

Endpoint User Stories

| User Story | Acceptance Criteria |
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| As a system operator, I want to set the endpoint's unique ID, WLAN interface, cloud server URL, and auth via a config file or environment variables so that deployment is fast and repeatable. | Given a valid config file or environment variables When the scanner starts Then it loads all values and uses them for operation. |
| As a system operator, I want the scanner to start automatically on device power-on so that no manual intervention is required in the field. | Given the device is powered on When the OS boots Then the scanner service starts automatically. |
| As a system operator, I want minimal local dependencies (Python/bash + built-in tools like tcpdump) so that endpoints remain lightweight. | Given a fresh Raspberry Pi OS installation When dependencies are installed Then only a few lightweight libraries are required. |
| As a system operator, I want the endpoint to notify the server immediately when it comes online. | Given the scanner boots When the service initializes Then a "device online" message is sent. |
| As a system operator, I want all transmissions to use HTTPS (or another encrypted protocol). | Given an outbound transmission When data is sent Then it uses HTTPS/TLS. |
| As a system operator, I want each detected scan to include MAC address, RSSI, and timestamp. | Given a Wi-Fi device is detected When the scan data is sent Then MAC, RSSI, timestamp are included. |

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| As a system operator, I want the endpoint to write all transmitted scan records to a local log file. | Given scans are sent When I check the log file Then entries are present. |
| As a system operator, I want the endpoint to resend scan data if the server temporarily goes down | Given the server is offline When a scan occurs Then the scan data is stored locally and sent when it's reconnected to the server |
| As a system operator, I want the endpoint to send a health update every minute | Given the endpoint is running When 2 minutes pass Then a health update is sent |
| As a system operator, I want the endpoint to log any errors that occur to make troubleshooting easier | Given an error occurs When I check the log file Then a detailed error message will be displayed |
| As a system operator, I want the endpoint to authenticate with the server using an API key so that only authorized devices can send data | Given a valid API key is provided within the configuration file When the endpoint connects to the server Then the server will validate the key and accept the connection |

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| As a system operator, I want the endpoint to detect errors and send the error status to the server (dongle removal, shutdown, low disk space) | Given An error occurs When the endpoint detects the error Then an error message is sent to the server |
| As a system operator, I want the endpoint to support software updates sent from the server so that I don't have to physically access the endpoints | Given A valid update is pushed When the endpoint receives the data Then the new settings take effect |