Introducing ZipLine

Instant-On, No-Code Enterprise IoT Button Deployments
Bright Wolf ZipLine

An instant-on visual platform for rapid deployment and configuration of multi-tenant IoT Enterprise Button solutions.

- Instant-On, No Code Required
- Integrated with AWS IoT, Lambda, SNS, and SQS
- Visual Management of Orgs, Sites, Buttons, and Users
- Rapid Enterprise System Integrations (CRM, ERP, etc)
- Built-in Dashboards and Reports
- Customizable User Interface Branding
- Device Lifecycle Management
- Fast Track to Machine Learning
ZipLine Integration

{ "serialNumber": "G030JF0500001", "clickType": "SINGLE", "batteryVoltage": "2000 mV" }

{ "customerId": 654329, "eventLocation": 3045, "eventType": "OUT_OF_PAPER", "buttonLife": "80%" }
Start Faster

Visual interface for rapid creation and configuration of organizations and IoT Buttons

• Create and manage organizations with sites and locations (i.e. customers of the enterprise)
• Create button types and events (i.e. copier, service request)
• Assign IoT Buttons to a type and location at a site within an organization
• Out-of-the-Box pre-configured notifications and integrations using AWS Lambda, SNS, and SQS.
Take Action

Built-in Dashboards and Reports, and Configurable Alerts for Button Event Types

• Get information to the right people, at the right time, using the right method
• Multi-level geographic map views, including floor plans
• Clickable drill-downs for organizations, sites, buttons and event types for real-time issues and historical trends
• Remaining Useful Life calculations enable predictive re-ordering replacement buttons prior to physical button failure
Go Further

Fully contextualized button events are sent via SQS and Lambda to integrated enterprise systems

• ZipLine runs as AMI in enterprise account, connecting with existing business workflows and AWS infrastructure
• Quick and easy path to AWS Machine Learning and other advanced AWS offerings
• Customizable user interface branding and user management with granular access controls across organizations and roles
ZipLine Eliminates Enterprise IoT Button Management Complexity

• Transformative Data Management
  – Incoming IoT data is normalized, cleaned, and shaped for use by downstream systems

• Sophisticated Access Control
  – Granular permissions at the data point level for true multi-tenancy and user role management

• Complete Device Lifecycle
  – Physical inventory associated with logical buttons in system enables seamless assignments and replacements of devices over time
# ZipLine Snapshots

<table>
<thead>
<tr>
<th>Identifier</th>
<th>Button Type</th>
<th>Site</th>
<th>Report Time (EDT)</th>
<th>Click Type</th>
<th>Event</th>
<th>Voltage (mV)</th>
<th>Remaining Useful Life (%)</th>
<th>Model</th>
<th>Admin</th>
</tr>
</thead>
<tbody>
<tr>
<td>G030ND0224550F0E5</td>
<td>Out of Water</td>
<td>Durham Office</td>
<td>4/14/17 8:58:39 AM</td>
<td>Double</td>
<td>Clear Service Request</td>
<td>1697</td>
<td>98.3</td>
<td>JG29L_P</td>
<td>Manage</td>
</tr>
<tr>
<td>G000ND020195MV0E5</td>
<td>Out of Paper</td>
<td>Durham Office</td>
<td>4/12/17 1:39:37 PM</td>
<td>Single</td>
<td>Supply Request</td>
<td>1730</td>
<td>99.3</td>
<td>JG29L_P</td>
<td>Manage</td>
</tr>
<tr>
<td>G000ND0258176M039</td>
<td>Copier</td>
<td>New York Office</td>
<td>4/12/17 11:44:51 AM</td>
<td>Single</td>
<td>Service Request</td>
<td>1731</td>
<td>100.0</td>
<td>JG29L_P</td>
<td>Manage</td>
</tr>
</tbody>
</table>

**Event Types**
- Supply Request
- Service Request
- Clear Service Request

**Button Types**
- Copier
- Scanner
- Printer

**IoT Button Organizations**
- Central Corp
- East Coast, Inc.
- West Coast, Inc.
ZipLine is Powered by Bright Wolf’s Strandz IoT Data Management Platform

Buttons are Just the Beginning...

- Faster time to market for enterprise IoT systems on AWS
  - Strandz seamlessly integrates with AWS cloud infrastructure
  - Strandz data management handles normalization and transformation of incoming IoT data
- Enterprise integrations
  - Strandz connects to existing ERP, CRM, and other key enterprise systems; including integrations with their customers’ enterprise
- Granular access control for complex value chains
  - Manage sophisticated data and user policies across companies, groups, sites, devices, and data types
- Flexible data tool choices
  - Integrate with any combination of BI, ML, analytics, workflow, or other tools
Strandz IoT Data Management

- Strandz allows IoT value to be realized by creating a clean, normalized, queryable source of truth for all connected systems and users.
- Strandz enables IoT systems that are resilient, scalable, and continuously learning.
- Strandz powers digital value chain transformation by allowing complex relationships between data, systems, users, organizations, sites, and groups.

Ingest Services • Protocol Bridges • Ingest Services • Device Management & Controls

Enterprise Configuration
- Data Modeling
- Policy Authoring

IoT Data
- Cleaned
- Normalized
- Auditable
- Addressable
- Linkable
- Consistent Policy
- Trusted Source

Strandz API

Integrations
- IoT Applications
- Dashboards & Reports
- Workflow & Alerts
- Enterprise Backend
- 3rd Party Data Sources
- Business Logic
- BI / Analytics
- Machine Learning

Devices of Many Types, Classes, and Versions

Bright Wolf
Strandz IoT Data Protection

- Authentication
- Authorization
- Auditable

- Time Series
- Cleaned
- Normalized
- Trusted
- Linkable
- Addressable
- Auditable

- Consistently Applied
- Auditable Ruleset
- Dynamic Authoring

- Data Transformation
- Analytics
- ML/AI
Strandz Multi-Tiered Data Access Control

- Incoming data is contextualized and normalized for use by downstream systems, apps, and users.
- Policy-driven access controls are applied at the platform level rather than by each application.
- This enables consistent, granular permissions at the enterprise, org, site, user, and component level across a matrix of type, location, time, and other axes with multi-tenant hosting by the enterprise.

Deployment Example:
- 3 customer organizations
- 4 total sites
- 4 data types (service, operation, utilization, other)
- 4 example users with different authorization rights

Site A Operator
- Site A Only
- Operation Data Only

Support Tech
- All Orgs, All Sites
- Service Data Only

Org 3 Business Mgr
- Site C and D Only
- Service Data
- Utilization Data

Site B Supervisor
- Site B Only
- All Data Types
Bright Wolf Strandz is a modular, scalable, and secure platform designed for change and longevity and optimized for developing industrial grade IoT applications. Production deployments include healthcare, heavy equipment, energy, fluid management, agriculture, cold chain transportation, and more.

Bright Wolf is a trusted partner to Fortune 1000 companies for architecture design, system integration, development, and operational support for large-scale industrial and enterprise IoT systems.

http://brightwolf.com