# Stretch Security

Boston Dynamics values your security. The following Stretch security measures are designed to keep your data and access safe.

## Data Security

**Onboard Storage:** All user and mission data encrypted at-rest with AES encryption. The disk encryption key is bound to the robot's Trusted Platform Module (TPM) and will not be unsealed if Secure Boot fails.
**Secure Boot:** Discrete TPM used to detect tampering with on-robot platform software.
**Downloadable Logs:** Service logs encrypted to Boston Dynamics with XChaCha20-Poly1305.
**API and Web Interface:** All endpoints require use of TLS 1.2 or later and use of cipher suites offering 128-bits of security or higher.
**TLS Public Key Infrastructure:** TLS endpoints rooted to an HSM-backed private Certificate Authority.
**WiFi Security:** WPA3 or WPA2, using PSK authentication methods only
**Network Ports:** HTTPS, SSH, FSoE
**Air Gap Ready:** The robot operates fully without internet access but is not the recommended setup..

## Authentication and Authorization

**API and Web Interface:** All endpoints require authenticating to an authorized user.
**Authentication:** Attempts are rate-limited.
**Account Management:** Customer administrators control user accounts. Administrators can add, remove, and manage multiple users.
**Account Roles:** Accounts can be assigned one of two roles, administrator or restricted operator.
**Passwords:** Each robot ships with customer-configurable unique random passwords. All account passwords must meet complexity requirements.
**Web Application Security:** Web interface and API requires HTTPS. Defended against CSRF and XSS. HSTS enabled.

## Software Updates

**Authenticity:** Updates digitally signed and encrypted with a key controlled by Boston Dynamics. Update contents verified prior to installation.
**Update Schedule:** Owner controls timing of update installation.
**Security Fixes:** Dot-fix releases made available when necessary.

## Tablet

**Operating System:** Android 12, with updates available from the manufacturer.
**Mobile Device Management (MDM):** Tablet supports third-party Android MDM.

## Audit and Compliance

**Security Assessments:** Boston Dynamics products are assessed by contracted security consultants.
**Internal IT Controls:** Boston Dynamics aligns to CIS Security Controls.

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