ChatOps: Automate IT operations using Chatbots

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ABSTRACT: In this era of smartphones and tablets, Chat apps are gaining significant acceptance in the consumer facing market as one of the most used medium of communication across all age groups. With Messenger app companies like Whatsapp and Snapchat being values upwards of Billions of dollars in valuations, there is also an increase in use of enterprise chat messengers as a medium for communication between teams in an organization.

Enterprise chat messengers like Slack, HipChat have significantly changed the way traditional enterprise messenger are used. With it being a very open platform allowing to be extended to the fullest extent. There are developers developing cool integrations with can be used to enhance team's productivity and to automate stuff using Chat bots. Chat bots can be used to automate mundane activities of the IT operations team hence achieving productivity boost and transparency across teams involved. Use of chat bots to automate IT operations is popularly known as ChatOps.This paper's intent is to evaluate ChatOps using open source software's and to review the benefits of using it from an IT team's perspective.

KEYWORDS: ChatOps, chat bots, it automation, automation, messenger, chat

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I.　EVOLUTION OF THE INSTANT MESSENGER.

Since the early 60's instant messages were present in one form or the other. But it was the 90's when it gained significant acclaim. With messengers like ICQ, AOL's AIM, Yahoo messenger coming into existence. People now started chatting with their friends online, common interest groups started forming online. This was when chat rooms played a significant role in person's life, especially the teenagers.

Then in the early 2000 came Jabber which acted as a gateway and could be integrated to multiple messenger platforms like AOL and Yahoo messenger. With this came the age of integrated chat messengers. Messengers which could get integrated with your contact lists, with your emails. Chat services like the Apple iChat.

In the year 2003 came Skype and it all together chat the course of instant messenger. Messengers were no longer bounded to just textual chat's but it allowed the users to have voice, video and screen sharing. With such great features and totally free of cost Skype made significant impact to the user patterns and how people used messengers.

Then came the advent of the social media platforms and around which Google introduced their Social chat platform called Google Talk in 2005. Then in 2008 Facebook introduced Facebook chat and in 2011 it integrated with Skype.

Then in the year 2009 Whatsapp was launched and it washed the SMS user traffic all away from the network carriers. With free instant text messaging, audio, video and photo sharing all for free it took no time for WhatsApp to reach masses worldwide.

Meanwhile in the corporate world Microsoft messenger and jabber based chat application's ruled the world. In 2011 Microsoft bought Skype and merged their Lync messenger application with Skype for business product.

Then in 2013 came the unicorn in work place collaboration Slack and it opened the work place collaboration to an all new level all together.

II.　MODERN CHAT PLATFORM

Slack and applications similar to Slack has one thing in common. All the features of the platform is exposed to the external work to be integrated via REST API's. Making their platform easily accessible to be integrated by an array of other platforms. Suddenly the chat platform was not just a platform to chat but to do much more. A plethora of Applications were developed to be integrated with slack.

This made the chat platform a important and powerful tool for productivity enhancement and automation. With this came Chat bots.

III.   WHAT ARE CHAT BOTS

A chat bot is aArtificially intelligent computer program which will have interactive conversations with hum beings as if its a human.

Applications like the Facebook messenger, slack all have their chat bot to assist people. Third party developers can also develop their own chat bots and integrate with these platforms to expose additional features to these bots. Features ranging from checking weather, to ordering pizza all can be achieved using these chat bots.

Chat bots have now become an easy medium of interaction and to get things done while having a human friendly interaction with the system. Chat bots are now creating a parallel platform to the existing web portal and mobile application landscape.

Enterprises too are adding on to the fame of chat bots by adding their own bots in their mobile applications. for example, you can now have a chat with your banks bot to check balances, do fund transfer's quickly and in a very human friendly way.

IV.   WHAT IS CHAT-OPS

Use of chat bots to automate and support the IT operations of a project or a product is famously termed as Chat Ops.

With the enterprise teams extensively using collaboration platforms like Slack there is scope for automating and integrating all their day to day tasks using the platforms extendable API's into their chat windows.

Chat Ops allows for greater transparency across team and helps break silos in different teams part of a project. Helping them by providing a common platform for them to interact with each other, interact with the tools and systems and also to get their work done all inside their chat windows.

There are many open source & proprietary chat bot platforms which support development of chat ops. some prominent Chat Ops Bot platform are GitHub's Hubot, Lita, etc. Along with these open source ones there are few enterprise Chat Ops offerings too like the HP Chat Ops platform and CA Technologies Jarvis.

V.   HOW TO BUILD A CHAT OPS PLATFORM

For the scope of this paper we will be using Github'sHubot and integrate it with Slack and try to automate few developer jobs like building and deploying a web application from a chat window.

Setting up Slack for integrating with Hubot.

First step in setting up a Chat ops platform is to configure Slack to have a Bot user. The ways to do that is as follows.

1. Login to you slack account and install the Hubot app

2. Configure the bot user

Define a name to be used as bot username which will be the keyword to trigger your Hubot instance.

e.g: in our case the configured bots name is "Jenkinsbot""


3. Make note of the Api token
Once the configuration of the bot user is done, Slack will share an API token which needs to taken note of and configured with Hubot for it to integrate with Slack.
4. Configuring your Hubot
For installing and starting Hubot, You will need Node JS to be installed as a prerequisite.
Once Node JS is installed on your machine you can follow the Hubot installation guidelines which is:

*   npm install -g yo generator-hubot.
*   Install yo generator as a global dependency and also install hubot generator.
*   Make a directory for your hubot installation.
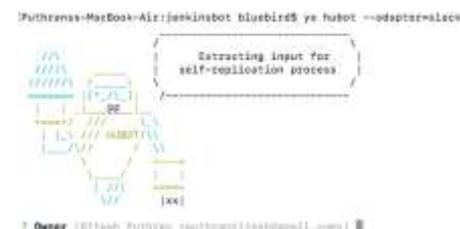
*   Run yohubot to download and configure your Hubot installation and follow the guidelines

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- when asked for in the setup for adapter use slack or your specific adapter to be used for messaging.
- once your Hubot instance is configured, next step is to configure the jenkins instance on your machine.
- Follow the Jenkins installation guidelines for your specific OS and install jenkins on your machine
- Once Jenkins is installed make note of its URL and the username password to be used with the Hubot Jenkins script for it to get information from the Jenkins REST API.
- Download the Jenkins coffee script from the HubotGithub scripts repository and put it in the scripts folder of your Hubot installation.
- run your Hubot instance by configuring the following environment variable:
  - HUBOT_JENKINS_URL=[YOUR_JENKINS_URL]
  - HUBOT_JENKINS_AUTH=[YOUR_JENKINS_USERNAME:YOUR_JENKINS_PASSWORD]
  - HUBOT_SLACK_TOKEN=xoxb-[YOUR_SLACK_API_TOKEN]
- Start Hubot instance by running ./bin/hubot --adapter slack.

5. Once your Hubot instance is up and running you can test it by typing a command in Slack's general channel.
Users are by default added to the Slack's general channel.

6. Defining your own channel and add Chatbot.
Once you have tested. go ahead and create a private channel and add the bot user to it and also all the other users you want to use this bot.
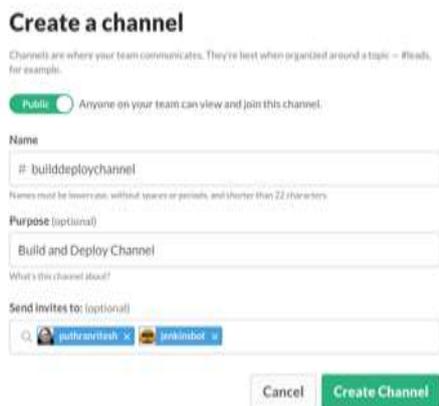
Now your bot is fully ready to take your commands and deploy build in Jenkins.

SUMMARY

To summarize the experience of setting up our own Chat Ops environment, It was pretty straight forward to setup and get a simple Chat ops platform running. With the technologies to be used is available in most commonly used languages you can make your choices as per your projects preferences of the technology stack. Overall using the same communication app to communicate with the systems and get the job done seems like a great choice. Hence the verdict is, yes ChatOps is a good way to automate IT operations and bringing transparency across different teams involved.

REFERENCES

[1]   https://github.com/github/hubot-scripts/blob/master/src/scripts/jenkins.coffee
[2]   https://hubot.github.com/docs/
[3]   https://jenkins.io/doc/
[4]   http://slack.com

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