

MANDO Runtime Beta

INSTALL GUIDE

IntervalZero



MANDO Runtime Install Guide

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Target System Requirements

This section describes MANDO Runtime Beta target system requirements.

Hardware Requirements

This section lists hardware requirements for MANDO Runtime Beta.

Category	Requirement
Hardware and connectivity	<ul style="list-style-type: none">• SATA drive• Monitor• USB 2.0 and above keyboard
Processor	<p>MANDO can run on any of the following Intel® multi-core processors:</p> <ul style="list-style-type: none">• Tiger Lake (11th Gen)• Rocket Lake (11th Gen)• Comet Lake (10th Gen)• Coffee Lake Refresh (8th/9th Gen)• Coffee Lake (8th Gen)• Kaby Lake (7th Gen)• Skylake (6th Gen)• Intel Xeon• Intel Xeon Scalable

Category	Requirement
RAM	At least 4 GB
Storage	Local SATA drive with at least one partition formatted as FAT32 file system.

NOTE: The Windows Disk Management Utility will not allow a partition to be formatted as FAT32 if it exceeds 32 GB.

NOTE: NVME drives are not supported.

Software Requirements

This section lists software requirements for MANDO Runtime Beta.

Category	Requirement	Notes / Instructions
BIOS	Secure Boot - Disabled	To disable Secure Boot: <div data-bbox="620 1236 1278 1272" data-label="Text"> <p>NOTE: Instructions may differ depending on BIOS.</p> </div> <ol style="list-style-type: none"> 1. Boot the system to BIOS. 2. From the System Utilities screen, select System Configuration > BIOS/Platform Configuration (RBSU) > Server Security > Secure Boot Settings > Secure Boot Enforcement and press Enter. 3. Select Disabled and press Enter. 4. Save and exit BIOS.

Category	Requirement	Notes / Instructions
	Enable Memory Mapped IO > 4GB - Disabled	<p>To disable Enable Memory Mapped IO > 4GB:</p> <p>NOTE: Instructions may differ depending on BIOS.</p> <ol style="list-style-type: none"> 1. Boot the system to BIOS. 2. Select Configuration/Setup > Advanced Settings > System Management Settings. 3. Select Access MMIO > 4 GB. 4. Select Disable. 5. Save and exit BIOS.
	AHCI (Advanced Host Controller Interface) Mode - Enabled	<p>NOTE: Changing from RAID mode to AHCI mode will prevent current Windows installations from booting on SATA disks on the machine. However, it will not affect NVME disks.</p> <p>To enable AHCI Mode:</p> <p>NOTE: Instructions may differ depending on BIOS.</p> <ol style="list-style-type: none"> 1. Boot the system to BIOS. 2. From the System Utilities screen, select System or Hardware Configuration (this will differ based on BIOS). 3. Look for AHCI or SATA mode. 4. Enable AHCI or set SATA mode to AHCI. 5. Save and exit BIOS.
GRUB boot loader	GRUB 2.04-2.06 or later, installed on a USB or target system hard disk	See Installing GRUB Boot Loader

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Installing GRUB Boot Loader

This section walks you through the steps to install GRUB boot loader.

1. Download the *GRUB for Windows* zip package (for example, `grub-2.04-for-windows.zip`) from <https://ftp.gnu.org/gnu/grub/>. Alternatively, you can download the zip package from the MANDO download site.

NOTE: MANDO Runtime Beta supports GRUB 2.04-2.06 and later.

2. Extract (unzip) the zip file contents to your Windows desktop. You should now have a *GRUB-<version>-for-windows* folder (for example, *grub-2.04-for-windows*) that contains several files, including `grub-install.exe`
3. Open a Command Prompt as administrator.
4. Navigate to the *grub-<version>-for-windows* directory. To do this, enter the following command and then press **Enter**:

```
cd %UserProfile%\Desktop\grub*for-windows
```

5. Open the Windows Disk Management Tool, which will allow you to determine your storage device drive letter and related disk number. To do this, enter the following command and then press **Enter**:

```
diskmgmt.msc
```

6. In the Disk Management window, find and note the volume drive letter and disk number for your storage device.

NOTE: The storage device is typically a USB drive.

7. Using the Command Prompt, install the GRUB components:

NOTE: If you are unsure which option to use, try both.

To Install GRUB2 for BIOS (not for GPT disks)

Type or copy the following command, replacing the **x** with the drive letter and **#** with the disk number noted in **Step 6** above.

```
grub-install.exe --force --no-floppy --target=i386-pc --boot-  
directory=x:\boot //./PHYSICALDRIVE#
```

To Install GRUB2 For UEFI (not for MBR disks)

- a. To install GRUB2 for UEFI 32-bit, type or copy the following command, replacing the **x** with the drive letter noted in **Step 6** above.

```
grub-install.exe --force --removable --no-floppy --target=i386-efi --boot-  
directory=x:\boot --efi-directory=x:\
```

- b. To install GRUB2 for UEFI 64-bit, type or copy the following command, replacing the **x** with the drive letter noted in **Step 6** above.

```
grub-install.exe --force --removable --no-floppy --target=x86_64-efi --  
boot-directory=x:\boot --efi-directory=x:\
```


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Installing MANDO Runtime Beta

Before You Begin

Please ensure the target system meets the [hardware requirements](#) and [software requirements](#) noted earlier in this guide.

The MANDO Runtime Beta installer requires the following components to be in place before installation can move forward:

- GRUB must be installed. See [Installing GRUB Boot Loader](#).
- The system must have a free FAT32 partition available for MANDO Runtime
- The installer must be booted into a Windows operating system to run.
- If you have previously installed the Mando Runtime Alpha, please uninstall it first.

Installing

TO INSTALL MANDO RUNTIME BETA:

1. Download the zip file `MandoBetaRuntimeSetup.zip` from the MANDO download site.
2. Extract the contents of the zip file.
3. Double-click the self-extracting executable `MandoRuntimeSetup.exe`.
4. Click **Next** in the IntervalZero MANDO Runtime installation Welcome window.
5. Read the End User License Agreement, select **I accept the terms in the license agreement**, and then click **Next**.

NOTE: GRUB must be installed (see [Installing GRUB Boot Loader](#)) and the system must contain a FAT32 partition to move forward with this installation.

6. On the Destination Folders screen, do the following:
 - a. Browse for the partition where GRUB is installed
 - b. Browse for the FAT32 partition where MANDO Runtime Beta will be installed.
7. Click **Next**.
8. In the Custom Setup screen, optionally select the components you want to install or remove from the installation. Click **Install** when finished.
9. Click **Finish** in the Installation Complete screen.
10. Reboot your computer, and then choose the boot device where GRUB is installed, using the BIOS One Time Boot Menu. Alternatively, you can configure BIOS to change the boot order. Select MANDO configuration in the GRUB boot menu:

IntervalZero MANDO - Standard Mode (Tick Period = 100 μ s)

NOTE: Once you've successfully installed MANDO Runtime Beta, we recommend you review the *Mando Runtime User Guide* provided in the zip file.

Uninstalling MANDO Runtime Beta

Uninstall Considerations

Keep the following in mind when removing MANDO Runtime Beta from your target system:

- The installer must be booted into a Windows operating system to run.

Uninstalling

Follow the instructions below to remove MANDO Runtime Beta from the system.

STEPS:

1. Navigate to the **Windows Control Panel**.
2. Under *Programs*, click **Uninstall a Program**.
3. Select the **MANDO Runtime Beta** program and click **Uninstall**.
4. Click **Yes** to confirm.
5. Click **Finish** once the installation is complete.

Getting Support

For support of this version of MANDO Runtime Beta, please contact BetaProgram@intervalzero.com.

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