



WHITE PAPER

MANGO OS: MINIMUM HARDWARE REQUIREMENTS

OVERVIEW

Mango Automation platform is a 100% browser-based, cross platform software application that enables users to access and control electronic sensors, PLCs, devices, databases or web services over multiple protocols simultaneously. Mango provides an interface with which diverse data sources can be created and configured while providing downstream management of user access, alerts, data logging, alarms and automation.

Although Radix IoT, LLC sells various appliances that run Mango OS, customers are welcome to install Mango OS on their own hardware. The following details the minimum hardware requirements for a successful installation of Mango. It should be understood however, that performance can be highly impacted by the amount of data-points and the individual setup and configuration. For mission critical applications it is recommended that anyone using their own hardware design contact Radix IoT support for design verification scoping.

REQUIREMENTS

Processor	<p>Minimum Intel® Atom class processor</p> <p>Recommended Intel® Core i3 or better, fully multi threaded and compatible with multiple CPU cores</p>
RAM	<p>Minimum 2GB</p> <p>Recommended</p> <ul style="list-style-type: none"> • Fewer than 20,000 data points 8GB • Greater than 20,000 data points 16GB or more
Hard Drive	<ul style="list-style-type: none"> • SSD Preferred • 500MB minimum for Mango • 1GB per 50 million values in Time Series Database
Operating System	<p>Minimum Windows 7 or greater, Linux or Mac OSX 64 bit</p> <p>Recommended Linux (Ubuntu or Debian)</p>
Java	AdoptOpenJDK 11
Databases Dependencies	<ul style="list-style-type: none"> • None required • MySQL recommended for more than 5000 data points
Client Browser Support	<p>Recommended Current versions of Chrome or Firefox</p> <p>Supported but not recommended</p> <ul style="list-style-type: none"> • Safari • Edge <p>Not supported Internet Explorer</p>
Internet	<ul style="list-style-type: none"> • Not required • Recommended for upgrade, service and support

PROTOCOLS

Common Protocols Supported:

- Modbus IP
- Modbus Serial
- BACnet IP
- BACnet MS/TP
- MQTT
- HTTP
- SNMP
- SQL
- ASCII File
- Serial
- MBus
- DNP3
- POP3
- Data Files (XML, CSV, XLS, BIN)
- Temperature Sensors
- Allen Bradley (extra fee)
- Mango Cloud Sync
- Haystack

... and many more

Refer to RadixIoT.com for more details.

PHYSICAL CONNECTIVITY

The hardware used will define the physical and datalink layer (ISO Layers 1 and 2) of how the Mango OS installed device communicates with field-installed devices. Consideration must be made on topics such as how many serial ports are required, ethernet ports, or other ports available. It is important to realize that serial ports are generally BIOS controlled, and depending on the chipset of the hardware may be configurable only via the BIOS to RS232/RS422/RS485. Mango OS based on Linux can read and write to most prevailing serial and ethernet controllers in the market, however no guarantee can be applied to all hardware sets based on the large variants available in the marketplace.

On some hardware, additional ports and connections are available such as DIO (Digital Input and Output) and other electrical connections.

Typically these other “on-board” features are not supported in Mango as they are considered proprietary in connectivity and require direct interface with the BIOS, that can vary significantly from vendor to vendor. Though it may be possible to connect these to Mango through custom means, no formal support is available from Radix IoT for this type of custom connectivity beyond the Mango community forum.

BACKHAUL CONNECTIVITY

Typically, Ethernet is used for backhaul connectivity to another physical Mango instance, or to a central Mango Cloud instance. Radix IoT hardware appliances do support cellular connectivity. Customers choosing to roll their own hardware and use cellular are highly recommended to use Linux as their OS base and be familiar with bash shell commands and the nmcli and mmcli packages. Given the diversity of cellular chipsets in the marketplace, Radix IoT can't provide configuration support for cellular or a guarantee of compatibility due to the range of available options. Those interested in cellular are encouraged to read the white paper on Mango cellular connectivity, which is based on the assumption of using a Quectel cellular chipset and consult the community forum.

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