Webex Automated Incident Creation System Workflow Documentation

Project: WebEx Bot - spaCy NLP - ServiceNow
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Overview

This project implements an automation pipeline that listens to messages in a WebEx room, performs NLP classification using spaCy to determine the incident category and extract entities, creates incidents in ServiceNow via the REST API, and replies in the WebEx room with the ServiceNow ticket number.

Technology

➢ WebEx API (Collaboration)
➢ Python (Automation)
➢ spaCy (Natural Language Processor)
➢ ServiceNow (IT Service Management)
➢ Docker (Containerization)
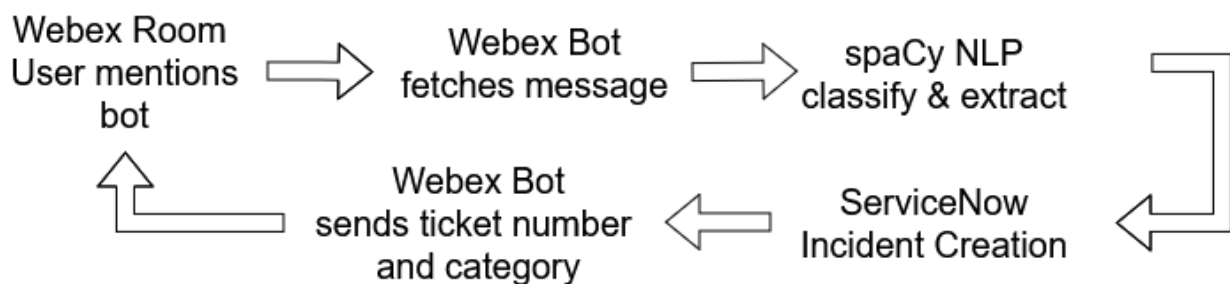➢ GitHub Actions (CI)

Architecture

Figure 1. IT Help Desk system architecture depicted.

1. User mentions (utilizing @ symbol) Webex box in the designated Webex room and leaves a message describing their issue.
2. Bot is triggered and fetches the latest message (contains issue description) via the WebEx API.

3. The text is passed to the spaCy module, which performs classification and extracts relevant entities.
4. Bot builds an incident payload and calls ServiceNow API to create an incident.
5. Bot creates a response containing the ticket number and category of issue and posts it to the WebEx room.
6. The whole application is run inside a Docker container for portability.

Deployment & Setup

1. Install Python 3.10+
2. Create a WebEx account, install WebEx, and create a WebEx bot.
3. Create a ServiceNow account and create an instance.
4. Install dependencies from requirements.txt
5. Set environment variables(WEBEX_TOKEN, ROOM_ID, SERVICENOW_INSTANCE, SERVICENOW_USER, SERVICENOW_PASSWORD)
   a. The WebEx token is the bot access token and found on your Webex bot information page.
   b. Obtain room id by pressing Ctrl+Shift+K (Windows) or Option+Command+K (MAC)
6. Run python bot_code.py or build and run the Docker image.

ServiceNow Integration

The bot uses the ServiceNow Table API to create incidents. Use a scoped integration user and restrict permissions to incident creation only.

Security Considerations

➢ Never store credentials in source control.
➢ Use environment variables or secret stores in container orchestration platforms.
➢ Log minimally to avoid secrets in logs.

Testing and Demo

Included in the documentation is a demo video showing the WebEx bot receiving a message, creating a ServiceNow ticket, and replying with the ticket number. Screenshots are included.

Appendix

Environment variables and example curl commands
See README.md for full examples.