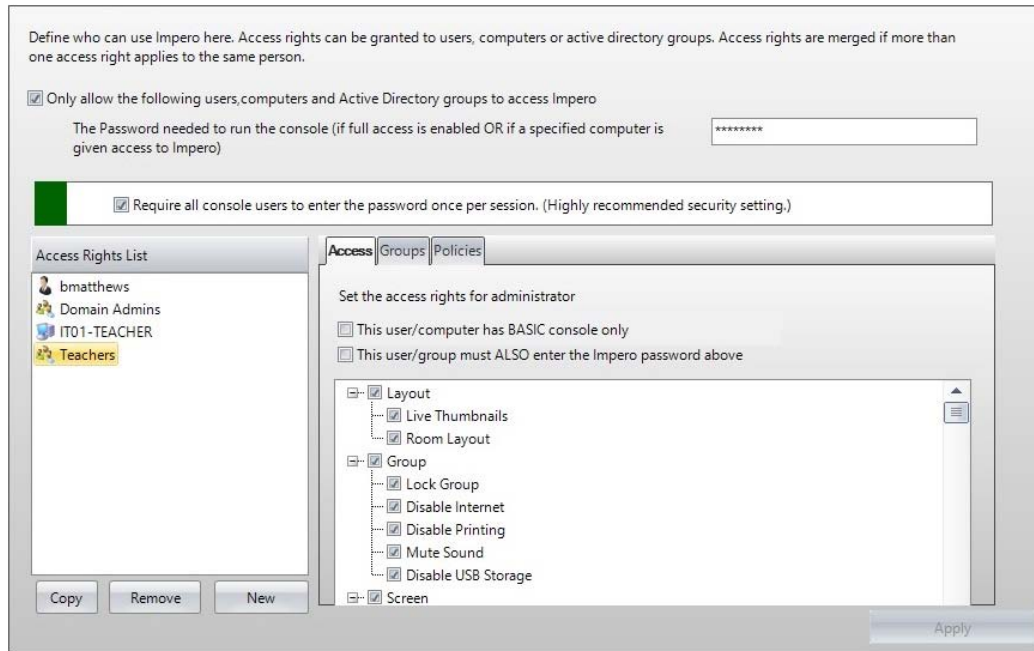


Image 10.3 - Access Rights List

After adding any members to the Access Rights List, ensure you click the '**Apply**' button. From then on, only members of the Access Rights List will have access to the Impero Console.

Any user that appears in this list, or belongs to an AD group that appears in this list, will be prompted to enter the Console access password once per session. Once authenticated, they will no longer be prompted to enter the password if they re-launch the Console during that session. However if they log out of their operating system, the next time they log in they will be required to authenticate again when opening the Console the first time.

Any user logged onto a computer name that appears in this list will be able to launch the Impero Console but will need to enter the Console password every time. All other users will be told that they do not have access rights if they attempt to open the Impero Console.

For each member of this Access Rights List, you are able to further configure their access within the Console.

Select a user in the Access Rights List; on the right-hand side, under the 'Access' tab, you are then able to untick any feature that you do not wish to give access to within the Impero Console. For example, you may not want teaching staff to have access to certain features under the 'Admin' toolbar in the Console (Image 10.4 - [A]).

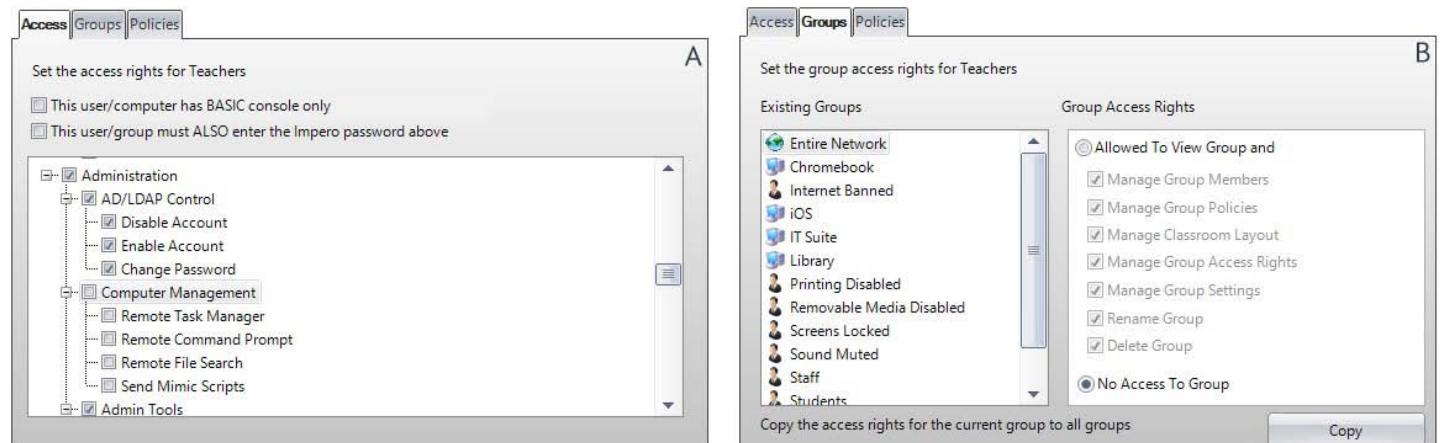


Image 10.4 - Set Access Levels

With a user selected in the Access Rights List, click on the '**Groups**' tab on the right-hand side; you can also modify what level of access the user has to certain groups in the Impero Console by selecting the group you wish to edit access for and then selecting the relevant Group Access Rights. For example, you may not want teaching staff to have access to the 'Entire Network' group (Image 10.4 - [B]). Similarly you can edit user access to Impero policies from the '**Policies**' tab.

Any settings you have applied here will take effect immediately. Please ensure your Console Access Rights are properly configured so that only the relevant users have access to the Impero Console, and that they have the correct level of access. Once these have been configured, you are able to start using Impero Education Pro.

5.4 Browser Extensions

In order for Impero web filtering to fully function, each web browser that is used will need to have its relevant browser extension installed. Please see the following two sections on extension deployment for Internet Explorer and Google Chrome. If you use any other web browser, details on these extensions can be found within the Impero Console guide on the Impero [knowledge base](#).

5.4.1 Internet Explorer

The extension for Internet Explorer comes in the form of an add-on named '**ImperoV3BHO.BHO**', which is automatically installed when the Impero Client is installed to a machine.

To verify that the add-on is installed and enabled, click the 'Settings' icon on your Internet Explorer browser, and select '**Manage add-ons**'. In the new window you should see 'ImperoV3BHO.BHO' (Image 11).

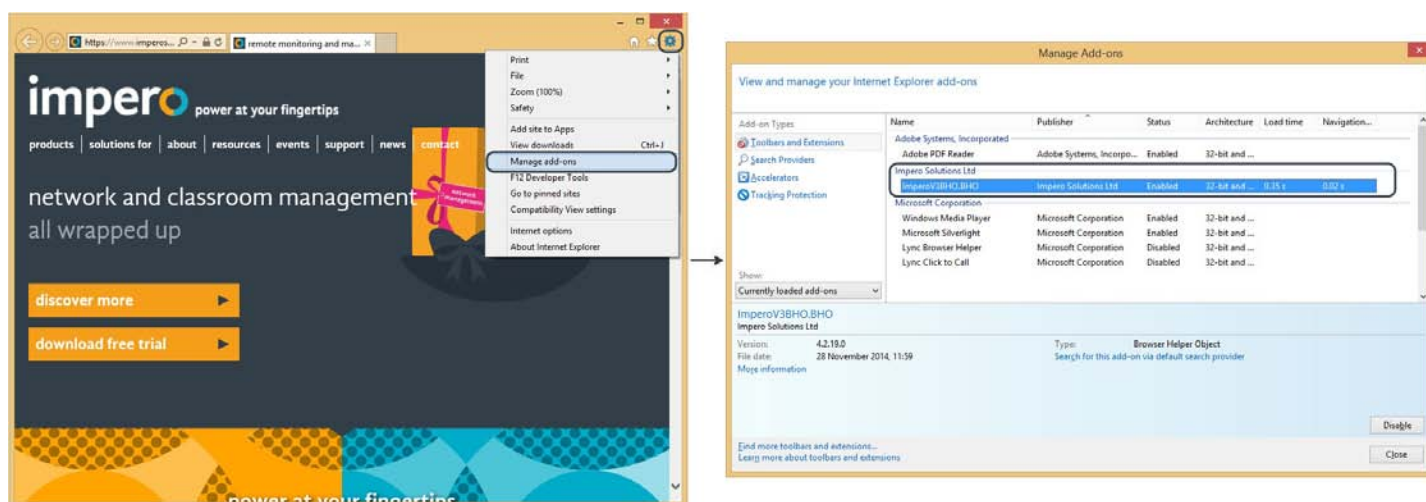


Image 11 - Internet Explorer Add-On

In order to prevent users from manually disabling the add-on, you can use Impero to create a window block for the 'Manage Add-ons' window. This will stop users from accessing this window to disable ImperoV3BHO.BHO.

Alternatively, you can use Group Policy to ensure that the ImperoV3BHO.BHO is enabled for all users, as well as preventing users from manually disabling the add-on. Within a Group Policy Object (GPO), for either 'Computer Configuration' or 'User Configuration', browse to the following options:

Administrative Templates > Windows Components > Internet Explorer > Internet Control Panel > Advanced Page > Allow third-party browser extensions

ENABLE this policy

Administrative Templates > Windows Components > Internet Explorer > Disable add-on performance notifications

ENABLE this policy

Administrative Templates > Windows Components > Internet Explorer > Automatically enable newly installed add-ons

ENABLE this policy

Administrative Templates > Windows Components > Internet Explorer > Do not allow users to enable or disable add-ons

ENABLE this policy

User Configuration > Administrative Templates > Start Menu and Taskbar > Do not allow pinning programs to the Taskbar
 ENABLE this policy

Administrative Templates > Windows Components > Internet Explorer > Turn off Managing SmartScreen Filter for Internet Explorer 9
 ENABLE this policy and in the options choose to turn the filter OFF

Administrative Templates > Windows Components > Internet Explorer > Turn off Managing SmartScreen Filter for Internet Explorer 8
 ENABLE this policy and in the options choose to turn the filter OFF

Administrative Templates > Windows Components > Internet Explorer > Internet Control Panel > Advanced Page > Turn on Enhanced Protected Mode
 DISABLE this policy

Administrative Templates > Windows Components > Internet Explorer > Internet Explorer > Security Features > Add On Management > Add On List
 Enabled\Add On list
 Value Name {220A4F50-B00B-414B-8CB3-E8C9032CFAE9}
 Value 1

Additional policy for IE11 and above:

Administrative Templates > Windows Components > Internet Explorer > Internet Control Panel > Advanced Page > Turn on 64-bit tab processes when running in Enhanced Protected Mode on 64-bit versions of Windows
 DISABLE this policy

Windows 2012 R2:

Administrative Templates > Windows Components > Internet Explorer > Turn off Performance Notifications
 ENABLE this policy

5.4.2 Google Chrome

The Impero Education Pro extension for Google Chrome is available for download for free from the [Chrome Web Store](#) (Image 12). Once installed and enabled, all activity on the Google Chrome web browser will be logged and filtered by Impero.

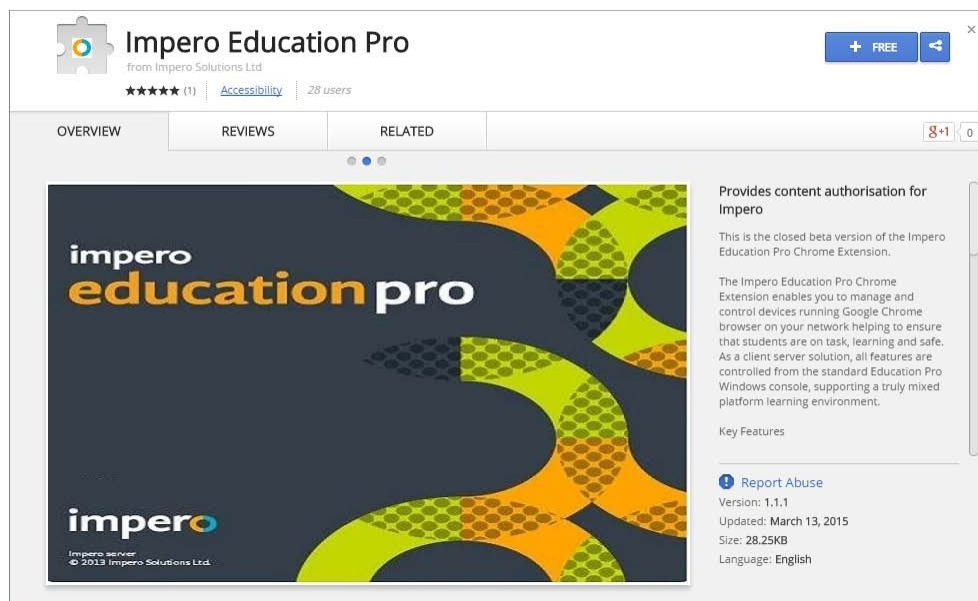


Image 12 - Chrome Web Store

Click on the 'FREE' button in order to begin the download, and then click on 'Add' when the confirmation dialogue box appears (Image 12.1)

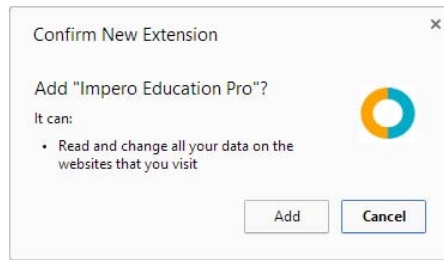


Image 12.1 - Confirm Chrome Extension

Once installed, navigate your Chrome web browser to **chrome://extensions** to verify that the extension has been installed and enabled (Image 12.2)

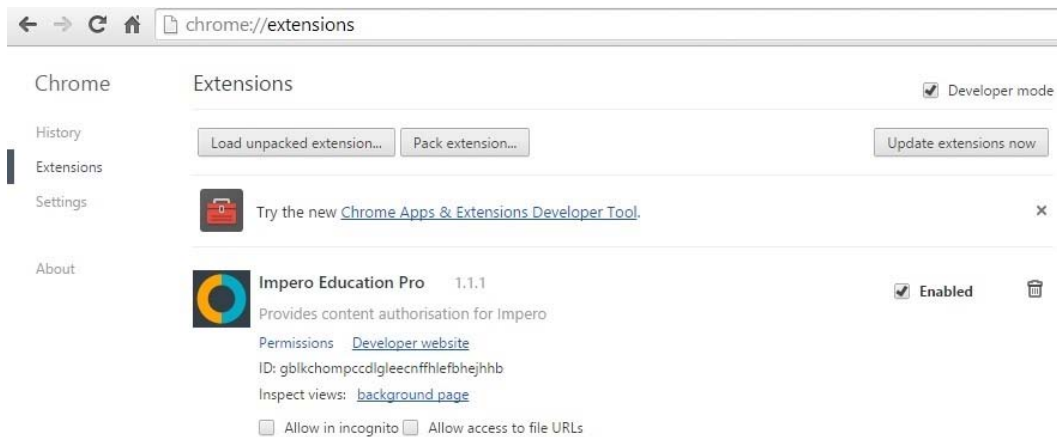


Image 12.2 - Google Chrome Extension

In order to prevent users from manually disabling the extension, you can use Impero to create a window block for the 'Extensions' window. This will stop users from accessing this window to disable the Impero Education Pro extension.

Alternatively, you can use Group Policy to ensure that the Impero Education Pro extension is enabled for all users, as well as preventing users from manually disabling the add-on. In order to do so, carry out the following steps:

- Download the [Google Administrative Templates](#)
- Open your Group Policy Manager
- Create the GPO to install the Chrome extension
- Right-click your GPO and select **'Edit'**
- From the new window, expand either the 'Computer Configuration' or 'User Configuration' depending on your desired setup
- Right-click on 'Administrative Templates', and select **'Add/Remove Templates'**
- Click on **'Add'**
- Browse to and open the **'chrome.adm'** template relevant to your Operating System and language
- Once uploaded, expand to the following path:

Policies > Administrative Templates > Classic Administrative Templates > Google > Google Chrome > Extensions

- On the right-hand side, select **'Configure the list of force-installed extensions'**
- Right-click and select **'Edit'**
- Select the **'Enabled'** option
- Click on **'Show'**
- Under the 'Value' column, enter the following string:

gblkchompccdlgleecnffhlefjbhejhbb;https://clients2.google.com/service/update2/crx

- Click on **'OK'**, followed by **'Apply'**
- You may also wish to disable the 'Incognito mode' option from Google Chrome
- In the same GPO, expand from the left hand side the following path:

Policies > Classic Administrative Templates > Google Chrome

- Now, on the right-hand side, locate '**Incognito mode availability**'
- Right-click this item, and click '**Edit**'
- In the new window, select the option to '**Enable**' this object
- From the 'Incognito mode availability' drop-down list, select '**Incognito mode disabled.**'
- Click on '**OK**', followed by '**Apply**'
- Assign this GPO to your desired computers/users in the usual manner
- Affected users will then see the Chrome extension force installed and enabled (Image 12.3)

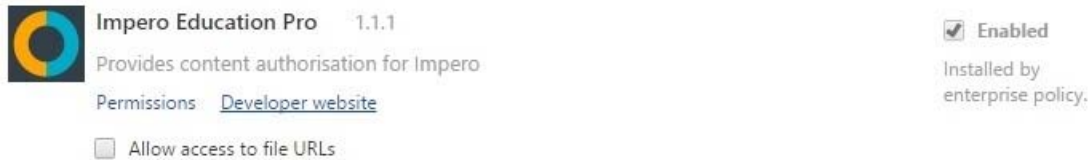


Image 12.3 - Google Chrome Extension GPO

5.5 Anti-Virus Exclusions

It is recommended when using Impero Education Pro that you enter exclusions for any centrally managed anti-virus program, as these can often interfere with Impero.

The following files and folders should be excluded from all anti-virus scanning:

```
C:\ProgramFiles\Impero Solutions Ltd\
C:\ProgramFiles\GFI\LanGuard 11 Agent\
C:\ProgramFiles\Impero Solutions Ltd\Impero Client\imperoclient.exe
C:\ProgramFiles\Impero Solutions Ltd\Impero Client\ImperoClientSVC.exe
C:\ProgramFiles\Impero Solutions Ltd\Impero Client\ImperoConsoleShortcut.exe
C:\ProgramFiles\Impero Solutions Ltd\Impero Client\ImperoControlLibrary.dll
C:\ProgramFiles\Impero Solutions Ltd\Impero Client\ImperoGuardianSVC.exe
C:\ProgramFiles\Impero Solutions Ltd\Impero Client\ImperoKInit.exe
C:\ProgramFiles\Impero Solutions Ltd\Impero Client\ImperoServerBrowser.exe
C:\ProgramFiles\Impero Solutions Ltd\Impero Client\ImperoUtilities.exe
C:\ProgramFiles\Impero Solutions Ltd\Impero Client\ImperoWinlogonApplication.exe
C:\ProgramFiles\Impero Solutions Ltd\Impero Client\NRControlViewer.dll
C:\ProgramFiles\Impero Solutions Ltd\Impero Server\ImperoServer.exe
C:\ProgramFiles\Impero Solutions Ltd\Impero Server\ImperoServerSVC.exe
C:\ProgramFiles\Impero Solutions Ltd\Impero Server\ImperoGuardianSVC.exe
C:\ProgramFiles\GFI\LanGuard 11 Agent\httpd.exe
C:\ProgramFiles\GFI\LanGuard 11 Agent\Inssatt.exe
C:\ProgramFiles\GFI\LanGuard 11 Agent\Insscomm.exe
C:\ProgramFiles\GFI\LanGuard 11 Agent\mantle.exe
C:\ProgramFiles\GFI\LanGuard 11 Agent\update.exe

C:\ProgramFiles(x86)\Impero Solutions Ltd\
C:\ProgramFiles(x86)\GFI\LanGuard 11 Agent\
C:\ProgramFiles(x86)\Impero Solutions Ltd\Impero Client\imperoclient.exe
C:\ProgramFiles(x86)\Impero Solutions Ltd\Impero Client\ImperoClientSVC.exe
C:\ProgramFiles(x86)\Impero Solutions Ltd\Impero Client\ImperoConsoleShortcut.exe
C:\ProgramFiles(x86)\Impero Solutions Ltd\Impero Client\ImperoControlLibrary.dll
C:\ProgramFiles(x86)\Impero Solutions Ltd\Impero Client\ImperoGuardianSVC.exe
C:\ProgramFiles(x86)\Impero Solutions Ltd\Impero Client\ImperoKInit.exe
C:\ProgramFiles(x86)\Impero Solutions Ltd\Impero Client\ImperoServerBrowser.exe
C:\ProgramFiles(x86)\Impero Solutions Ltd\Impero Client\ImperoUtilities.exe
C:\ProgramFiles(x86)\Impero Solutions Ltd\Impero Client\ImperoWinlogonApplication.exe
C:\ProgramFiles(x86)\Impero Solutions Ltd\Impero Client\NRControlViewer.dll
C:\ProgramFiles(x86)\Impero Solutions Ltd\Impero Server\ImperoServer.exe
C:\ProgramFiles(x86)\Impero Solutions Ltd\Impero Server\ImperoServerSVC.exe
C:\ProgramFiles(x86)\Impero Solutions Ltd\Impero Server\ImperoGuardianSVC.exe
C:\ProgramFiles(x86)\GFI\LanGuard 11 Agent\httpd.exe
C:\ProgramFiles(x86)\GFI\LanGuard 11 Agent\Inssatt.exe
C:\ProgramFiles(x86)\GFI\LanGuard 11 Agent\Insscomm.exe
```

C:\ProgramFiles (x86)\GFI\LanGuard 11 Agent\mantle.exe
 C:\ProgramFiles (x86)\GFI\LanGuard 11 Agent\update.exe

For a full list of anti-virus exclusions and steps specific to certain vendors, please log in to the [customer support portal](#), and view the 'Anti-Virus' section on the knowledge base.

6 Training Materials

Impero is able to provide technical training (aimed at Network Administrators) and teacher training (aimed for class teachers) for you and your staff members. This training can be provided remotely from Impero offices, or on-site at your establishment. If you wish to arrange either, please [contact](#) your account manager at Impero or Impero Support.

Online training material is also available, either in video format for [technical](#) and [teacher](#) training, or PDF format via the Impero [knowledge base](#).

7 Advanced Settings

We have also included some advanced troubleshooting topics to help answer common questions when installing Impero Software.

7.1 Reactivating Your Server

If you receive the error message **'Your Impero Server needs registering or your trial period has expired'** (Image 13), please follow the steps below.

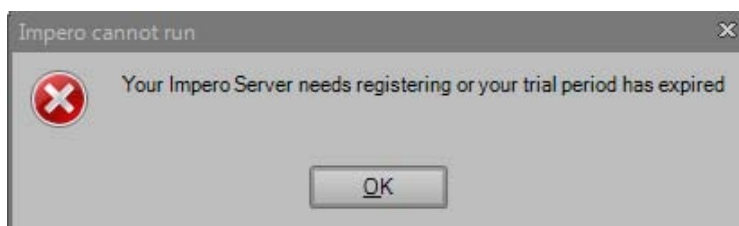


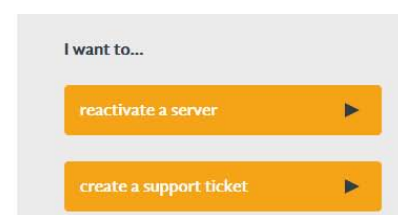
Image 13 - Impero Cannot Run

- Open your Impero Server to verify if this is correct. If so you will need to reactivate your license first.
- If you need to re-register your Impero Server, you will need to log in to the [customer support portal](#).
- Once you have logged in click the **'reactivate a server'** link on the right-hand side of the screen.
- Click the **'reactivate server'** option next to your active product license (Image 13.1).

customer portal > my products > server reactivation

server options	product	last reactivated	server reactivation
	V4 Version 5003 Installed 25 Nov 2014 11:29	---	reactivate server

Image 13.1 - Reactivate Server



- You should now be able to reactivate your Impero Server.
- If you continue to have problems, please contact [Impero Support](#).

7.2 Troubleshooting Server Install

Q: I cannot install the Impero Server, I get an error message saying I do not have administrative rights.

A: This is usually a .NET error. You will need to verify that the correct version of [.NET](#) is installed.

Q: My Impero Server just hangs during installation (Image 14).

A: You will need to verify that the correct version of [.NET](#) is installed, or alternatively you could disable your Anti-Virus system and try re-installing your Impero Server.

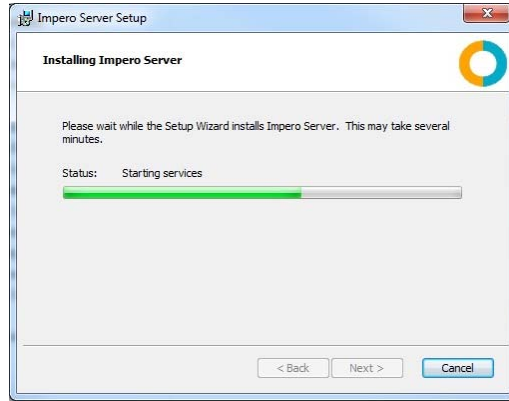


Image 14 - Service will not start

Q: I cannot register my Impero Server

A: Check your proxy setting details on the register window. You may need to add the following websites access through your web filter; 'licencing.imperosoftware.com' and 'www.imperosoftware.com', or see the question; **This server does not have access to the internet. How can I register Impero?**

Q: The Impero Server says that it is already registered.

A: If this is the first time you are registering the Impero Server then remove the tick from '**Can't Register Impero? Try registering Impero using your default web browser**' located under the Advanced Settings section and click the Register button.

A: If you do not have internet access then click the back button and shorten your contact details. The amount of information that is being encrypted is too large for your web browser. Once you have shortened your contact details, click next and then register. You should then see the encrypted key. You then need to highlight this, and copy and paste back into the Impero Server registration window as shown in Image xx.

Q: This server does not have access to the internet. How can I register Impero?

A: You will need to tick '**Can't Register Impero? Try registering Impero using your default web browser**' located under the Advanced Settings section and click the Register button.

- A new window (Image 14.1) will open. Click '**Go To Website**'.

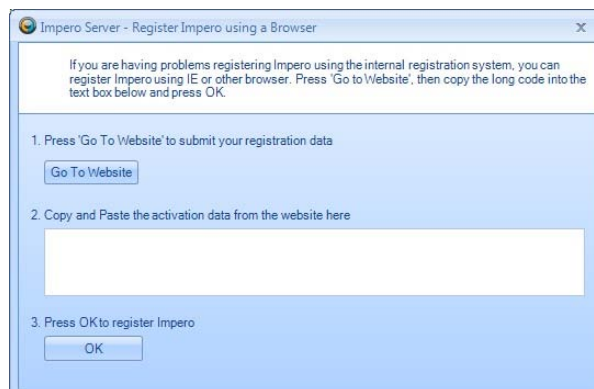


Image 14.1 - Register Impero using a browser

- This will open your default browser and fail as you do not have internet access, but it will generate a long URL (Image 14.2) that you need to copy and paste into a document, i.e. Notepad.



Image 14.2 - URL Code

- Open the document on a PC that does have internet access.
- Then copy and paste the content of the document into the address bar of your browser and press enter on your keyboard.
- This will contact the Impero Licensing Server and generate a long code that will be displayed in the browser window.
- Select all of the code in the browser window and paste into a document.
- Open the document on the Impero Server, and copy and paste the code into Step 2 of Image xx.
- Click 'OK'.

7.3 Troubleshooting Window Clients

Q: I am getting errors when trying to deploy the Client remotely

A: Please work through the troubleshooting steps below:

- Verify all firewalls are off during the remote deployment; both Anti-Virus and Windows Firewall.
- Make sure that you can open the C\$ share (e.g. \\computername\C\$) as the Impero Remote Deploy needs this to be available for the remote deployment tool to work.
- Make sure the MSI is located on the machine you are deploying from, as the Impero Remote Deploy tool does not work from shared directories.
- Try deploying to the IP Address of the machine rather than the computer name to verify your DNS is correct. If Impero installs using the IP Address of the machine then you have a DNS issue.
- Manually install the client on the PC. This will give you a better understanding of what may be happening on the PC. If the client installs but does not connect to the Impero Server, please see creating a [DNS record](#).
- Check Event Viewer logs on the workstation.

Q: I can't install the Impero Server; I get an error message saying that I do not have administrative rights.

A: This is usually a .NET error. You will need to verify that the correct version of [.NET](#) is installed.

Q: The Impero Client cannot connect to the Impero Server.

A: Please work through the troubleshooting steps below:

- Do you have VLAN's across your network? If so, and you use a DNS Server then you can [create a DNS](#) record that will give the clients the correct information in order to connect the Impero Server.
- The first time you install Impero Client it creates a local text file called ServerIP.txt if it can find the Impero Server ('C:\Program Files\Impero Solutions Ltd\ImperoClient\ServerIP.txt'). This stores the IP Address of your Impero Server. If this file is missing you can create this text file manually and enter the IP Address of your Impero Server in it. You may need to open 'services.msc' and stop the 'Impero Client SVC' service and then restart it once you have created the ServerIP.txt file.

Q: The Impero Client is saying 'Your Impero Server needs registering or your trial period has expired'.

A: Please work through the troubleshooting steps below:

- The Impero Server has become unregistered. The most probable cause would be that the hardware footprint of your server has changed by either adding new hardware or something dynamically assigned has changed. You need to [reactivate your account](#) before you are able to re-register your server again.
- If your Impero Server opens without asking you to register then you have multiple Impero Servers installed. On the PC that is showing the error message open the following file 'C:\Program Files\Impero Solutions Ltd\Impero Client\ServerIP.txt', this will tell you the IP Address of second server. You need to remove this as you should only have one Impero Server per network.

Q: I can see the client in the Impero Console but I am unable to remote control the machine.

A: Please work through the troubleshooting steps below:

Turn off Windows Firewall on both clients and test again. If this works then you need to verify you have allowed all Impero Firewall exceptions through your firewalls:

```
C:\Program Files\Impero Solutions Ltd\Impero Client\imperoclient.exe
C:\Program Files\Impero Solutions Ltd\Impero Client\ImperoClientSVC.exe
C:\Program Files\Impero Solutions Ltd\Impero Client\ImperoControlLibrary.dll
C:\Program Files\Impero Solutions Ltd\Impero Client\NRControlViewer.dll
C:\Program Files\Impero Solutions Ltd\Impero Client\ImperoUtilities.exe
```

You need to be able to ping both directions between the PCs.

Impero uses the following ports:

```
TCP/UDP Ports 30015 - Reserved for Impero Server
TCP/UDP Ports 30016 - Reserved for Impero Server
TCP/UDP Ports 30017 - Reserved for Impero Server
TCP/UDP Ports 30018 - Reserved for Impero Server
TCP/UDP Ports 30019 - Reserved for Impero Server
TCP/UDP Ports 30020 - Reserved Proxy or Thumbnail view
TCP/UDP Ports 30021 - 30521
```

Note: This example is based on seeing 500 thumbnail clients at once. The port numbers from 30021 to 30521 is based on how many thumbnails you can see at once and may be adjusted to fit your needs.

7.4 Troubleshooting Apple Mac Clients

Q: The Mac icon is appearing, however, the client is not connecting to the Impero Server.

A: If, after you install the Mac client, the Impero icon appears in the task tray but the '**Server Name**' under 'Properties' says '**Disconnected**', this then means that it cannot find the Impero Server. The most likely cause of this is that the Impero Client cannot find the Impero Server via UDP Broadcast. This is often seen on networks where VLAN's are utilised. See the section below for 'How do I use a Fixed IP Address?'

Q: How do I display the Impero error logs?

A: Run the following command on a terminal session within the Mac client:

```
tail -1000 /var/log/ImperoClientSrv.log
```

In the error log output look for the following entry every 30 seconds:

```
09:48 DT-S-WS10-023com.imperosoftware.imperoclientsrv[54]: CServerConnection::DoBroadCast
09:49 DT-S-WS10-023com.imperosoftware.imperoclientsrv[54]: CServerConnection::DoBroadCast
09:49 DT-S-WS10-023com.imperosoftware.imperoclientsrv[54]: CServerConnection::DoBroadCast
```

This means that the client cannot find the Impero Server via UDP Broadcast. This is often seen on networks where VLAN's are utilised. See the section below for 'How do I use a Fixed IP Address?'

Q: How do I use a 'Fixed IP Address'?

A: To force the Impero Client running on Mac OSX to automatically find the Impero Server, instead of doing a UDP Broadcast then run the following two commands in a terminal session:

```
sudo launchctl unload /Library/LaunchDaemons/com.imperosoftware.imperoclientsrv.plist
sudo /usr/libexec/PListBuddy -c "add fixed string 192.168.1.1"
```

```
/Library/Preferences/com.impero-solutions-ltd.ImperoClientSrv.plist
```

```
sudo launchctl load /Library/LaunchDaemons/com.imperosoftware.imperoclientsrv.plist
```

Replace the 192.168.1.1 for your Impero Server IP Address.

Q: Internet blocking & logging is not working on the Mac

A: The proxy is set through your XServe and you need to tell it about Impero. See section ['Using Apple XServe'](#).

7.5 DNS Record

You can create a DNS record to ensure that Windows, Mac and iOS Impero Clients are able to find the Impero Server, even if it is located on a different VLAN. In order to do so, please go through the following steps:

1. Open your DNS Manager (Image 15).
2. Expand the 'Forward Lookup Zones'.
3. Locate your domain and select it.
4. Right-click and choose 'New Host (A or AAAA)'.
5. Under 'Host', enter 'impero_server'.
6. Under 'IP Address', enter the IP Address of your Impero Server.

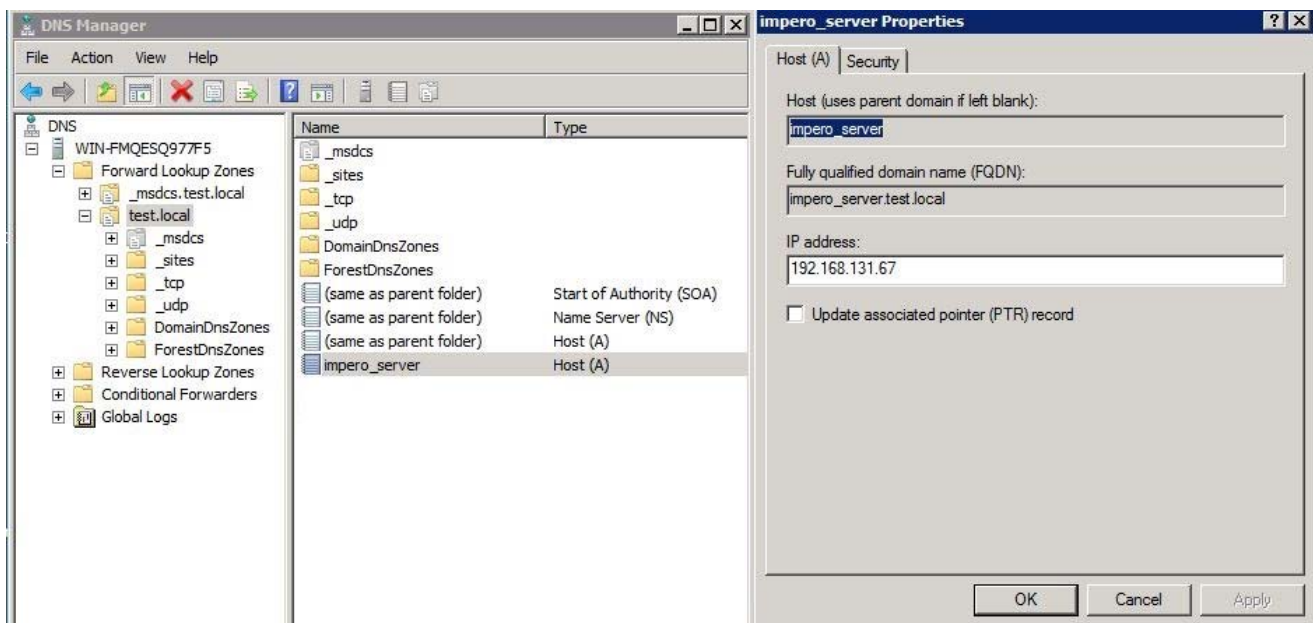


Image 15 - DNS Manager

Note: If this does not immediately resolve any issues you may be experiencing, you may need to restart the affected computer, or run an 'ipconfig / flushdns' command in Command Prompt on the affected computer.

7.6 Terminal Services & Virtual Desktop Environments

While you can install the Impero Server to a virtual server, it is important to bear in mind that the Impero Server should never be installed to a Terminal Services Server, and ideally not onto a Virtual desktop delivery server.

Virtual Desktops

Install the Impero Client onto the golden/template image, as you would a normal application. This applies for Citrix XenDesktop and other VDI technologies such as NComputing and VMWare.

Terminal Services

To install the Impero Client, log onto the terminal server console as a member of the Domain Admins group and install Impero as you would any other software. Do not forget to put the Terminal Server into Install Mode. This methodology also applies for older

versions of Citrix.

Windows Terminal Server 2003: [http://technet.microsoft.com/en-us/library/cc781026\(v=WS.10\).aspx](http://technet.microsoft.com/en-us/library/cc781026(v=WS.10).aspx)

Windows Terminal Server 2008: [http://technet.microsoft.com/en-us/library/cc742815\(v=WS.10\).aspx](http://technet.microsoft.com/en-us/library/cc742815(v=WS.10).aspx)

VMware View Desktop visualization

Base template and a cloned desktop pool

Install the ImperoClientSetup.msi to the base image. If you want the name of the Thin Client to report back to the Impero Console, you will need to install VMware Tools.

Static Virtual Machine

Install the ImperoClientSetup.msi to each static virtual machine in use.

Citrix Xen Desktop

Base template and a cloned desktop pool

Install the ImperoClientSetup.msi to the base image. If you want the name of the Thin Client to report back to the Impero Console you will need to install Citrix Tools.

Static Virtual Machine

Install the ImperoClientSetup.msi to each static virtual machine in use.

Citrix Xen App

For Published Desktops

Deploy the Impero Client to the XenApp server using the Citrix recommended install practices.

For Application Publishing

This is currently an unsupported configuration for Impero. It has not been tested and is therefore not currently supported.

NComputing

Install the ImperoClientSetup.msi on the NComputing host computer.

Note: Please refer to vendor's documentation for official procedures, as those above are intended for demonstration purposes only.

7.7 Using Apple Xserve

How to set the Impero Proxy with your Xserve

Impero needs to be setup to work with the Apple Xserve or it will not block or log any internet traffic. You will need to replace your existing proxy (Image 16) with the Impero proxy settings and then tell the Impero proxy what IP Address and Port to use for your existing proxy.

Note: Impero currently does not work with proxy.pac files within Xserve.



Image 16 - Xserve Workgroup Manager

Step 1

Set Proxy Autoconfig Url to: `http://localhost:30020/impero_proxy.pac`

Note: Other proxy options should be disabled.

Step 2

On the Mac OSX clients, open terminal and enter the following command without quotes. It must be one continuous line of code. Please press enter after you have entered each line of code. Change 17.0.0.1 to your proxies IP Address and also change 8080 to the correct port that your proxy is using.

```
"sudo launchctl unload /Library/LaunchDaemons/com.imperosoftware.imperoclientsrv.plist"
```

```
"sudo /usr/libexec/PlistBuddy -c "add persistent_proxy bool true"
/Library/Preferences/com.impero-solutions-ltd.ImperoClientSrv.plist"
```

```
"sudo /usr/libexec/PlistBuddy -c "add proxy_host string 17.0.0.1"
/Library/Preferences/com.impero-solutions-ltd.ImperoClientSrv.plist"
```

```
"sudo /usr/libexec/PlistBuddy -c "add proxy_port integer 8080"
/Library/Preferences/com.impero-solutions-ltd.ImperoClientSrv.plist"
```

```
"sudo launchctl load /Library/LaunchDaemons/com.imperosoftware.imperoclientsrv.plist"
```

Verify that Internet blocking and logging are now working correctly on your Apple Mac clients.

8 Network Connections

This section will explain all network communications that are performed by your Impero Education Pro Server and Clients, which are covered by four aspects:

- Impero Server outbound connections
- Impero Client <-> Impero Server connections
- Impero Client <-> Impero Client connections (peer-to-peer)
- Impero Client loopback connections

In general, it is recommended to allow Impero Client to Impero Client communication, as well as Impero Client to Impero Server communication in both directions on the port range **30015 - 30221 (TCP/UDP)**.

The ImperoClientSetupXXXX.msi and ImperoServerSetupXXXX.msi install packages both automatically configure your Windows Firewall upon installation to allow the necessary connections. However, if you use either the 'Talk and Listen' feature within the Impero Console, or the 'Patch Management' module, then there are further Firewall rules required.

Note: XXXX will reflect the version number of Impero that is being installed.

As well as adding any Firewall rules, it is also recommended to have [anti-virus exclusions](#) entered if you have a centrally managed anti-virus solution.

The following diagram (Image 17) provides a generic overview of the types of connection required by your Impero Server and Clients.

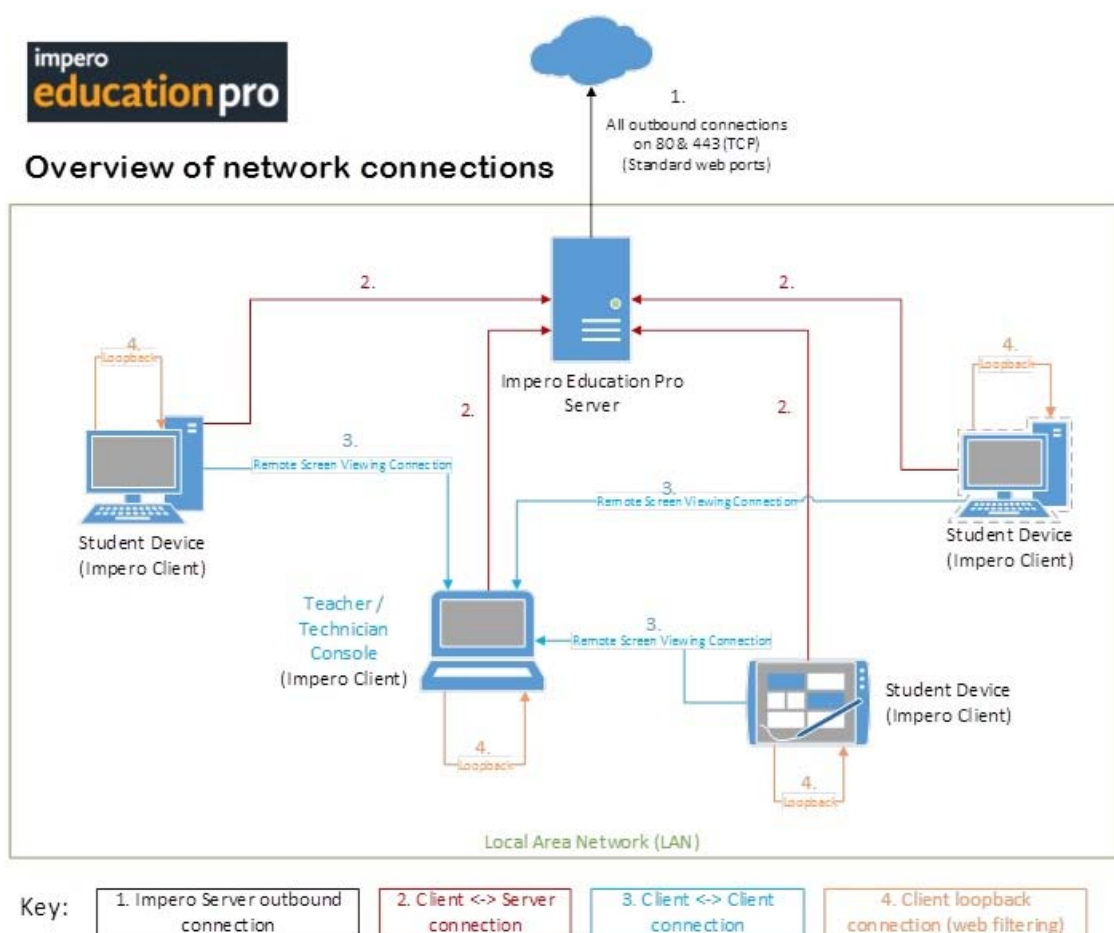


Image 17 - Network Connections

Please see the following sections for a detailed overview of each connection type.

8.1 Impero Server Outbound

The Impero Server only 'dials out' on standard web ports **80** and **443** (TCP). There is an automatic 'Web Check' every twenty minutes, which is the process your Impero Server performs to poll Impero's licensing servers to check for any license changes (i.e. new versions released, more client licenses purchased). This process also anonymously carries some basic usage statistics to help us understand how Impero is being used.

This process is performed outbound through TCP port 443 (https) to **licencing.imperosoftware.com**. If a new version has been released to your account, setup files are automatically downloaded from our domain through port 80 (http) from **v4.imperosoftware.co.uk**.

Please allow outbound connections from your Impero Server through ports 80 and 443 to the following locations:

- *.imperosoftware.com
- *.imperosoftware.co.uk

If you are also using the Impero Patch Management module, there are further outbound connections that your Impero Server will need to perform. These connections are to the following sites through ports 80 and 443:

- *.software.gfi.com/lsnupdate/
- *.download.microsoft.com
- *.windowsupdate.com
- *.update.microsoft.com
- *.lsnupdate.gfi.com

Please note that further connections may be required to third party sites in order to download their patches.

Impero and GFI Patch Management processes all run as the Windows 'SYSTEM' user during normal operation. As such, if you have a web filter that prevents 'anonymous' outbound connections (i.e. prevents non-authenticated processes from dialing out), please consider whitelisting your Impero Server IP address for Internet access.

For further information please see the online [Patch Management](#) guide.

The Impero Server does not need to receive any incoming connections from outside your Local Area Network.

8.2 Impero Client to Impero Server

Impero Client <-> Impero Server

Your Impero Clients need to connect to an Impero Server in order to be able to synchronise any Impero groups, policies and settings. This connection to the Impero Server is also required in order for the client to appear 'online' in the Impero Console, and to be able to launch the Console.

This connection carries the user activity history (applications used, websites visited etc) back to the Impero Server in order to be stored in the central 'Log Viewer' database, which is stored and managed on the Impero Server.

If a client loses its connection to the Impero Server, it will continue to locally apply the last set of policies it received from the Impero Server prior to losing connection. The clients will also log user activity while offline, and automatically synchronise with the Impero Server when reconnected.

The Impero Server listens for incoming connections to perform the above from all clients on **TCP port 30015**, which is the main client connection.

The 'Talk and Listen' feature connections also pass via the Impero Server. The server listens for these connections on **TCP port 30017**, which is the client 'Talk and Listen' audio connection.

Please note that if you have Windows Firewall enabled on the Impero Server machine, a user added 'Allow' exception is required. Please whitelist the '**ImperoAudioServer.exe**' process from the Impero Server folder, or allow incoming connections on port 30017.

Tip: If you wish to globally disable the 'Talk and Listen' feature, you can do so by blocking this communication.

Patch Management Client <-> Impero Server

For any Patch Management client to complete the 'Updating Definitions' process during install and update, the GFI client needs to connect to the Impero Server through **port 1070** as well as 30015.

Please note that if you have Windows Firewall enabled on the Impero Server machine, a user added 'Allow' exception is required. Please whitelist the '**httpd.exe**' process from the 'C:\Program Files (x86)\GFI\Language 11 Agent\Httpd\bin\' folder, or allow incoming connections on port 1070.

Computer Availability / Room Booking

The Impero Server service hosts an optional basic http server for these features on **port 8181**. The port for these features can be changed in the Impero Server.

Impero Server auto discovery

The Impero Server listens for UDP broadcast packets on **port 30016**.

If the server sees an auto discovery UDP broadcast from a client, it will then respond to the client with a unicast UDP message to identify itself. Please note that if an Impero Client has a 'ServerIPFixed.txt' driven connection, it will never attempt auto discovery. If you have multiple Impero Servers running, it is recommended to have the 'ServerIPFixed.txt' file in place to direct the connection to a specific server.

The Impero Console will only see clients connected to the same Impero Server as itself.

All Impero Clients that do not have a 'ServerIPFixed.txt' file (and Chromebook clients) will attempt to resolve the following hostnames in DNS in order to locate an Impero Server to connect to:

IMPERO_SERVER (For non-RFC compliant DNS, i.e. Windows Servers)
IMPERO-SERVER (For RFC compliant DNS, i.e. most non-Windows based DNS)

8.3 Impero Client to Impero Client

The Impero Client to Impero Client peer-to-peer connection is necessary for a number of features within the Impero Console:

- Remote viewing screens
- Remote control of machines
- Broadcast screens
- Send/Collect file tools
- Various other miscellaneous features

All Impero clients require the following port range to be open for communication between each other, in both directions:

30020 - 30221 (TCP/UDP)

If you have more than two hundred Impero client workstations, this port range will increase based on maximum amount of client thumbnail connections you expect to see, i.e. for 1000 clients the port range would be 30020 - 31020.

8.4 Impero Client Loopback

Impero Education Pro has two optional web filtering/logging features that you are able to use. Both features operate locally on the client by use of loopback connections (through 127.0.0.1). You should not need to configure any Firewall rules for this connections.

Impero browser extensions

You have the option to install browser extensions to Chrome, Firefox, Opera and Safari web browsers to enable web filtering and logging for these browsers. The Impero client will listen on **TCP port 30019** to communicate with these extensions on the same device.

Impero proxy listener

You also have the option to enable an internal Impero proxy which will filter all outgoing TCP connections by the client. This loopback filter uses **TCP port 30020** for communication.

9 Impero Server Backups

There are a number of essential files that are created and stored on your Impero Server, which are worth considering when devising any backup plans.

These files are primarily held in the Impero Server install directory. During the installation process you are prompted to select an install directory, by default the location is:

64 bit Windows - 'C:\Program Files (x86)\Impero Solutions Ltd\Impero Server\'

32 bit Windows - 'C:\Program Files\Impero Solutions Ltd\Impero Server\'

There are a number of files and folders that you will see within the install directory location (Image 18).

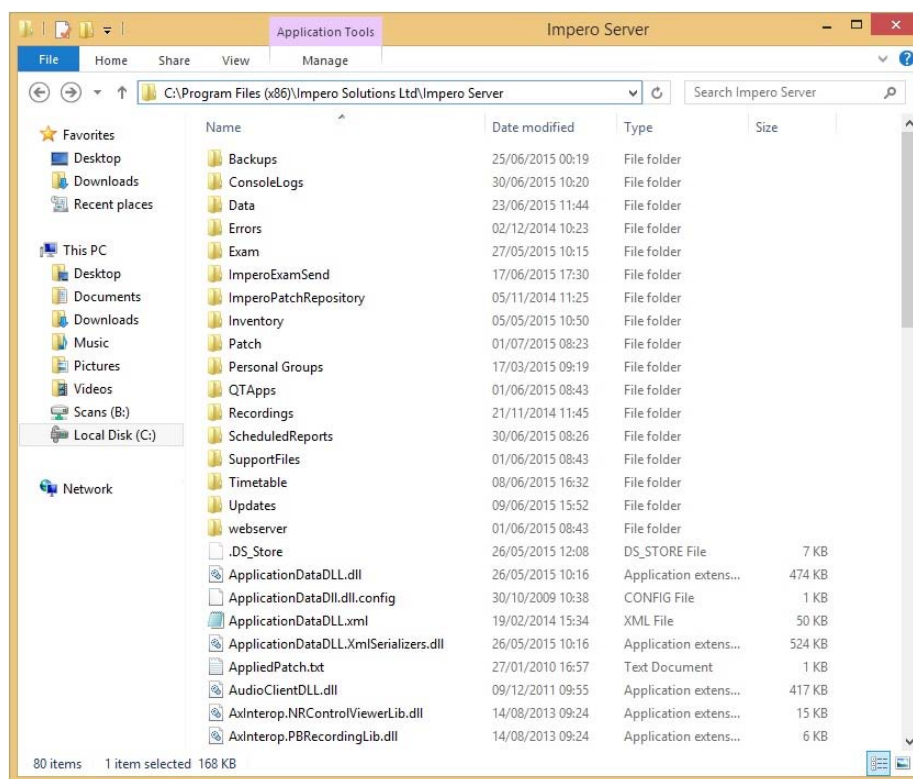


Image 18 - Impero Server Directory

All of the folders displayed here (Image 19) are important in the way that Impero Education Pro functions, however there are varying degrees of importance with these folders when it comes to adding them to your backup routines.

The following folders are particularly important when adding to your backup routines:

Backups

Impero stores a number of XML files in the 'Data' folder which contain information such as your groups, policies, Console Access Rights etc. These XML files are automatically backed up every night, just past midnight, to this 'Backups' folder. It is important to keep a number of these backup folders should you ever need to restore settings from a previous day.

As the backup folders are stored indefinitely, this is a good place to carry out occasional maintenance by deleting older backups from time to time.

Data

The 'Data' folder is the most essential folder within the Impero Server directory. This folder contains the live XML files containing all your Impero settings (groups, policies, Console Access Rights etc), and is automatically backed up on a nightly basis by Impero to the 'Backups' folder.

However, you may also see a sub-folder called '**Logs**'. This 'Logs' folder contains all client activity logs, violation history and Power Management data. This 'Logs' folder can become very large and is not a part of the automatic nightly backup carried out by Impero; it is therefore very important to include this folder within any backup routine.

As this 'Logs' folder can grow quite large, it may be a good idea to store the log files to a separate partition to prevent your Windows partition from filling up. Please note that the logs must be stored to a local drive.

If you wish to edit the location of these log files, you can do so by launching your Impero Server application, and selecting the **'Settings'** tab followed by **'Resource Logging'** (Image 18.1). If you do not see the 'Logs' sub-folder within the 'Data' folder, please check this setting to see where your logs are being stored.

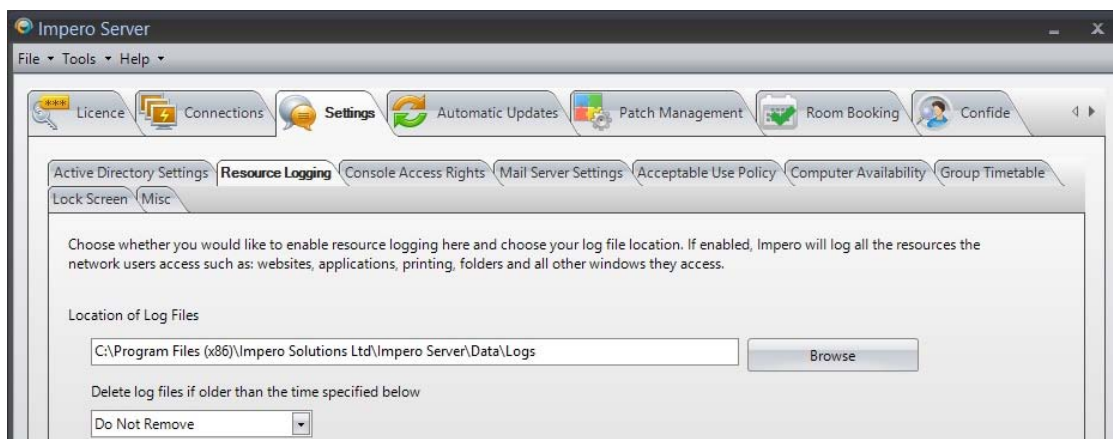


Image 18.1 - Location of Log Files

Please be aware that there will be a high level of disk activity on these logs during working hours, regardless of the location you have chosen to store them. Impero also carries out various backup and archive processes shortly after midnight on this location. For this reason, if you are going to add the 'Logs' folder to your backup routine, it would be best practice to carry out this backup when there is little traffic on the network, i.e. around 2am.

Exam

If your staff use the 'Exam Module' feature within the Impero Console, all associated exam data is held within this folder.

Patch

If you use the additional 'Patch Management' module within Impero, the database holding all patch information and configuration is contained within this folder. This folder is highly important to consider adding to your backup routines if you use the Patch Management module.

The next set of folders can also be added to your backup routines if you feel they are required for your Impero configuration, however they are not vital to the day-to-day running of Impero:

ConsoleLogs

This folder contains logs of Impero Console user activity, i.e. all actions carried out by users that have used the Impero Console. The logs within this folder are kept for thirty days before being automatically purged.

Recordings

This folder contains all Impero client screen recordings, both manual and automatically captured recordings. If you use the screen recording feature to capture evidence of violations, or through Impero's e-safety keyword libraries, then it may be worthwhile to backup this folder to ensure this evidence is retained.

ScheduledReports

This folder will contain any CSV files that are generated by the 'Scheduled Reports' feature that can be configured through the Log Viewer application to create a scheduled automatic report, i.e. 'top violating users of the day'.

The remainder of folders that appear in this directory are non-essential when considering backup routines:

Errors

This folder will contain any error files created by Impero for troubleshooting purposes.

ImperoExamSend

This folder contains files used by the 'Exam Module' feature when an exam is sent to client machines.

ImperoPatchRepository

This is the default folder that the Patch Management module downloads its patches to; however this location can be, or may

have been, modified from the Impero Server > Patch Management tab (Image 18.2).

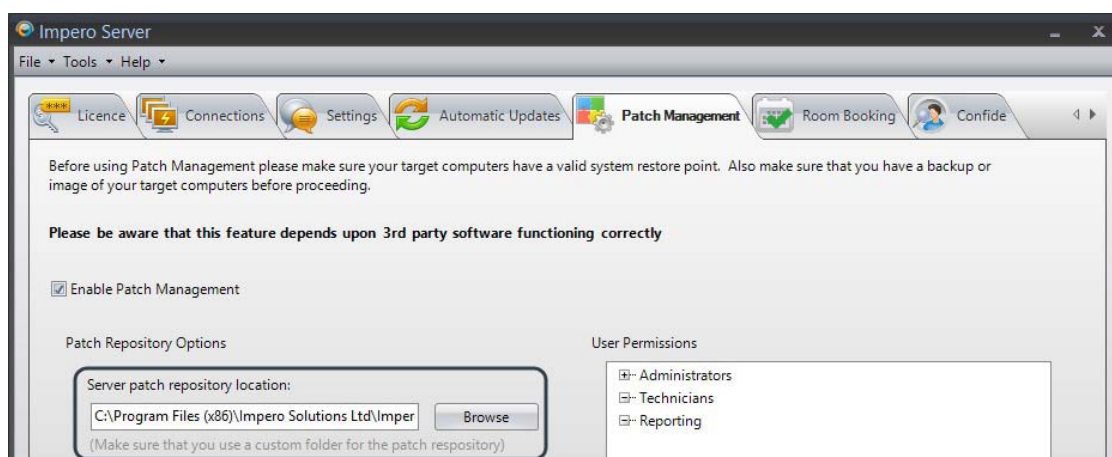


Image 18.2 - Patch Repository Location

This folder is non-essential as any files required by Patch Management will be re-downloaded.

Inventory

This folder holds all XML files in relation to client hardware and software Inventory data. If any client Inventory file is missing, it will be recreated when the client connects back to the server.

QTApps

This folder is used during the server install process, and may now appear empty.

SupportFiles

This folder will contain various application binary files.

Updates

This folder will contain various install files for Impero Server and clients. For every version you are and have been permitted to run, install files are automatically downloaded to this location. This files can also be downloaded from the Impero website upon request.

Webserver

This folder contains files required by the built-in web server to run the 'Room Booking' and 'Computer Availability' features. This folder is not required for backups, however, if you do use the 'Room Booking' feature, all booking information is held in a CSV file that you may wish to backup to preserve information on bookings. The location of this CSV file can be found in the Impero Server > Room Booking tab (Image 18.3).

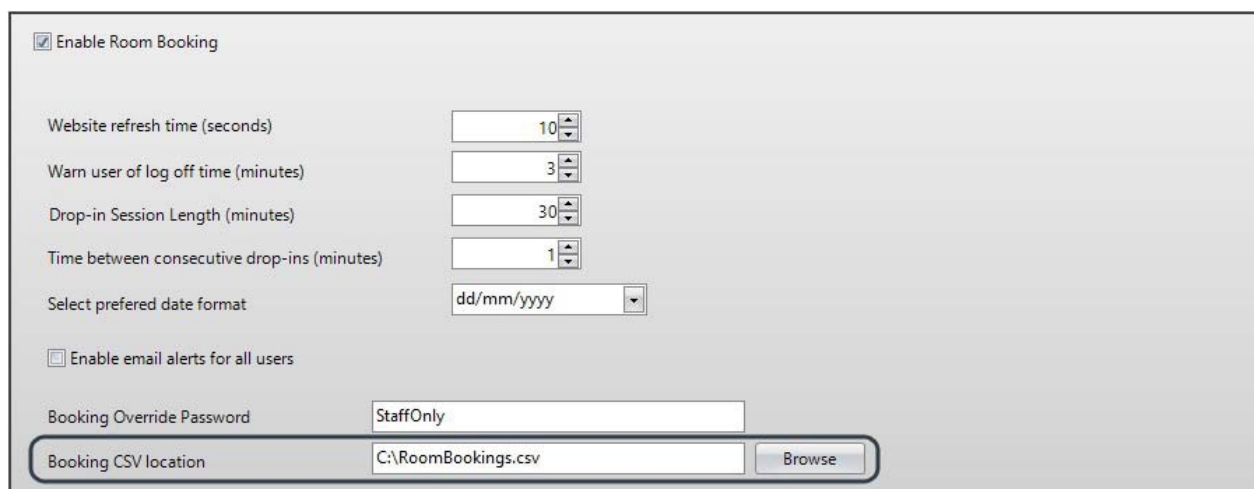


Image 18.3 - Booking CSV Location

info@imperosoftware.com
www.imperosoftware.com

+44 (0) 1509 611 341

