Installation Procedures
and Checklist

Scrutineering Application

Introduction

To obtain a full working system (complete with Android Tablets) there needs to be several components installed. The installer may need to refer to documentation specific to the version of Microsoft Access to be installed. However, the install procedure can be summarized into 3 distinct sections.

1. Installation of Microsoft Access, including Microsoft security settings,
2. Installation of a Web Server, including htdoc files, and
3. Installation of Android .apk for the Adjudicator Devices.

Installation Checklist

The following checklist is a summary of the steps required to set up the Scrutineering Environment.

Use this checklist to ensure that all steps are taken in the **order shown**.

1. Installation of Microsoft Access,
2. Microsoft Access Macro Security and Trusted Location settings,
3. Install of XAMPP as Administrator,
4. Set Http Web Server as a **service**,
5. Allowing your http service through your firewall,
6. Install Intranet (web Server) Files,
7. Set C:\dancescore folder as a **Junction**,
8. Configure your Network Adapter to a **Static Address**, and
9. Installation of the apk file onto the Adjudicator Devices.

The Following pages provide a step-by-step procedure for each of the checklist items.

Once the full installation is completed, you can move to the next chapter of Configuration and Testing the Scrutineering Environment.

Install Microsoft Access

Install of the MS Access application either direct from Office 365 or from a third party supplier of the MS Access program. Any version MS Access form 2007 will be compatible.

MS Access can be part of the MS Office suite of applications ... Word, Excel, PowerPoint, etc., or you may choose to install a standalone version of MS Access, or the MS Access Runtime.exe. Once MS Access is installed on your computer you will be able to run the WDSF Scrutineering Application.

To ensure that Tablets find the required data when operating it is essential to run the Scrutineering Application from a fixed position within your PC. Create a folder directly on the C: Drive called *dancescore* (note this is in lowercase and full path will be a: **c:\dancescore**).

The application.zip file can be downloaded from the Scrutineer login on the WDSF site. Once downloaded extract WDSF Scrutiny Application and copy to the file into the c:\dancescore folder.

NOTE: The download will contain two (2) '.mde' files, one a 32bit the other a 64bit. It is recommended that the 64bit version is used however the 32bit is supplied for legacy installations.

The '.mde' files are blank with no data installed. It is highly recommended that you take the time to work through the **Quick Start Tutorial** before proceeding.

Microsoft Security Settings

As with all other Microsoft programs, Access has multiple levels of security. This is to stop hackers, (people with way too much time on their hands), from writing malicious code that could infect your computer and damage your data. However, if you are only using your Microsoft Access for running Scrutineering, which most of us are, you can turn down the Macro Security level and stop those annoying and sometimes confusing security messages.
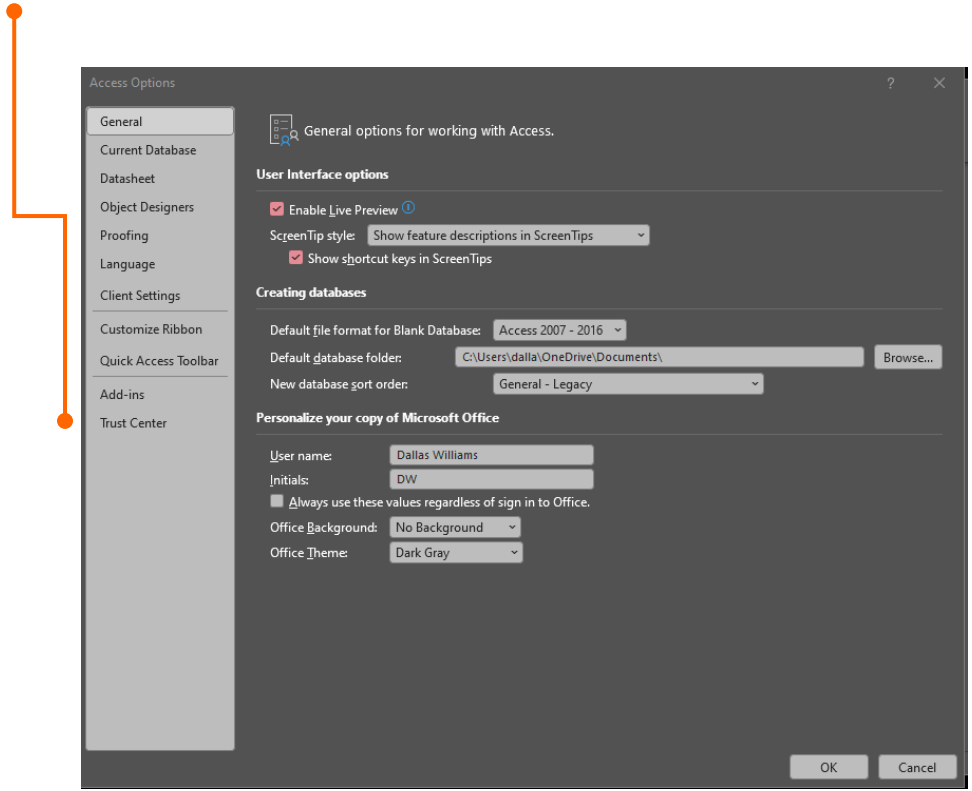
The MS Access FILE menu is where you will find the Security Settings.
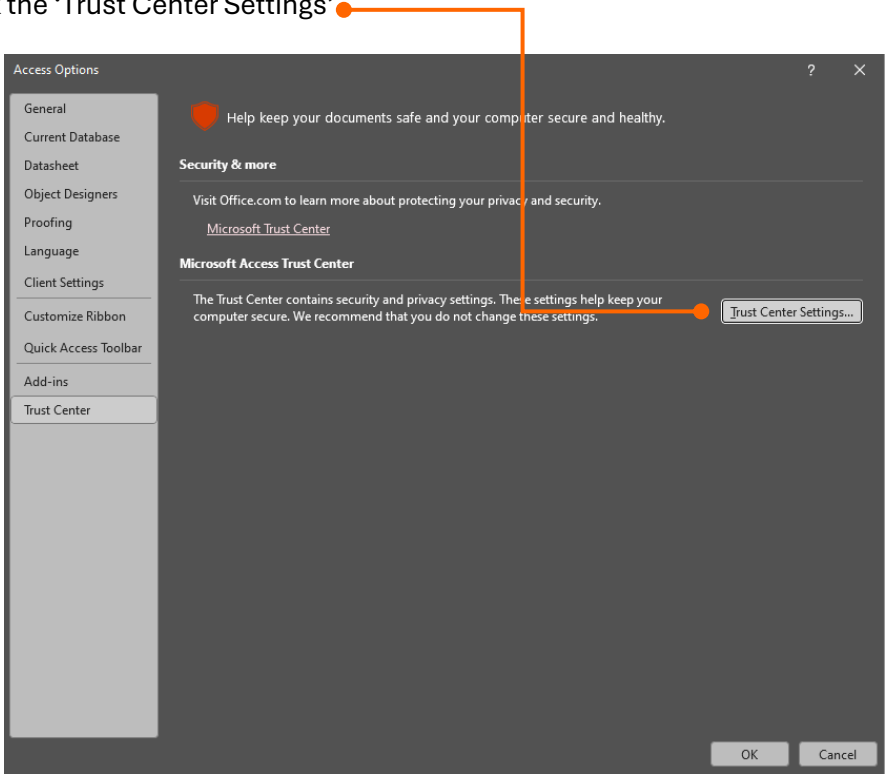
Click the 'Options' menu item
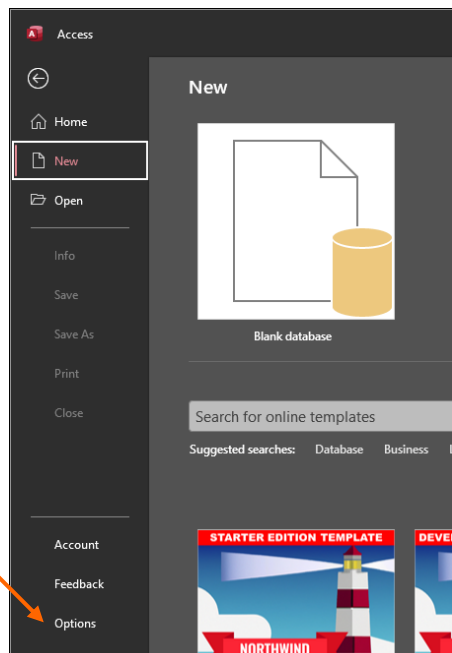
The Access Options will open and the setting we are looking for is located in the 'Trust Center' menu item.
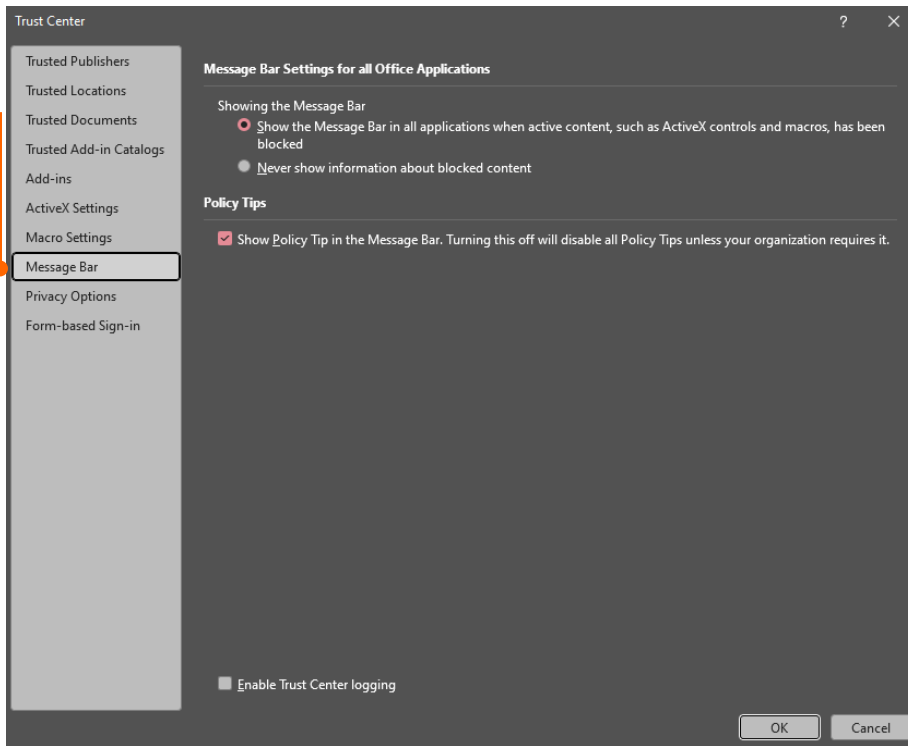Click the 'Trust Center' menu item.
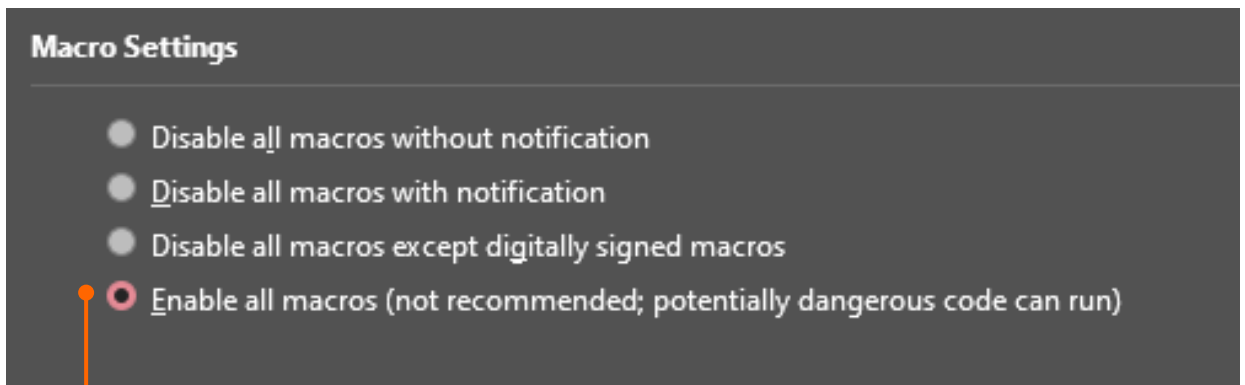

Now click the 'Trust Center Settings'

These settings are intentionally buried deep in the Options menu so that accidental changes to security cannot be made.

The two settings we want to change are the Macro and Trusted Location Settings.

Click the Macro Settings menu item.


Select the 'Enable all macros' setting.

NOTE: It says, 'not recommended', this is to warn people who don't know what they are doing. It is assumed that as a Scrutineer you are computer literate and certainly do know what you are doing.
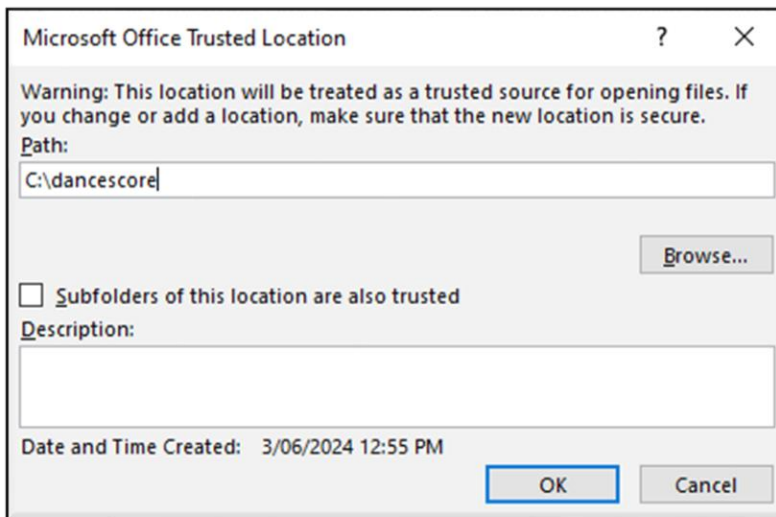
Access 2007 and above use 'Trusted Locations'. These are directories on your hard drive or network that Microsoft Access will consider safe and run any programs from that location.

Click on the 'Trusted Locations' menu item.

From here we will add a new location.
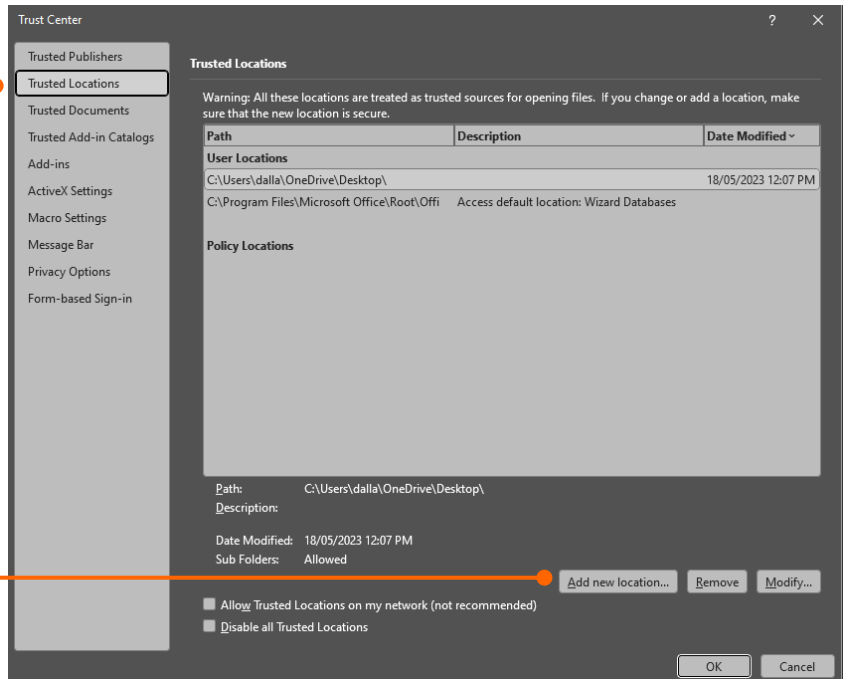
C:\dancescore will be added as a Trusted Location.

Click 'OK' to save, then click OK, and OK again to exit the Options menu entirely.

You have now configured the security setting.

Note: Access Runtime does not have the same security settings as the full versions of Access.

Install the Web Server

After installing and running the WDSF Access .mde file in the c:\dancescore folder you will see that the program creates a number of folders which are used for data exchange with the Adjudicator devices and intranet. For data to get from your PC to the Adjudicator devices it is necessary to install a web server.

An Apache web server is used to interface between the Tablets and the scrutineering PC.

Apache is the world's most used web server software and was developed in the early 1990s. It has evolved into the most stable http platform which is why we will use it for our http interface. This software is distributed for free and if you want any more information visit the apache.org website.

To make this installation easy we are going to use a package called XAMPP which bundles up all the things we need into one neat, easy to install bundle. This package will install for us the Apache server with both PHP and MySQL. If you want more specific information about XAMPP then visit the apachefriends.org website.

https://www.apachefriends.org/index.html

Download the recommended install package and save it somewhere on your PC, the Desktop will do as it is not required after installation and can be deleted.

It should look like this.
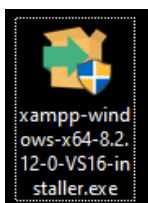
**NOTE:** *You should only be doing an installation a PC where you have Administrator Rights.*

RIGHT CLICK on the downloaded installation file and select **"Run as Administrator"** to start the install. The usual windows caution will pop up warning that you are about to change your system files, click OK to proceed.
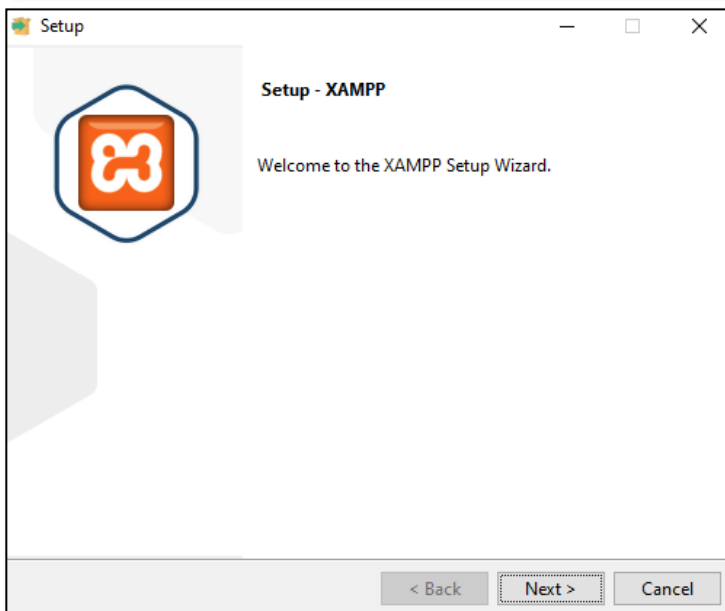
We don't want to install everything on offer so read the screens carefully....

Click OK to continue.
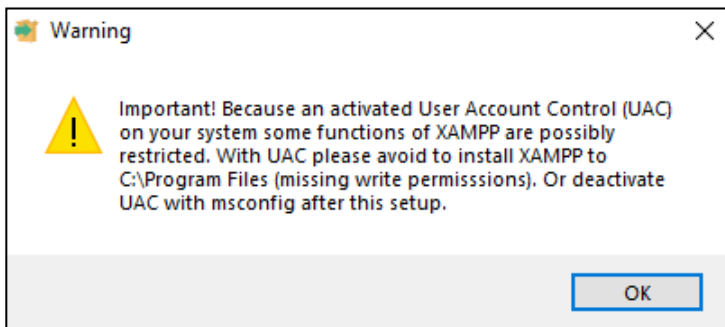
Click Next to continue.

The Setup Wizard begins ......

The first thing is to select the Components of the web server we want installed.

It is recommended that you unselect FileZilla, Mercury, Tomcat, Pearl and Fake Sendmail. These components you will not use in the operation of the Scrutineering process.

NOTE: If you are using XAMPP for other purposes as well as Scrutineering such as for WordPress, Joomla, Drupal, etc., feel free to install other components.

The full installation of all components will not affect the operation of the Scrutineering process.
The ones that have been removed are simply not required.

Click Next.
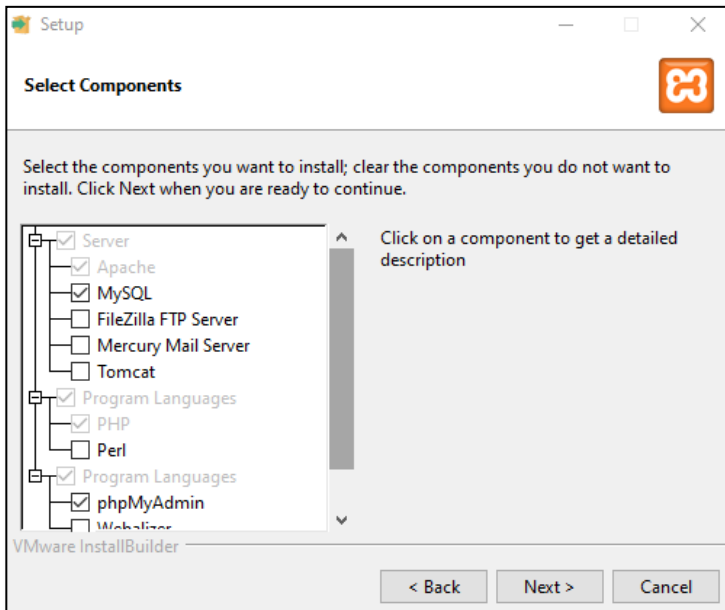
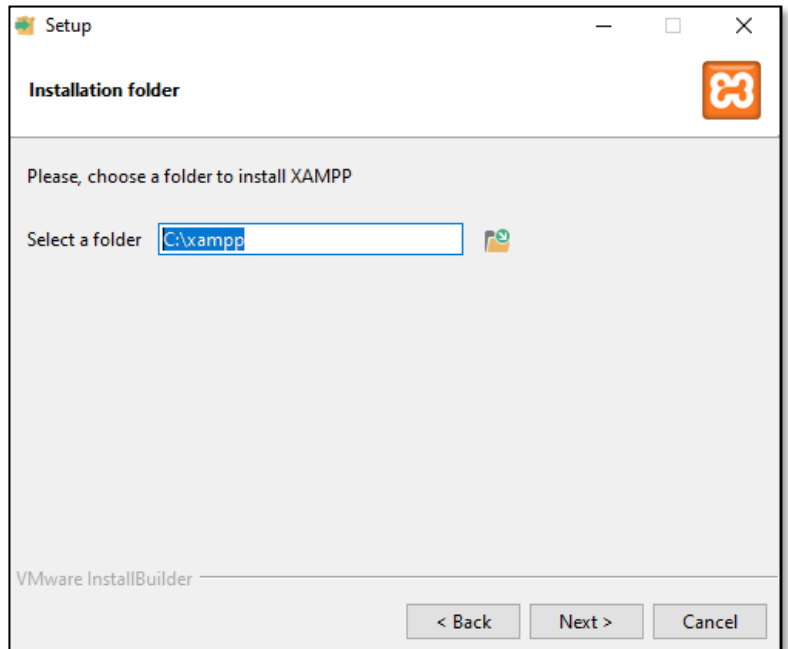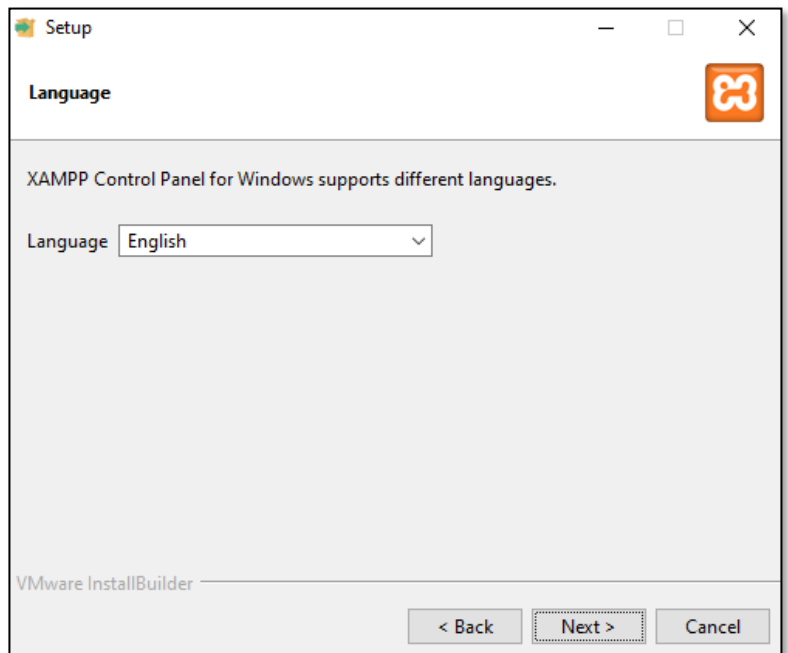The folder that will be used is the C:\xampp folder. Keep things simple, do not change this.
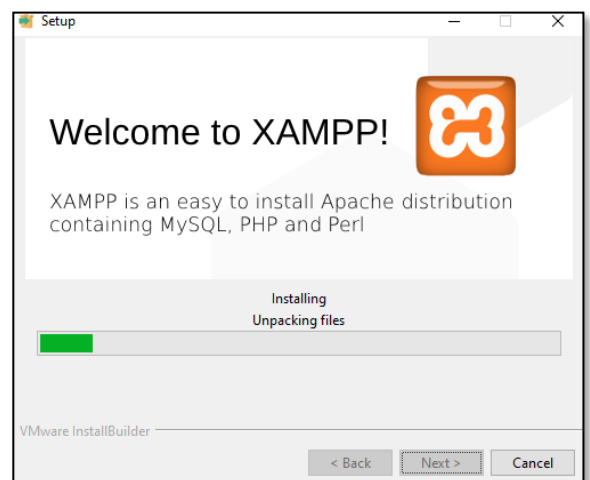
Click Next.

Select your language.
Click Next.

The Setup package is now ready to install.

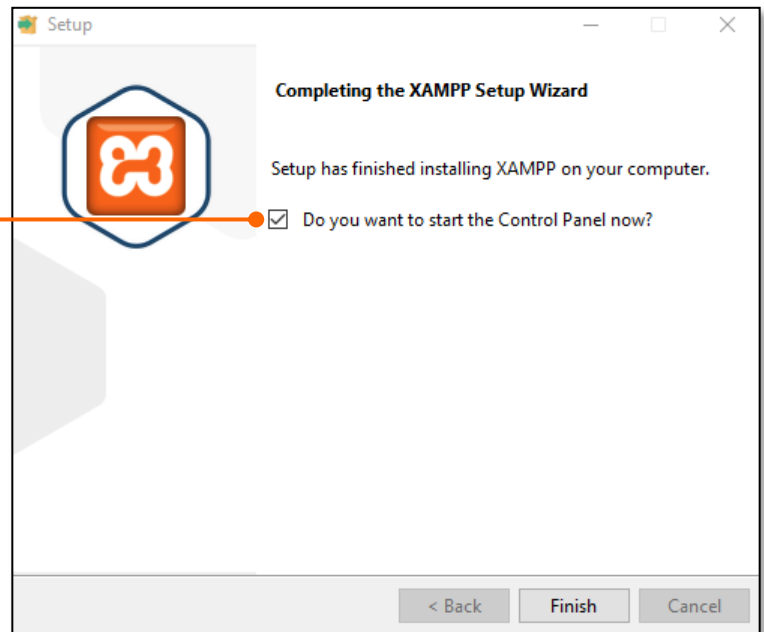Click Next to start the installation.

Your WEB SERVER (The XAMPP software) is now installed!

Un-check the "Do you want to start the Control Panel now?"

YES WE WILL! but we will do this using Administrator Rights.

View the files and folders that have been created by the install package.

Open C:\xampp

Installing Apache and MySQL as a Windows Service (Highly Recommended)

Running the web server as a Service will improve the efficiency of your setup, however it is not a requirement.

As a Service the web server will automatically boot with Windows. It has an extremely small overhead and consumes minimal resources.

You could choose to start the web server via the XAMPP Control Panel when required, however this is easy to forget and may require configuration of your firewall depending on your Windows Security setting.

Within the C:\xampp folder you will see a list of directories created and associated files.

To set the Apache server to run as a Windows Service we need to run the **xampp-control.exe** file as **Administrator**.

NOTE: You must be run the **xampp-control.exe** file in the Administrator mode else you will not be able to establish the Windows Service.

Locate the file xampp-control.exe at the bottom of the file list and Right-Click, this will open the Windows Context Menu where you will select "**Run as Administrator**".
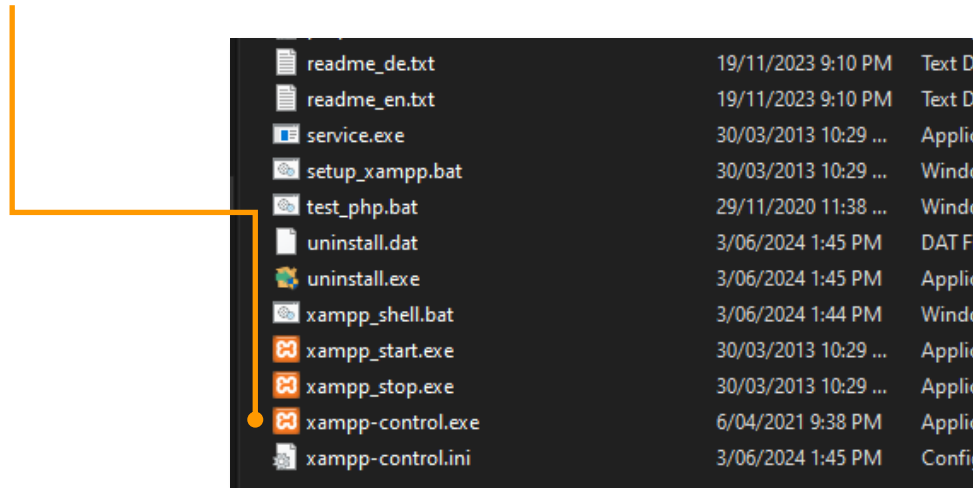
The XAMPP Control Panel allows for the control of the http environment.
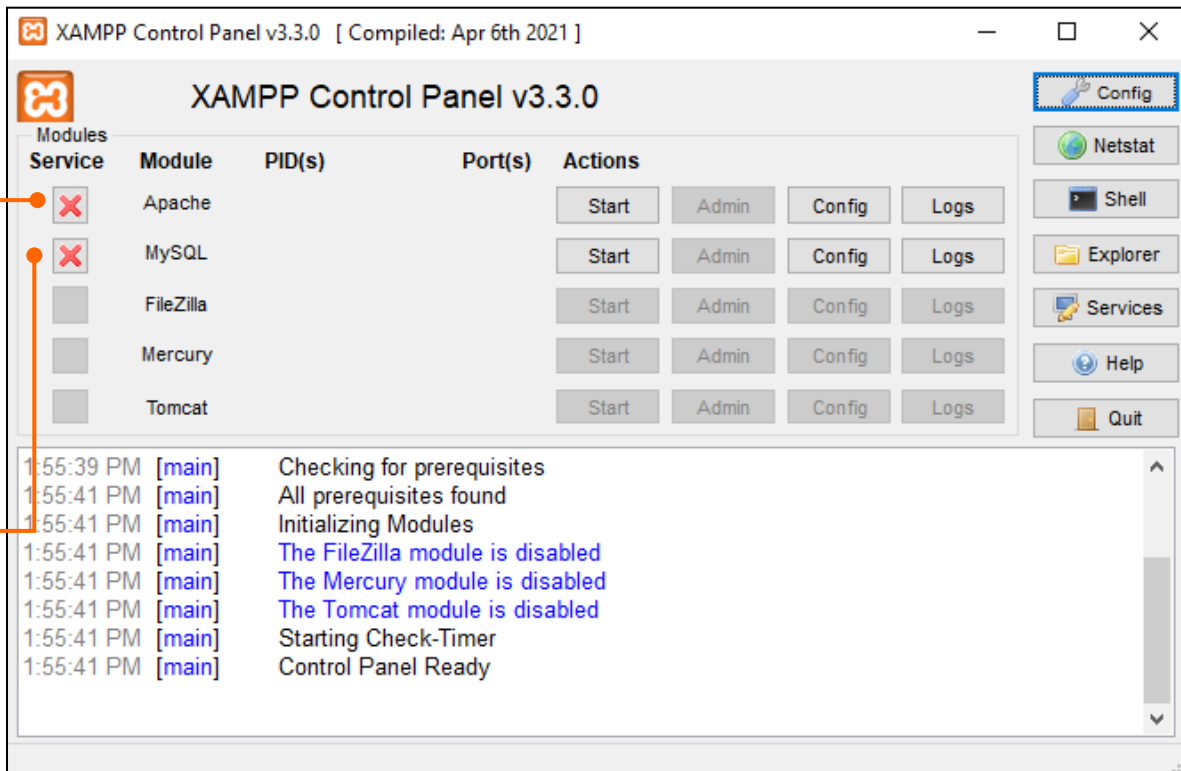
To set Apache as a service click on the Apache service icon and follow the prompt.

If you want to set your MySQL as a service (optional for Scrutineering) click on the MySQL service icon and follow the prompt.

Once installed as a service the 'X' icons will change to a green 'tick'. Be award that you can only see these icons if you are running the XAMPP Control Panel in the Administrator mode.

To start Apache and MySQL without restarting your PC, simply click the 'Start' buttons, these will change to 'Stop' buttons once started.
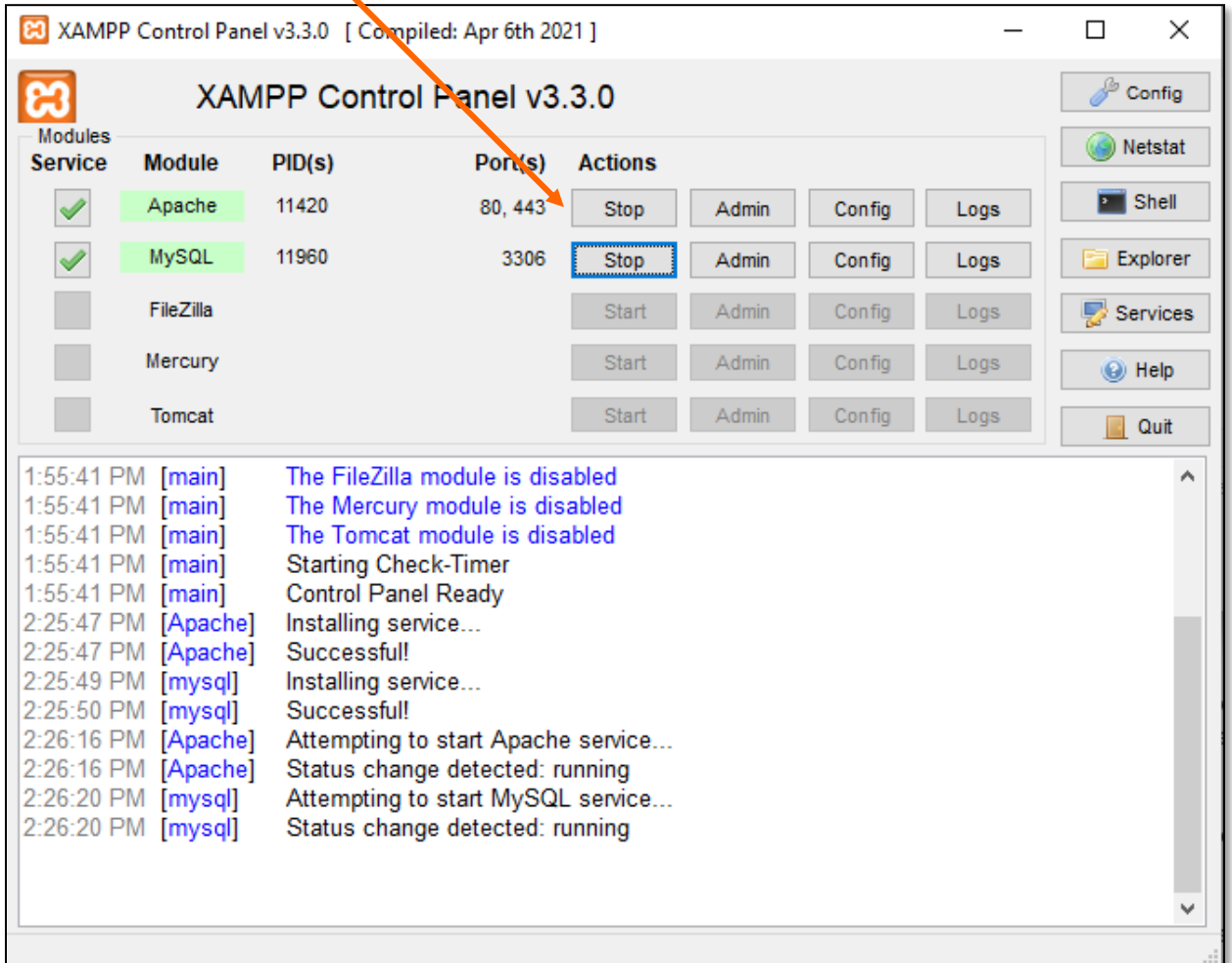
Before adding the Scrutineering files and configuring the XAMPP web server it is a good idea to test the installation to make sure everything is working as it should.

Open a browser and type 'localhost' into the URL bar (NOT the Search Bar) and you should see an XAMPP Splash Screen.

Localhost is your PC's local web server root folder. It can also be accessed with the IP address 127.0.0.1

Below is the index file (or one similar) that should open with the **localhost** or **127.0.0.1**
If you are seeing this page, then you web server is working!

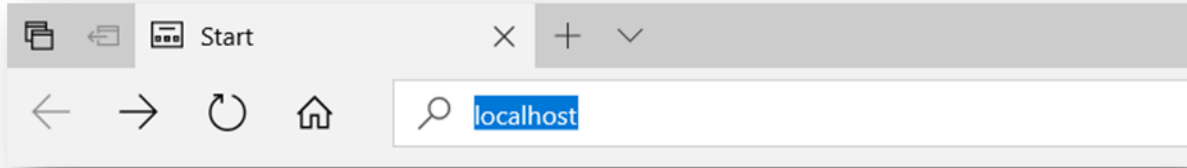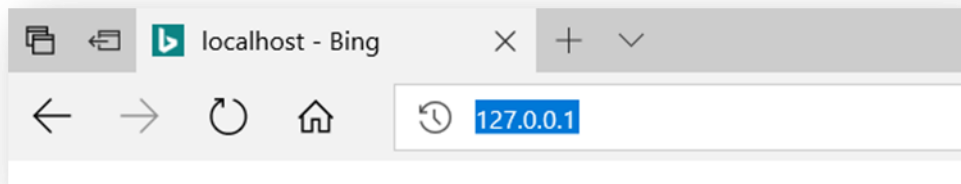Apache Friends   FAQs   HOW-TO Guides   PHPInfo   phpMyAdmin

XAMPP Apache + MariaDB + PHP + Perl

Welcome to XAMPP for Windows 8.2.12

You have successfully installed XAMPP on this system! Now you can start using Apache, MariaDB, PHP and other components. You can find more info in the FAQs section or check the HOW-TO Guides for getting started with PHP applications.

XAMPP is meant only for development purposes. It has certain configuration settings that make it easy to develop locally but that are insecure if you want to have your installation accessible to others.

Start the XAMPP Control Panel to check the server status.

Community

XAMPP has been around for more than 10 years – there is a huge community behind it. You can get involved by joining our Forums, liking us on Facebook, or following our exploits on Twitter.

Firewalls are there to protect us from on-line threats which are unfortunately commonplace in today's internet environment. However, sometimes Firewalls can work against us when working in a closed environment such as our WDSF Intranet.

Whilst it is possible to simply turn off your Firewall, this is not best practice. Instead, we will simply create a Firewall Rule that will allow the http service to conduct its business unrestricted.

Search on your pc for the word Firewall and then proceed to open the Firewall & network protection link.

Click on the 'Allow an App through Firewall' link.

Allow apps to communicate through Windows Defender Firewall

To add, change, or remove allowed apps and ports, click Change settings.

What are the risks of allowing an app to communicate?   🛡 Change settings

Allowed apps and features:

Name	Private	Public
☑ 3D Viewer	☑	☑
☑ Adobe Notification Client	☑	☑
☑ AirDroid Cast	☑	☐
☐ AirDroid Cast	☐	☑
☑ AllJoyn Router	☑	☐
☑ Apache HTTP Server	☑	☑
☑ App Installer	☑	☑
☑ ArcSoft TotalMedia 3.5	☐	☑
☑ Bonjour Service	☐	☑
☑ Bonjour Service	☐	☑
☑ Captive Portal Flow	☑	☑
☑ Cast to Device functionality	☑	☑

Details...   Remove

Allow another app...

To allow an Application to transverse the Firewall.

Click 'Change Settings'

Then click the '**Allow another App**' button at the bottom of the screen.

Add an app   ✕

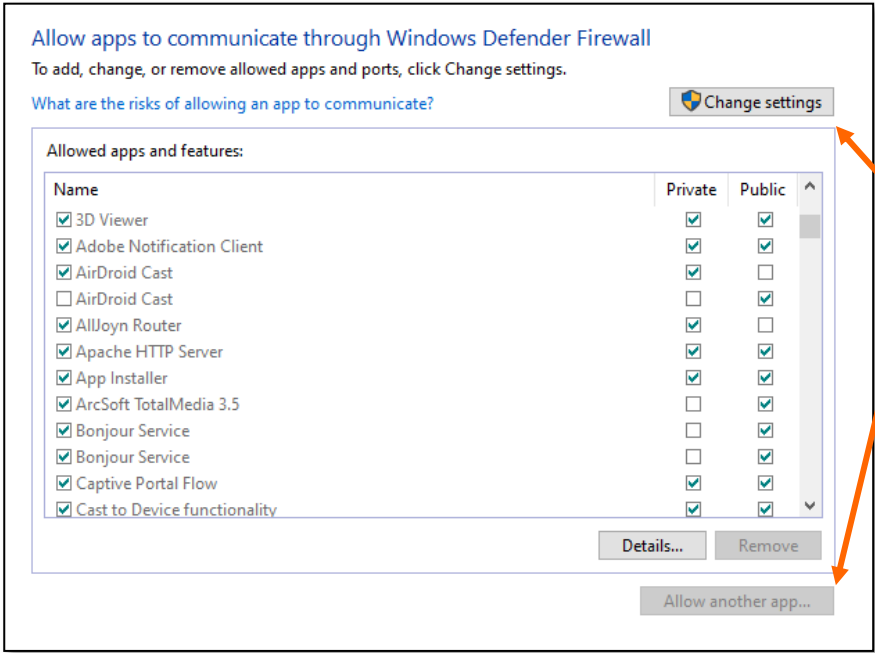Select the app you want to add, or click Browse to find one that is not listed, and then click OK.

Apps:

Path: [   ]   Browse...

What are the risks of unblocking an app?

You can choose which network types to add this app to.

Network types...   Add   Cancel
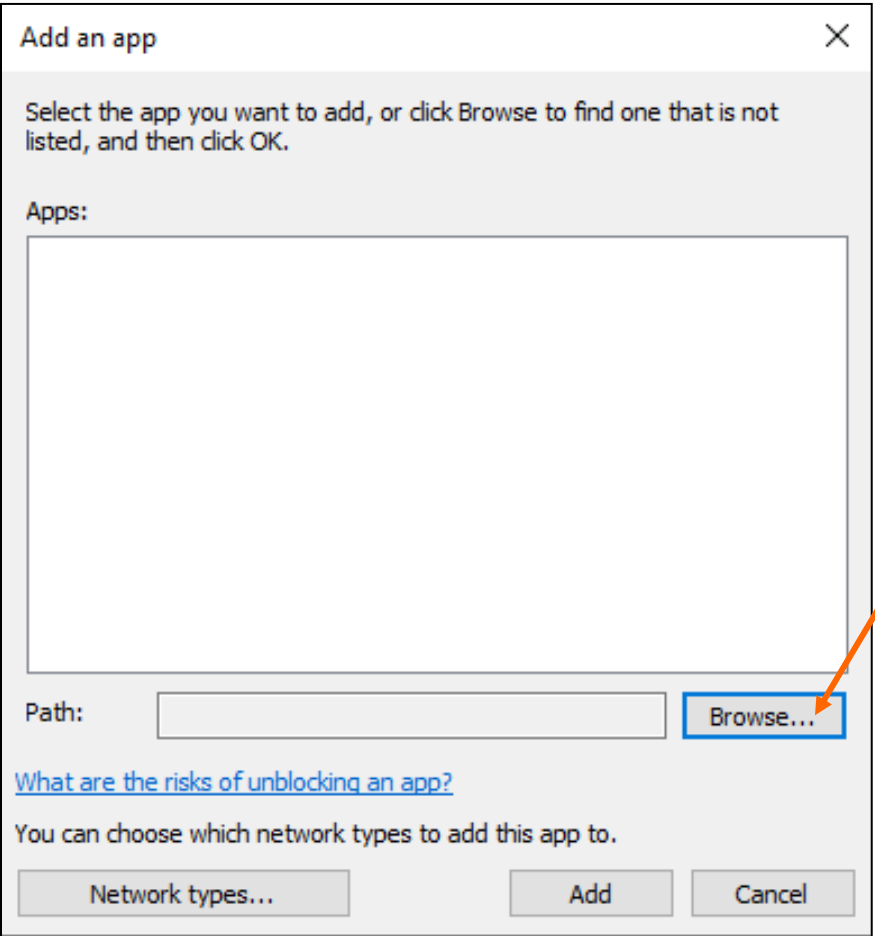
We will search your computer for the Application.

Click the Browse button.

In the browse screen navigate to:

C:\xampp\apache\bin

Select the file: **httpd.exe**

Browse			
← → ⌄ ↑	This PC › Windows (C:) › xampp › apache › bin	v ↻	Search bin 🔎

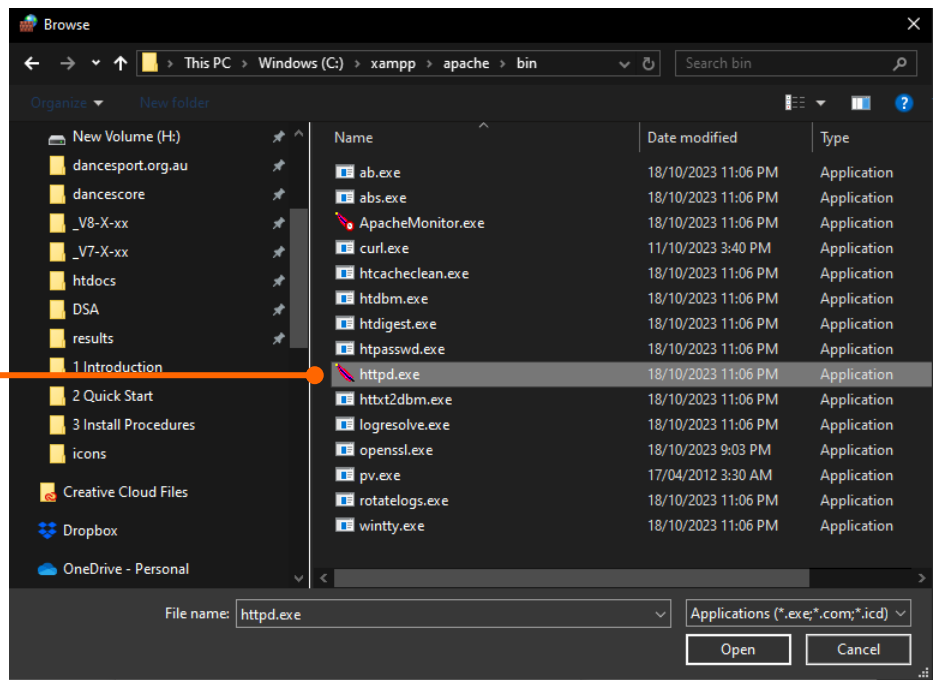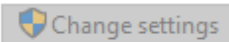| Name	Date modified	Type
ab.exe	18/10/2023 11:06 PM	Application
abs.exe	18/10/2023 11:06 PM	Application
ApacheMonitor.exe	18/10/2023 11:06 PM	Application
curl.exe	11/10/2023 3:40 PM	Application
htcacheclean.exe	18/10/2023 11:06 PM	Application
htdbm.exe	18/10/2023 11:06 PM	Application
htdigest.exe	18/10/2023 11:06 PM	Application
htpasswd.exe	18/10/2023 11:06 PM	Application
httpd.exe	18/10/2023 11:06 PM	Application
httxt2dbm.exe	18/10/2023 11:06 PM	Application
logresolve.exe	18/10/2023 11:06 PM	Application
openssl.exe	18/10/2023 9:03 PM	Application
pv.exe	17/04/2012 3:30 AM	Application
rotatelogs.exe	18/10/2023 11:06 PM	Application
wintty.exe	18/10/2023 11:06 PM	Application

File name: httpd.exe — Applications (*.exe;*.com;*.icd) ⌄

Open   Cancel

Add an app ×

Select the app you want to add, or click Browse to find one that is not listed, and then click OK.

Apps:

Apache HTTP Server

Once selected click the 'Add' button.

Path: C:\xampp\apache\bin\httpd.exe   Browse...

What are the risks of unblocking an app?

You can choose which network types to add this app to.

Network types...   Add   Cancel

Now that the Application is added to the list, navigate to the Apache HTTP Server and make sure that it is selected and that the Private and Public permissions are also ticked.

You have successfully added a new Firewall Rule!

Your installation so far has created a Web Server that can now be used to access the data created by the Scrutineering Application. Obviously the most important thing is to communicate with the Adjudicator devices but there are other uses for our private Web Serer/Intranet.

- A display for the MC & DJ that shows 'live' data about each Round.
- A display for the current Item Number.
- An interface for the Chairperson which shows the Adjudicator login status.
- APK link, for the installation and update of the Adjudicator devices.

Download the htdocs.zip file and the apk.zip file, extract the contents of both files. The contents of this zip file will be copied to the C:\xampp\htdocs folder.

File tree will be as follows:
C:\xampp\htdocs   \API   ... WDSF API communication files
                         \apk   ... the current ds.api file for Adjudicator App installation
                         \core ... base communication files for the Adjudicator App
                         \ds   ... extra functionality
                         \wdsf ... extra functionality

NOTE: The folders \wdsf & \API are only required for installations that are processing WDSF competitions.

These files provide the 'back end' of our web environment and no other installation is required apart from copying the files into the htdocs folder.

To test that you have the files copied correctly open a browser and type in localhost in the same way that we tested the XAMPP installation.

Your browser screen should look something like this depending on the 'BRANDING' of version installed.
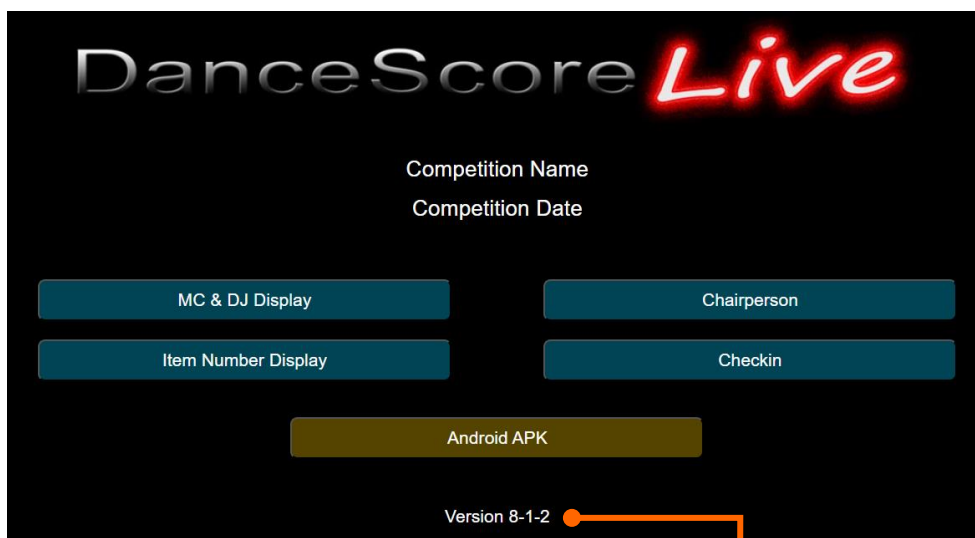
NOTE: The Version Number is located at the bottom of the screen.

Creating a Junction - **! IMPORTANT !**

To access the C:\dancescore folder from within the XAMPP server environment we create a '**Junction**'.
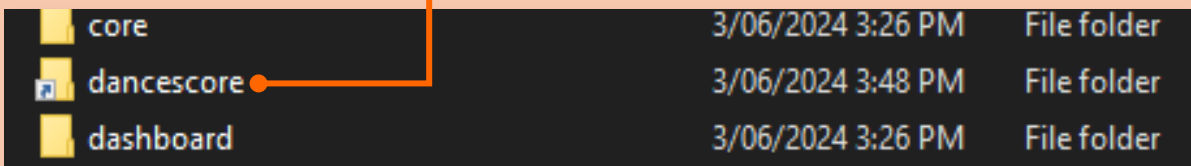
Use you file explorer to navigate to C:\xampp\htdocs, here you will find two files that were copied to the htdocs folder when you installed the Web Server/Intranet files (previous step):

1. junction.exe
2. junction_make.bat

Double click the **junction.exe** file to run, select the '**I agree**' and close the file.

Now double click the 'junction_make.bat' file to create the **Junction** with the folder C:\dancescore.

There should now be a Folder Icon called 'dancescore' with a small arrow like the image below in your htdocs folder.

core	3/06/2024 3:26 PM	File folder
dancescore	3/06/2024 3:48 PM	File folder
dashboard	3/06/2024 3:26 PM	File folder

Network Adapters

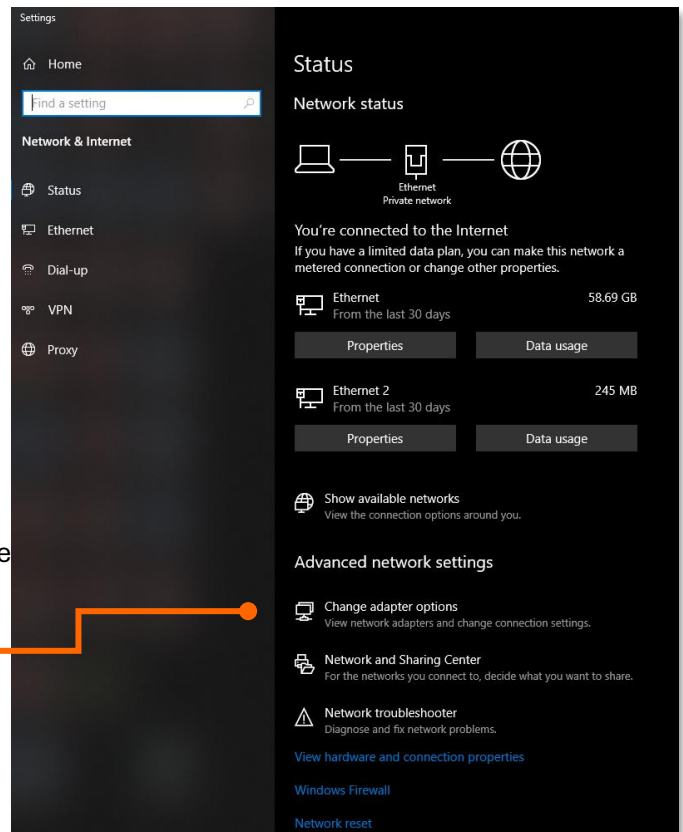For our Web Server to function correctly we require a **STATIC IP ADDRESS** that devices can reference in order to send and receive data.
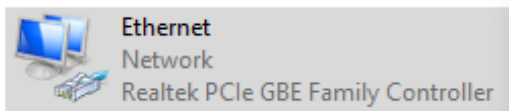
All other address may be set via the DHCP service, of course you might require other static address if you are operating network printers and terminals.

The default server IP Address we use is **192.168.1.254**

Search '**network**' on your PC and select 'Ne

Select '**Change adapter options**'.

Ethernet
Network
Realtek PCIe GBE Family Controller

Ethernet Properties ✕

Networking | Sharing

Connect using:

Realtek PCIe GBE Family Controller

Configure...

This connection uses the following items:

☑ 🖥 Client for Microsoft Networks
☑ 🖥 File and Printer Sharing for Microsoft Networks
☑ 🖥 Npcap Packet Driver (NPCAP)
☑ 🖥 QoS Packet Scheduler
☑ 🖥 Internet Protocol Version 4 (TCP/IPv4)
☐ 🖥 Microsoft Network Adapter Multiplexor Protocol
☑ 🖥 Microsoft LLDP Protocol Driver

Install... | Uninstall | Properties

Description
Allows your computer to access resources on a Microsoft network.

OK | Cancel

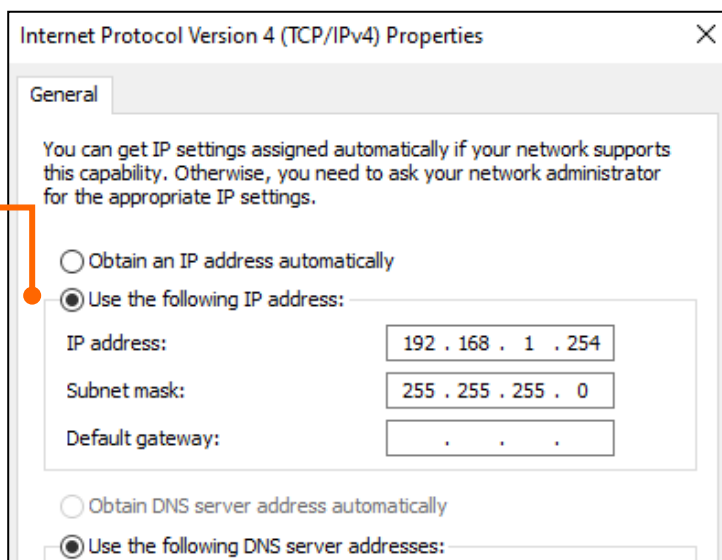Right-Click on your Ethernet Connection and select the '**Status**' of that connection.

Click on the **TCP/IP 4** item to open that property.
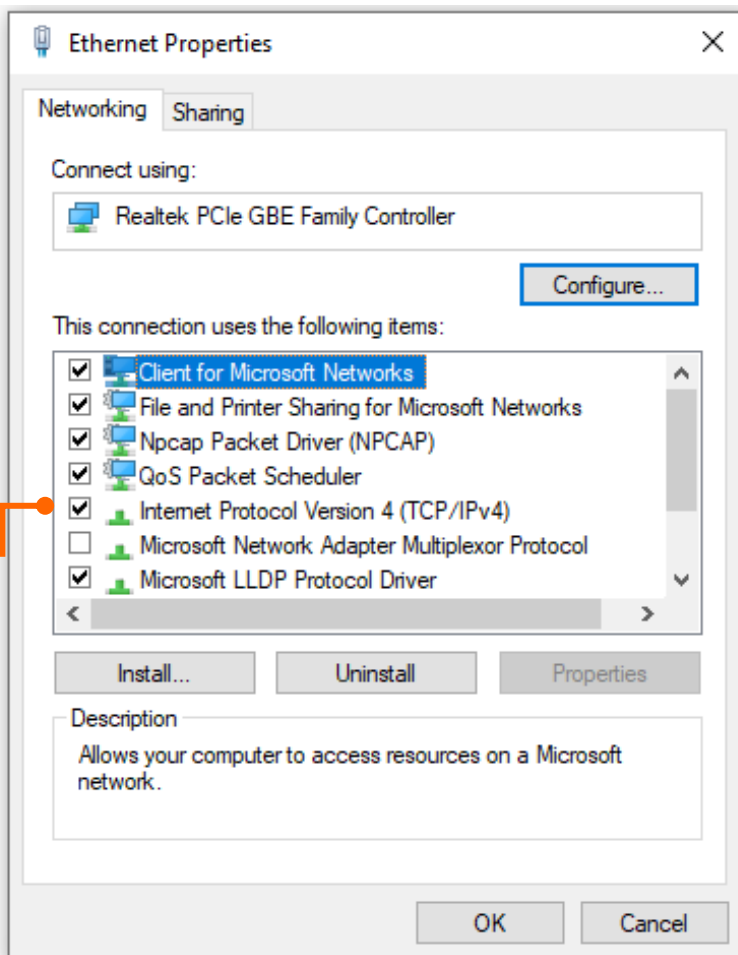
Click the selector that says '**Use the following IP address**'.

Enter **192.168.1.254**
Subnet **255.255.255.0**

Gateway will depend on your router. DNS is not required under normal operation.

Internet Protocol Version 4 (TCP/IPv4) Properties ✕

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

○ Obtain an IP address automatically
◉ Use the following IP address:

IP address: 192 . 168 . 1 . 254

Subnet mask: 255 . 255 . 255 . 0

Default gateway: . . .

○ Obtain DNS server address automatically
◉ Use the following DNS server addresses:

Installation of Adjudicator Devices

Adjudicator devices are required to be Android and the apk file that will be installed has already been copied to your web server and lives in the htdocs folder. We are going to 'side load' the application.

If you have never installed an apk file before there are a couple of things you need to know about Android security, and it very much depends on the version of Android you have. Essentially you must give explicit permission to the operating system.

Find the Android Setting on your Tablet, open the 'Security Settings' (it may be under Lock screen and security) turn on the Unknown Sources. This will allow the file to install.

The full file path is C:\xampp\htdocs\apk\ds.apk ... although you are not required to remember this. Simply just open a browser on your Adjudicator Tablet device and go to the server URL http://192.168.1.254

This is exactly the same screen that we saw in the Localhost test but as we are coming form outside the Host, we are using the Host's IP Address. I suggest you bookmark this address because it will make updates to the Adjudicator Tablets easy.
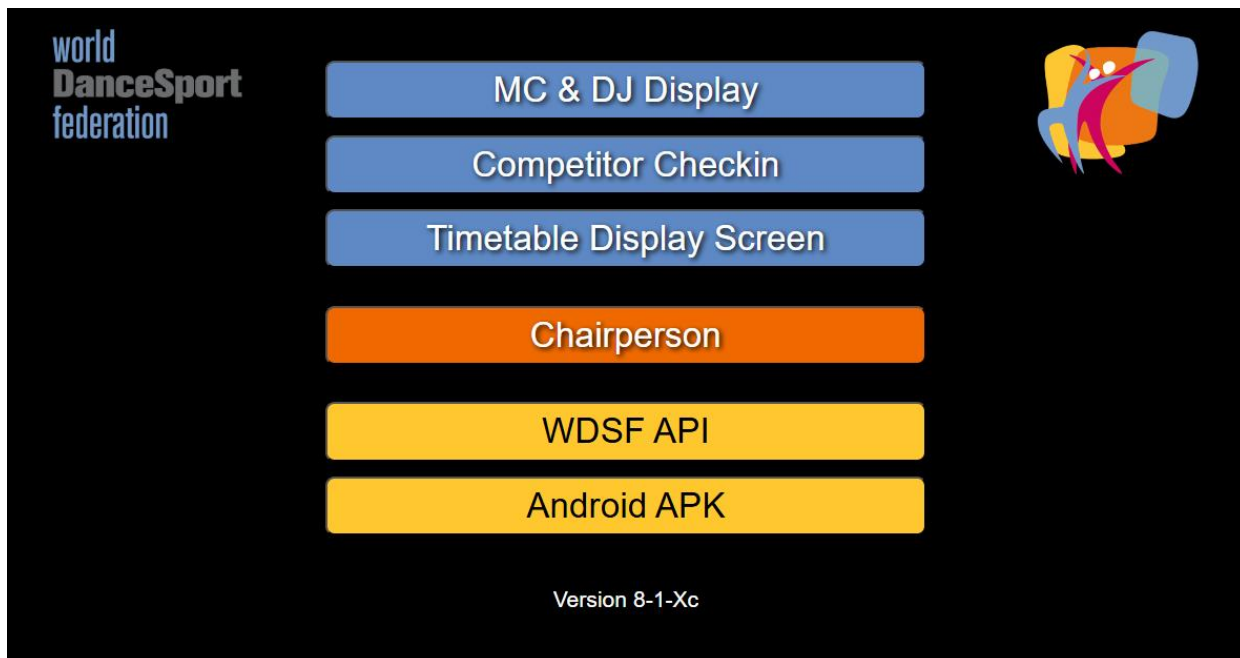
Click the yellow 'Android APK' button at the bottom of the screen this will start a download from the server to the Tablet.

Depending on the version of Android you may receive several security warnings asking if you want to proceed with the install. This is normal.

Once installed we are ready to move to the next chapter: Configuration and Testing.