

Software - LM Deployment Checklist

Networking HW

External Internet Connection / Static IP

Port Forwarding (list of ports - SSH, Team Viewer, VNC, 80/8000/8100, 8900-8999, ONVIF Ports)

Check Internet Connectivity (bitbucket, google, ...)

WiFi Router

SSID Name / Security ("LM-WiFi")

USR, MiniPC MAC Address to IP Mapping

Static IP Address / DNS / GW

Port Forwarding

Testing

Ethernet Switch

Connect WiFi Router

Connect MiniPC

USR RS485 WiFi Devices

Connect to LM-WiFi

ONVIF Cameras

Tapo App

API Access

Energy Meter

SELEC EM2M-1P-C-100A

Nanowarehouse HW

Insert Two Test Trays - 0 kg, 15 kg

MiniPC

Connect Keyboard, Mouse, Display, Display Mount

Connect PLC Programming Cable to USB

Connect to Ethernet Switch

OS Setup

Dual Boot OS Setup: Windows & Ubuntu

Disable auto patches for Ubuntu and Windows)

Partitions (256GB each)

System Name

Security / Networking - IP Address/MAC

Setup Remote Access (VNC, AnyDesk - in both windows and linux)

SW Install

PLC SW Install

PY Test Scripts

Basic Testing

Connectivity to USRs, MiniPC, Cloud

Modbus tests: modbus_scan, modbus_poll

Run PLC modbus echo script

Test Motors: horizontal, vertical, push/pull, swivel

Calibration

1) Run Auto Calibration Script: Calibration/Recalibration Script to build/update model

2) Run Calibration Validation & Adjustment Script: Test Script to check calibration across all slots using PLC slot test command

Robot Manager

Install Supervisor SW

Install Robot Manager API

- Add/Remove Trays into system

- Submit Tray Retrieve Request

- Submit Tray Release Request

- Cancel Tray Retrieve Request

- Get Tray Status

Admin App

Login

Status / Info Robot

Add/remove tray

Retrieve / Release / Cancel Tray Request

Scan Slot to see Tray info

Scan Tray to see Slot info

List of Pending Requests

List of Completed Requests

DevOps

Setup System Backup Script

Hardware - LM Deployment Checklist

- Confirm robot base alignment with floor markings or structural anchors
- Verify the levelness of the robot mounting surface
- Check the vertical column for perpendicularity (plumb) using a spirit level
- Inspect all robot axes: horizontal (X), vertical (Z), and swivel for smooth travel
- Confirm end stop sensors or mechanical limits are installed and functioning
- Verify Loctite application on critical screws and bolts
- Check all mechanical fasteners for torque compliance
- Inspect the chain and belt routing for correct alignment and tension
- Ensure the push-pull system is level and aligned with the bin interface
- Check push-pull chain tension (within allowable slack limits)
- Inspect gearboxes and moving joints for factory lubrication
- Apply additional lubrication where required per the maintenance manual
- Verify that the linear guide rails are clean and greased
- Inspect and align vertical guide mechanisms or telescopic arms
- Confirm all bearings are properly seated and rotated freely
- Check backlash and play in mechanical joints or arms
- Inspect mounting brackets and supports for rigidity and vibration isolation
- Confirm cable routing is secure and not interfering with motion
- Verify that shock absorbers or dampers (if any) are installed correctly
- Inspect and test mechanical couplings for tightness and alignment

- Check alignment between drive motors and actuators
- Test manual override or mechanical brake mechanisms (if applicable)
- Confirm guards, covers, and access panels are installed and secure
- Perform a full motion cycle test under manual or commissioning mode
- Document and sign off all checks in the commissioning log