# XAMPP Server - Background Working Report

## 1. What is XAMPP?

XAMPP is a free and open-source cross-platform web server solution stack package. It includes:  
- X: Cross-platform  
- A: Apache HTTP Server  
- M: MySQL (or MariaDB)  
- P: PHP  
- P: Perl  
  
XAMPP is mainly used for local development, allowing developers to test web applications on their PC.

## 2. How XAMPP Works Internally (Background)

### Step 1: Starting XAMPP Control Panel

When you open the XAMPP Control Panel, you can start or stop the services. The control panel acts as the interface to manage all modules like Apache and MySQL.

### Step 2: Starting Apache Server

Apache is the web server that handles HTTP requests. When you start Apache:  
- It starts listening on port 80 or 8080.  
- It reads files from the htdocs folder.  
- It fetches and runs PHP files when you access localhost in the browser.

### Step 3: Starting MySQL Server

MySQL is the database server. When you start MySQL:  
- It listens on port 3306.  
- It runs mysqld in the background to handle SQL queries and data storage.  
- You can manage it through phpMyAdmin at http://localhost/phpmyadmin.

## 3. Communication Between Components

### Apache + PHP

Apache uses the PHP interpreter to process .php files. For example:  
- Apache receives a request from the browser.  
- It uses PHP to process the logic.  
- PHP sends SQL queries to MySQL if needed.  
- PHP returns HTML output which Apache displays in the browser.

### PHP + MySQL

PHP connects to MySQL using functions like mysqli\_connect() or PDO.  
It sends SQL commands (INSERT, SELECT, etc.), and MySQL processes them and sends the result back to PHP.

## 4. XAMPP Directory Structure (Useful Folders)

|  |  |
| --- | --- |
| Folder | Purpose |
| htdocs/ | Place your project files here |
| mysql/data/ | Stores all database files |
| apache/logs/ | Contains error and access logs |
| php/ | Contains PHP configuration files and extensions |

## 5. Background Services in Task Manager

When XAMPP is running, you will see these background processes:  
- httpd.exe (Apache)  
- mysqld.exe (MySQL)  
These processes stay active as long as the respective servers are ON.

## 6. Important Configuration Files

|  |  |
| --- | --- |
| File | Purpose |
| httpd.conf | Apache server configuration |
| my.ini | MySQL server configuration |
| php.ini | PHP settings (e.g., file upload limit, timezone) |

## 7. Security Note

XAMPP is designed for local development and is not secure for live hosting without additional configuration and security measures.

## Conclusion

XAMPP provides a complete development environment by running Apache and MySQL as background services. It allows your NGO Management System to:  
- Display web pages using PHP via Apache.  
- Store and manage data using MySQL.  
Everything works together in the background to simulate a real web server on your local PC.