People's Democratic Republic of Algeria
Ministry of Higher Education and Scientific Research

Mohamed Lamine Debaghine University – Setif 2
Faculty of Arts and Languages
Department of English

Course Title: ***FOSS***
Level: ***Master 1 – English Language***

Chapter II

Adapting to MX Linux

2025/2026

1. General presentation of MX Linux:

1.1 Origins of MX Linux:

MX Linux began as a discussion among members of the MEPIS community in December 2013 about future development options. Later, developers from the antiX project joined the initiative, contributing the ISO build system and Live USB/DVD technology.

The name “MX” was chosen to reflect this collaboration, combining the first letter of *Mepis* with the last letter of *antiX*. Initially, MX Linux was presented as a version of antiX in order to be listed on DistroWatch, and its first release was published in March 2014.

MX Linux later gained recognition as an independent distribution with the release of the first public beta of MX-16 on November 2, 2016.

1.2 Characteristics of MX Linux:

- **Debian-based distribution:**
  MX Linux is built on **Debian Stable**, which provides a reliable, secure, and well-tested software base with long-term stability.
- **Balanced Performance and Efficiency:**
  The distribution is designed to offer a balance between performance and functionality, making it suitable for both older hardware and modern computers.
- **Community Collaboration:**
  MX Linux is developed through a cooperative effort between the **MX** and **antiX** communities, combining stability with lightweight system components.
- **Exclusive MX Tools:**
  It includes a comprehensive set of graphical utilities known as **MX Tools**, which simplify system management tasks such as software installation, system configuration, backups, and Live USB creation.

- **Multiple desktop environments:**

  MX Linux provides several desktop editions, including **Xfce** (default), **KDE Plasma**, and **Fluxbox**, allowing users to choose according to their performance and usability needs.

- **Advanced hardware support:**

  The system offers standard stable kernels as well as **Advanced Hardware Support (AHS)** options to ensure compatibility with newer hardware.

- **User-friendly installation and configuration:**

  MX Linux feature an intuitive graphical installer with support for modern systems, including **UEFI**, facilitating installation for users with minimal prior experience.

- **Focus on usability and accessibility:**

  The distribution emphasizes ease of use while maintaining powerful system control, making it suitable for both **beginners and advanced users**.

1.3 Advantages of MX linux:

MX Linux offers several key advantages that make it a reliable and user-friendly distribution for a wide range of users:

- **Stability and Reliability**

  Being based on Debian Stable, MX Linux provides a secure and well-tested software foundation, ensuring long-term reliability and consistent system performance.

- **Performance and Efficiency**

  The distribution is optimized to run smoothly on both older and modern hardware, balancing lightweight design with functional features.

- **Usability and Accessibility**

  MX Linux includes a comprehensive set of graphical tools (MX Tools) that simplify system administration tasks such as software installation,

system configuration, backups, and Live USB creation. Additionally, the intuitive graphical installer facilitates setup even for users with minimal prior experience.

- **Flexibility and Compatibility**

  Multiple desktop environments (Xfce, KDE, Fluxbox) allow users to choose the interface that best suits their needs. The system also offers advanced hardware support, automatically enabling common drivers and providing specific kernel options for newer devices.

- **Portable Usage**

  The Live USB feature with persistence enables users to run MX Linux directly from a USB drive while saving settings and files across sessions, supporting mobility and convenient testing.

2. Comparison with other Linux distributions

Linux distributions vary in terms of **stability, usability, update frequency, and target users**. This section introduces MX Linux, Ubuntu, Debian, and Fedora, and compares their key features to help learners understand their differences.

- **MX Linux:**

  MX Linux is a mid-weight Linux distribution based on Debian Stable, designed to combine **stability, efficiency, and ease of use**, especially for older hardware and general user

- **Ubuntu:**

  Ubuntu is a Debian-based distribution focused on **user-friendliness and accessibility**, widely used for desktops, education, and beginner users.

- **Debian:**

  Debian is an independent Linux distribution known for its **stability, reliability, and extensive package repository**, preferred by advanced users and for server deployments.

- **Fedora:**

  Fedora is a Red Hat-sponsored distribution emphasizing **cutting-edge technologies, frequent updates, and developer-oriented features**, suitable for advanced users and technology enthusiasts.

3. Discovering the Xfce desktop environment customized by MX Linux.

Xfce is a lightweight desktop environment for UNIX-like operating systems. It aims to be fast and low on system resources, while still being visually appealing and user friendly.

Xfce embodies the traditional UNIX philosophy of modularity and re-usability. It consists of a number of components that provide the full functionality one can expect of a modern desktop environment. They are packaged separately and you can pick among the available packages to create the optimal personal working environment.

XFCE (XForms Common Environment) is a lightweight desktop environment for Unix-like operating systems. It is known for its simplicity, speed, and low resource usage, making it a popular choice for older hardware or systems with limited resources. Here are some of the main features of XFCE:

Lightweight: XFCE is designed to be minimalistic and consume fewer system resources compared to other desktop environments like GNOME or KDE.

Modular Design: It has a modular architecture, allowing users to customize their desktop experience by choosing which components to install and use.

Session Management: XFCE provides a session manager that allows users to save and restore their desktop settings across sessions.

File Manager: It includes Thunar, a file manager that is easy to use and offers features like file compression, mounting devices, and managing bookmarks.

Panel: The panel can be customized to include various plugins such as a clock, system tray, and launchers for applications.

Window Manager: XFCE uses the Xfwm4 window manager, which supports themes and provides basic window management features.

Configuration Tools: It comes with various configuration tools for network settings, display settings, and more, making it straightforward to set up and adjust system preferences.

Compatibility: XFCE can run on top of different display servers like X11 and Wayland, ensuring compatibility with a wide range of systems.

MX Linux Customizations for Xfce:

- **MX Tools Integration:** Graphical tools simplify system management without complex commands.
- **Custom Panels and Menus:** Clear and user-friendly taskbars and menus.
- **Themes and Icons:** Attractive, organized appearance with consistent colors.
- **Workspace Management:** Easy switching between multiple workspaces.
- **Lightweight & Fast:** Works efficiently even on older or mid-range computers.

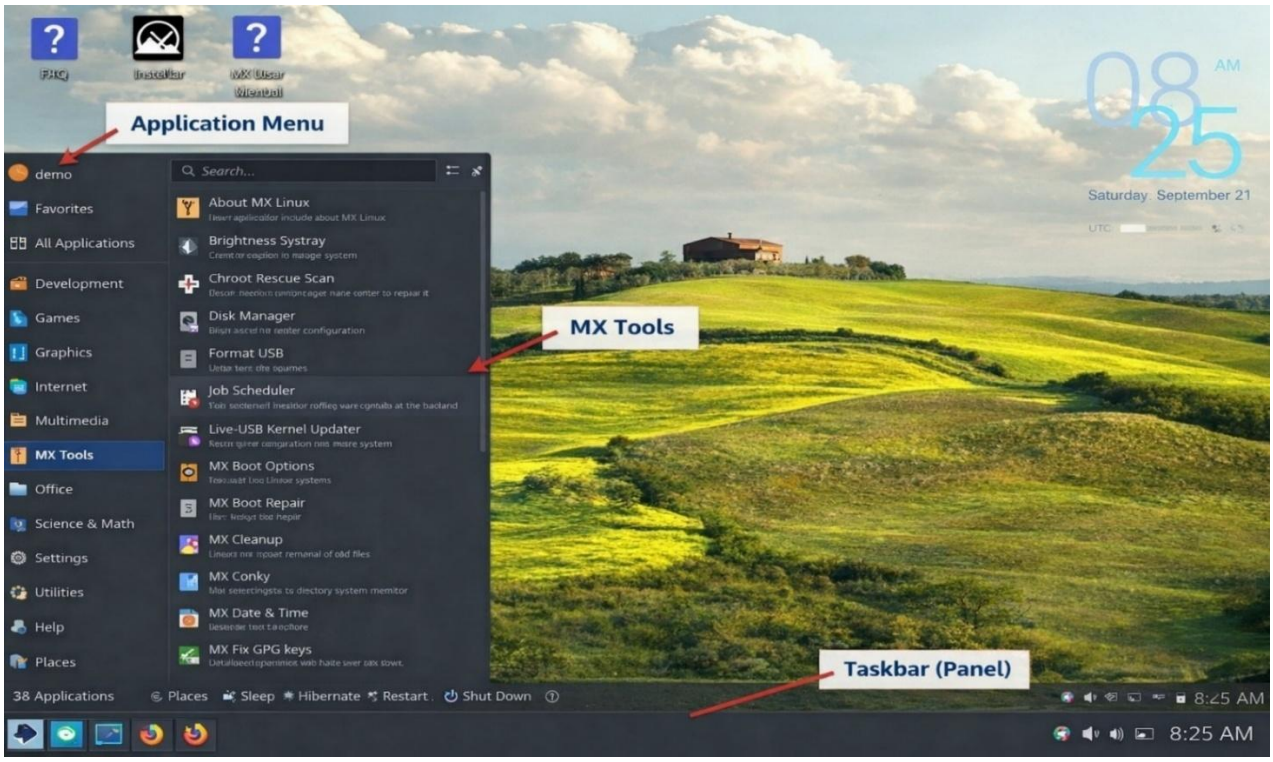

Figure 1: MX Linux Xfce Desktop Environment with Custom Panels, Menus, and MX Tools

4. Package Management Tools in MX Linux

MX Linux provides several package management tools designed to accommodate users with different levels of experience. These tools offer both graphical and command-line interfaces for managing software packages.

4.1 MX Package Installer

MX Package Installer is a **graphical package management tool** developed specifically for MX Linux. It provides a simple and intuitive interface that allows users to browse software categories, search for applications, and install popular programs with minimal effort.

This tool is particularly suitable for **beginner users**, as it eliminates the need to use command-line instructions while still offering access to a wide range of software.

4.2 Synaptic Package Manager

Synaptic is an **advanced graphical package manager** used in Debian-based distributions. It provides detailed control over software packages, including installation, removal, upgrades, and dependency management.

Synaptic is intended for **intermediate and advanced users** who require more control over the system and wish to manage individual packages available in the Debian repositories.

4.3 APT (Advanced Package Tool)

APT is a **command-line package management system** that serves as the foundation of software management in MX Linux and other Debian-based distributions. It is powerful, fast, and efficient, but requires familiarity with terminal commands.

Common APT commands include:

- sudo apt update – updates the package list
- sudo apt install package_name – installs a software package
- sudo apt remove package_name – removes a software package

APT is mainly used by **advanced users and system administrators**.

5. Installation, Removal, and Updating of Software in MX Linux

5.1 Software Installation

Software installation in MX Linux can be performed using **graphical package managers** or the **command line**.

- Using graphical tools such as **MX Package Installer** or **Synaptic**, users can search for applications and install them with a few clicks.
- Using the command line, the **APT** tool allows users to install software by downloading packages from official repositories and automatically resolving dependencies.

5.2 Software Removal

Removing software is equally important to free system resources and maintain system organization.

- Graphical package managers allow users to select installed applications and remove them safely.
- With APT, software can be removed using the terminal.

5.3Software Updating

Updating software ensures that the system benefits from **security patches, bug fixes, and performance improvements**.

- MX Linux provides update notifications and graphical tools for system updates.
- APT can also be used to update the system manually.

Regular updates help maintain system stability and protect against vulnerabilities.

6. MX Tools: Presentation and Use

MX Tools is a collection of **graphical system management utilities** developed specifically for MX Linux. These tools are designed to simplify common administrative tasks and reduce the need for command-line operations, making system configuration more accessible to users of all skill levels.

6.1 MX Snapshot

MX Snapshot is a utility that allows users to **create a live ISO image of their current MX Linux system**. This image includes installed applications, system configurations, and user settings.

Uses of MX Snapshot:

- Creating system backups
- Cloning a configured system
- Distributing a customized MX Linux installation
- System recovery in case of failure

This tool is particularly useful for advanced users and administrators.

6.2 MX Tweak:

MX Tweak is a configuration tool that allows users to **modify system and desktop behavior** through a graphical interface.

Main functions of MX Tweak:

- Adjusting desktop appearance and themes.
- Changing panel behavior.
- Configuring system performance and startup options.

MX Tweak enables users to customize the system without editing configuration files manually.

6.3 MX Boot Options:

MX Boot Options is a tool used to **manage system startup and boot behavior**.

Functions of MX Boot Options:

- Changing boot parameters.
- Managing boot splash screens.
- Adjusting system startup behavior.

This tool is useful for optimizing boot performance and troubleshooting startup issues.

❖ **Importance of MX Tools:**

MX Tools significantly enhance the usability of MX Linux by:

- Simplifying system administration.
- Reducing reliance on the terminal.
- Providing powerful tools through user-friendly interfaces.

7. System customization:

7.1 Themes:

A **theme** defines the visual appearance of the desktop environment. It controls elements such as window borders, colors, icons, and fonts.

In MX Linux (Xfce), users can customize:

- Window themes
- Icon themes
- GTK themes (application appearance)

Themes can be changed through the graphical settings interface:

- **Settings → Appearance**

Using themes helps improve visual comfort and provides a consistent and pleasant user interface.

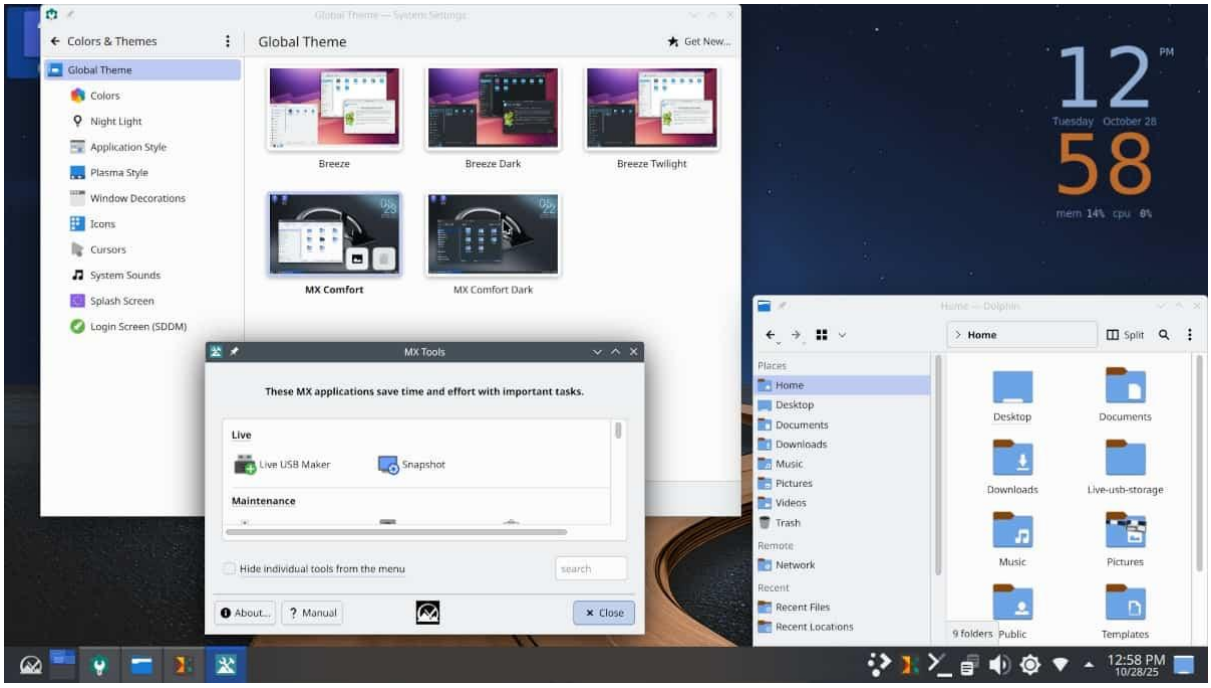

Figure 2: Theme Configuration in MX Linux

7.2 Panels:

The **panel** is the taskbar that provides access to essential system functions. It typically contains the application menu, system tray, clock, and launchers.

Panel customization in MX Linux allows users to:

- Add or remove plugins (clock, launchers, system indicators)
- Change the panel position (top, bottom, or sides)
- Adjust size, transparency, and behavior

Panel settings can be accessed via:

- **Panel Preferences**

Panel customization enhances workflow efficiency by allowing quick access to frequently used applications and tools.

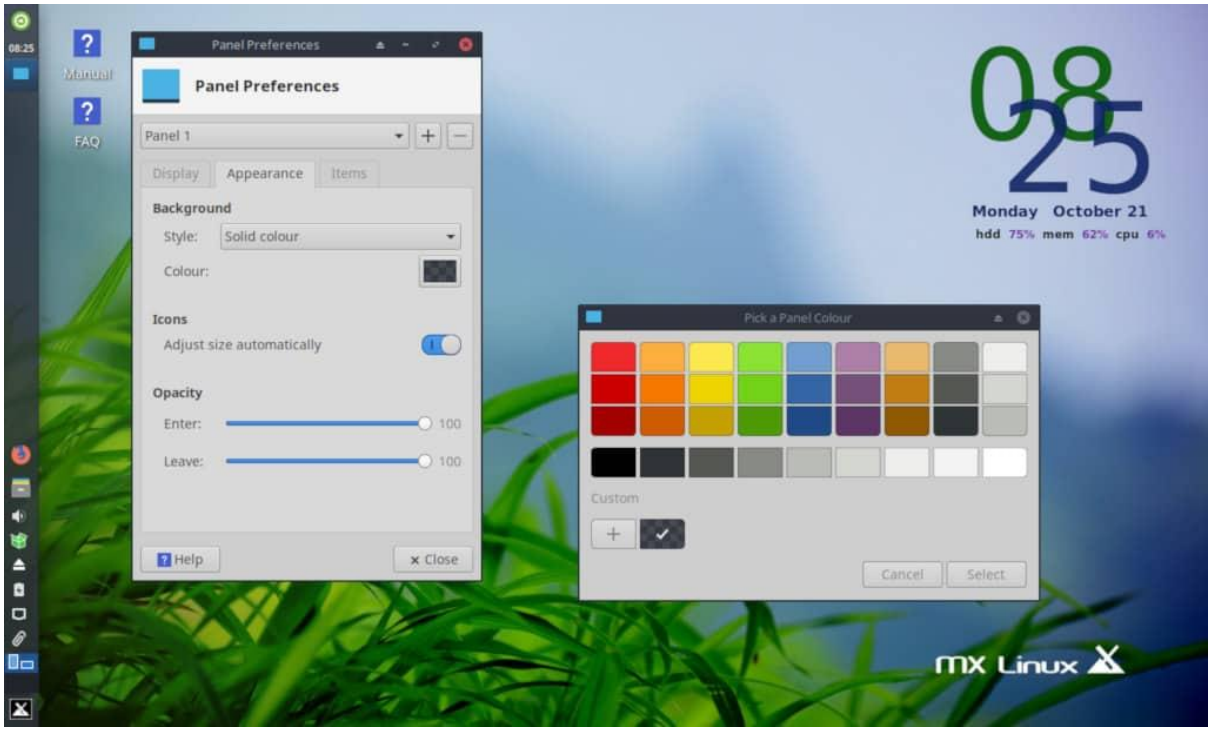

Figure 3: Panel Configuration in MX Linux

7.3 Keyboard Shortcuts:

Keyboard shortcuts are key combinations that perform specific actions quickly, reducing the need for mouse interaction.

In MX Linux, keyboard shortcuts can be used to:

- Open applications (e.g., terminal)
- Close or switch between windows
- Execute system commands

Users can view, modify, or create shortcuts through:

- **Settings → Keyboard → Application Shortcuts**

Keyboard shortcuts improve productivity and provide faster control over the system.

8. Introduction to the Linux Terminal and Basic Commands

The Linux terminal, also known as the command-line interface (CLI), is a powerful tool that allows users to interact directly with the operating system by entering text commands. Unlike graphical user interfaces (GUIs), the terminal provides precise control over system operations and is widely used for system administration, development, and advanced file management.

Understanding basic terminal commands is essential for Linux users, as it enables efficient navigation, file and folder management, and text editing.

8.1 Terminal Navigation:

Navigation commands allow users to move through the file system hierarchy.

- Pwd (Print Working Directory): displays the current directory.
- ls: lists the contents of a directory.
- cd: changes the current directory.

These commands help users understand where they are located within the system and how directories are structured.

8.2 File and Folder Management:

Linux provides simple yet powerful commands for managing files and directories.

- mkdir: creates a new directory.
- rmdir: removes an empty directory.
- touch: creates a new empty file.
- cp: copies files or directories.
- mv: moves or renames files and directories.
- rm: deletes files or directories.

Through these commands, users can organize data, manage system files, and perform daily tasks efficiently.

8.3 Editing Files:

Text editing is a common task in Linux, especially for configuration files.

- nano: a simple, beginner-friendly text editor.
- vi or vim: more advanced text editors used by experienced users.

Using terminal-based editors allows users to create and modify text files directly from the command line without relying on graphical applications.

References

1. **Xfce Project.** (2025). *About Xfce*.
2. **Tencent Cloud Techpedia.** (n.d.). *Linux package management concepts*.
3. **MX Linux Project.** (2025). *About Us*. Official MX Linux Website.