



# Revolutionize Your Workflow With... ChatOps Workshop!

By Tessa Mero

Find the slides here: <http://tiny.cc/spark-chatops-workshop>

Follow me on Twitter and/or tweet at me. @tessamero

# SUMMARY

- Who Am I?
- What is DevOps?
- What is ChatOps?
- Chat Tools
- Bot Frameworks for ChatOps
- Case Studies
- Using Cisco Spark for ChatOps
- Run a Python Script

# Requirements

- Cisco Spark <https://web.ciscospark.com>
- Visual Studio Code <https://code.visualstudio.com/>
- Python

# About Me

# Developer Advocate



DevNet



Cisco Spark

# Instructor / Mentor

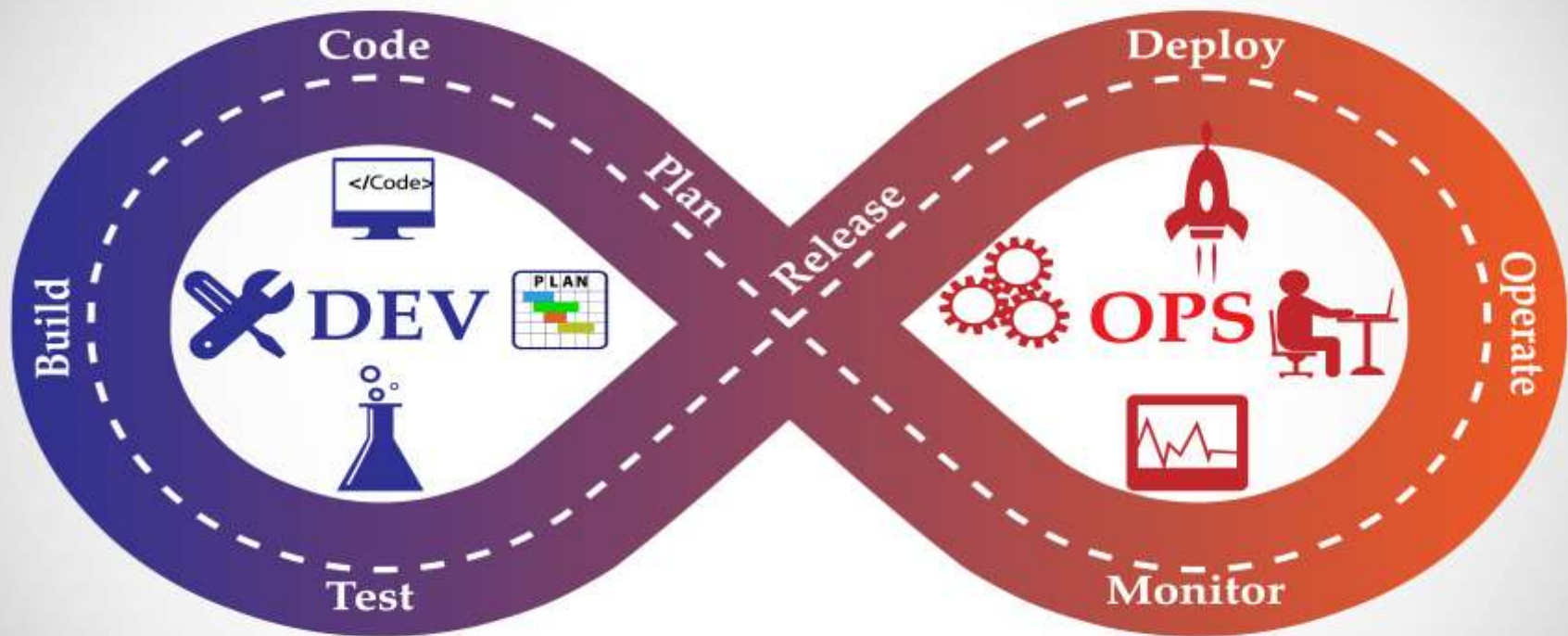


# Community Leader



# What is DevOps?





The process of getting  
**multiple teams** who are  
involved in the software  
process to **talk** to each other

**DEV**ELOPMENT -> Code -> **OP**ERATIONS  
(for deployment)

# DevOps Adoption

**2014: 34%** (Source: Gartner Report)

**2015: 66%** (Source: Wikipedia)

**2016: 74%** (81% at larger companies,  
Source: Wikipedia)

# Reasons for DevOps

- 1 week of work will only take seconds
- Use of Agile and other development processes
- Demand for increased production releases
- Wide availability of virtualized and cloud infrastructure
- Increased usage of data center automation
- More focus on test automation
- DevOps being more known as the “best practice”

# What is ChatOps

Term is created by Github in  
2013



ChatOps is a way of  
**collaborating** which connects  
teams, tools, & processes to  
create an **automated** and  
**transparent** workflow

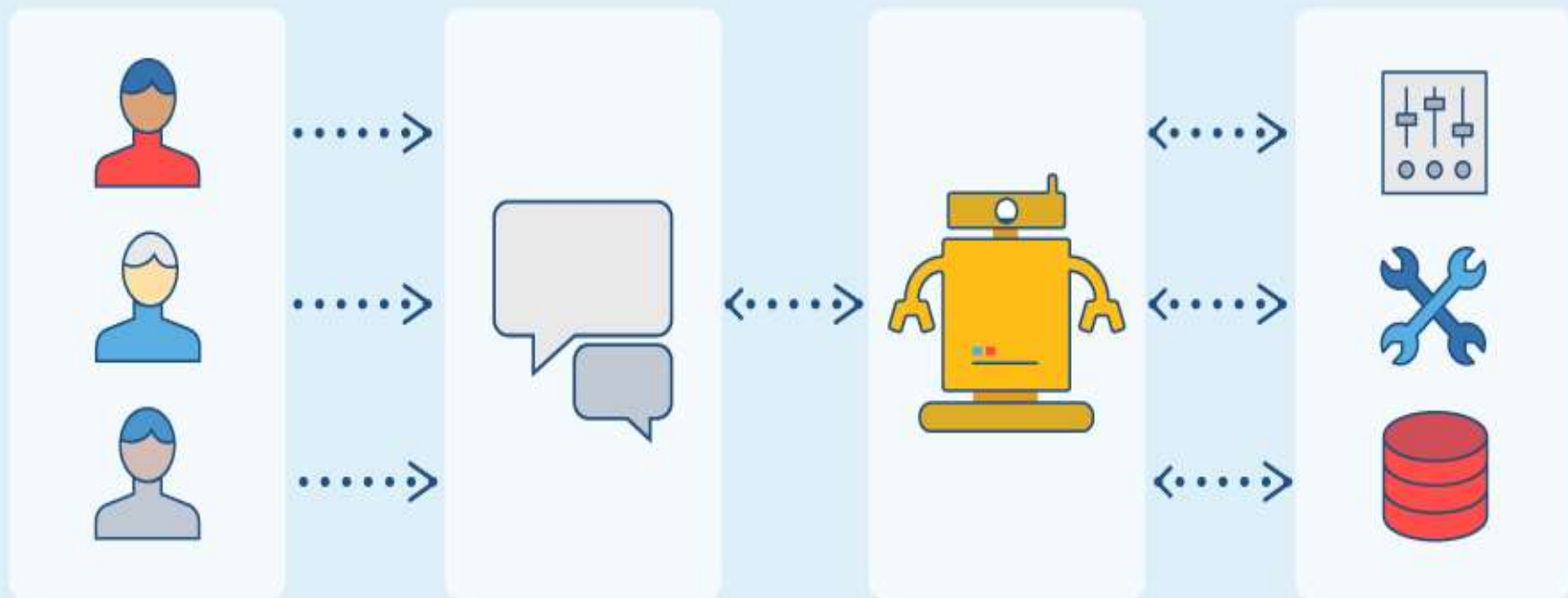


## DEV TEAM

## CHAT APP

## BOT

## INFRASTRUCTURE



NORDICAPIS.COM



Image credit: Bill Doerrfled, Editor in Chief at NordicAPIs

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You have Control  
of the Commands



# Chat Tools



Cisco Spark



# Bot Frameworks for ChatOps

# HuBot

- Written by GitHub
- Open Source
- Written in CoffeeScript on Node.js
- Many core scripts to automate basic tasks
- Huge package of scripts to add for ChatOps
- Easily deploy to heroku

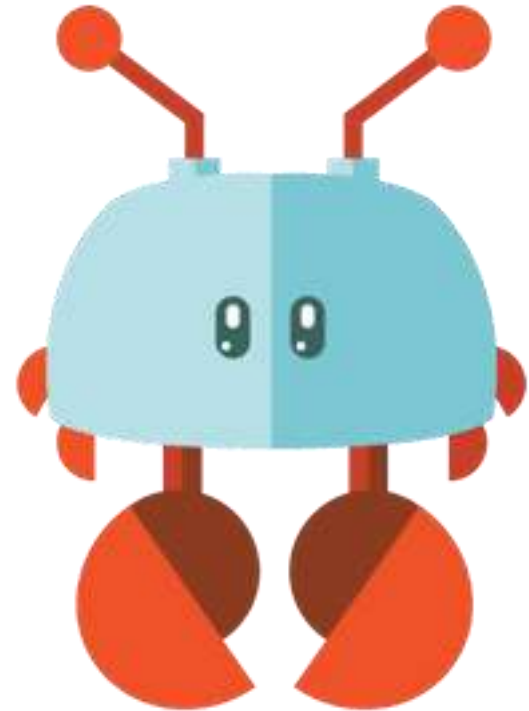


**<https://hubot.github.com/>**

# Lita

- Written in Ruby
- Free and Open Source
- Works with all Chat Services
- Many plugins to install

<https://www.lita.io/>



**LITA**

# Errbot

- Easy to write plugins
- Built in admin/security
- Big Community
- Written in Python



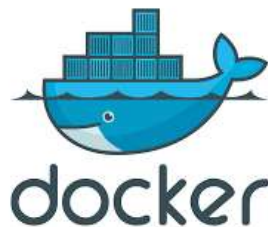
<https://errbot.io/>



# DevOps Tools for ChatOps



**Jenkins**



# Case Studies

# Example Usage of ChatOps

- Incident Resolution
- Automating Routine Tasks (Anything!)
- Multiple Team collaboration
- Onboarding new employees
- Create new Virtual Machine with command
- Notifications
- Combining all tools used into your collaboration tool

# Cisco DevOps Tools for ChatOps



Cisco Umbrella



Cisco Spark



Meraki

# Quotes by Developers (from Twitter)

“We use **Hipchat** to allow Jr  
Devs to Label PRs in **Github**  
for Review”

- @philwinkle, designer at  
SomethingDigitl

“We spin up new VM with  
simple Bot commads”  
- @snair123

“I wrote a **Chat** bot that lets us look up customer information. ChatOps created a tool to allow re-assigning/re-creating **Dev VM**”  
- @halkeye, coder at SauceLabs



“Over the past few days, I’ve written a **serverless** based thing that will let you merge your own **PRs from Slack**”


- @edyesed, DevOps Manager at RealSelf


“We get information from our  
ticketing system using a Cisco  
Spark bot”

- @josebogarin, Chief Innovation  
Officer at Altuscr

# Create a Cisco Spark Bot

# Create New App


 Spark for Developers

DocumentationBlogSupportHausFundMy Apps


GUIDES

- Getting Started
- Quick Reference
- Pagination

## My Apps



You don't have any apps. Why not [create one?](#)



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# Fill In Bot Info

## Display Name

The name users will communicate with after adding your bot to a room

(bot)

## Bot Username

The username users will use to add your bot to a room. Cannot be changed later.

@sparkbot.io ✓

## Icon

A URL to an image that is 512x512 or larger is required



Remove

# Create Room with Bot

Search for people to chat, share documents and video call.

Go Chat!

# Go to Spark API Docs - Rooms



# List Rooms



Test Mode

ON

List rooms.

By default, lists rooms to which the authenticated user belongs.

GET

`https://api.ciscospark.com/v1/rooms`

## Request Headers

Content-type

application/json; charset=utf-8

Authorization




Bearer

<Your Bot token Here>



# Run API Request

## Query Parameters

Name	Type	Your values	Required
teamId	string	<input type="text"/>	
max	integer	<input type="text"/>	
type	string	<input type="text"/>	

Run

# Copy your Room ID

```
{
  "items": [
    {
      "id": "Y2lzY29zcGFyazovL3VzL1JPT00vNMmQtNWUwMGZlNzliOWEy",
      "title": "Chatops Bot Test",
      "type": "direct",
      "isLocked": false,
      "lastActivity": "2016-08-15T13:55:50.433Z",
      "creatorId": "Y2lzY29zcGFyazovL3VzL1BFT1BMRS9lMzgZWE10TAzYTI",
      "created": "2016-08-14T15:59:12.884Z"
    }
  ]
}
```

# Clone the Code Sample

```
> git clone https://github.com/CiscoDevNet/devnet-express-cloud-collab-code-samples  
> cd devnet-express-cloud-collab-code-samples  
> cd itp  
> cd collab-spark-chatops-bot-itp
```

# Run chatops.py File in Terminal

The screenshot shows a code editor with the following tabs: chatops.py, ciscospark.py, README.md, and launch.json. The chatops.py file is open, showing lines 43 to 58. Line 46 is highlighted, and a right-click context menu is open over it. The menu includes the following options:

- Go to Definition (F12)
- Peek Definition (Alt+F12)
- Find All References (Shift+F12)
- Rename Symbol (F2)
- Change All Occurrences (Ctrl+F2)
- Format Document (Alt+Shift+F)
- Format Selection (Ctrl+K Ctrl+F)
- Cut (Ctrl+X)
- Copy (Ctrl+C)
- Paste (Ctrl+V)
- Run Python File in Terminal
- Run Selection in Python Terminal
- Extract Method
- Extract Variable
- Sort Imports

The terminal window at the bottom shows the following output:

```
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Local\devnet-express-cloud-collab-code-samples\itp\collab-spark-chatops-bot-itp>C:/Python35/python.exe c:/Local/devnet-express-cloud-collab-code-samples/itp/collab-spark-chatops-bot-itp/chatops.py
usage: chatops.py [-h] -m MESSAGE -r ROOM_ID [-t TOKEN]
chatops.py: error: the following arguments are required: -m/--message, -r/--room_id
```

# Got an error? Good!

- Need to pass parameters
- -r: the target Cisco Spark room identifier
- -m: the text to be posted to Cisco Spark
- -t: the access token used when invoking the Cisco Spark REST API
- To Fix Error, type command:

```
> python chatops.py -r "ROOM_ID" -t "TOKEN" -m "doing chatops to Cisco Spark from a python script"
```

# Examining spark\_it function

```
def spark_it(token, room_id, message):  
  
    header = {"Authorization": "Bearer %s" % token,  
              "Content-Type": "application/json"}  
  
    data = {"roomId": room_id,  
            "text": message}  
  
    return requests.post("https://api.ciscospark.com/v1/messages/", headers=header, data=json.dumps(data), verify=True)
```

# Examining the Variable

```
spark_access_token = os.environ.get("SPARK_ACCESS_TOKEN")  
token = access_token if access_token else spark_access_token
```

# Launch .vscode/launch.json

```
{
  "version": "0.2.0",
  "configurations": [
    {
      "name": "ChatOps",
      "type": "python",
      "request": "launch",
      "stopOnEntry": false,
      "pythonPath": "${config.python.pythonPath}",
      "program": "${file}",
      "cwd": "${workspaceRoot}",
      "debugOptions": [
        "WaitOnAbnormalExit",
        "WaitOnNormalExit",
        "RedirectOutput"
      ],
      "args": [
        "-r",
        "PASTE THE IDENTIFIER OF THE ROOM YOU ADDED YOUR BOT TO",
        "-m",
        "customize this chatops message"
      ],
      "env": {
        "SPARK_ACCESS_TOKEN" : "PASTE YOUR BOT ACCESS TOKEN HERE"
      }
    }
  ]
}
```



# Debug chatops.py

- Runs the currently selected file in VS Code's editor
- Does not halt execution at first line of code
- Passes in r and m parameters and sets the SPARK\_ACCESS\_TOKEN
- Environment variable value on line 17 and 25
- Select line 30 and create a breakpoint
- **Hit F5 to run the debugger!!!**

Congratulations! You  
have just run and  
debugged a ChatOps  
Script!

# Additional Resources

All in one ChatOps Resources:

<https://github.com/exAspArk/awesome-chatops>

Cisco Spark Python module wrapper for creating robust scripts:

<https://github.com/CiscoDevNet/ciscosparkapi>



# What Can You Do?

# Thank You

## @tessamero

Slides: <http://tiny.cc/spark-chatops-workshop>

# Sources

Nordicapis.com

Infoworld.com

Cio.com

Techproresearch.com

Opensource.com

Atlassian.com