Integrating Google Assistant for Continuous Integration

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About Me

Developer | Author | Technophile
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- Android mobile app developer for the past 5+ years
- Worked primarily on developing B2C and B2B based applications
- Worked on cutting edge technologies including AI, AR & VR
- Involved in DevOps implementation since the past 2 years
- Working on integrating innovative technologies with DevOps
- Passionate about technology, meeting new people and sharing ideas! 😊

“Stay Hungry ! Stay Foolish !”
The world today ....

- Virtual meetings
- Work from home
- Social distancing
- Home Quarantine
- Evolving workspaces
- The “new normal”
Agile development is winning
- Better quality
- Improved efficiency
- Predictability, flexibility and transparency
- Result oriented

Culture of continuous integration involves
- Fixing failed integrations on priority
- Making integration results visible
- Integrating often
- Applying best software engineering practices

Voice-first technologies are the next big thing
- Conversation is the best way to solve a problem
- Voice first is more natural
- Improved accessibility
- Future is bright
We all love data!

According to a report published by eMarketer, in 2020, there will be over 100M smartphone voice assistant users.

Gartner predicts 25% of Digital Workers will use virtual employee assistants daily by 2021. It also predicts that, by 2023, 25% of all employee interactions with applications will be via voice, up from under 3% in 2019.

Source: https://bit.ly/33hRuVn
The Age-Old Problem!

Software Projects Involve -
- More complexity
- Working with multiple heterogeneous systems
- Large team size
- High learning curve

What Is Expected From Developers?
- Write clean code
- Write test cases
- Identify or fix defects early
- Learn to be pro-active

THE RACE AGAINST TIME
- Shorter development life cycle
- Shorter deadlines
- Time to market
Information on the Go!

We all want that information can be accessed from anywhere —

• We create web portals or interactive dashboards to display all sorts of information.
• A lot of time and effort is involved
• Over the years it proves to be useless
• We need a better form of communication

We all try to seek answers to —

• When was the last build delivered?
• How many test cases passed or failed?
• Was the last build successfully?
• What broke and what didn’t?
Challenges

- Dependency & communication among members within cross functional teams
- Time and cost metrics involved in developing reporting-based web portals
- Feedback and specific information retrieval without manual intervention
- Organizational culture and development methodology changes
- Personalization and user experience
Proposed solution

• Creating a voice-based communication interface that uses natural human language.
• Leveraging existing CI/CD framework that exposes RESTful APIs to monitor build status, generate reports and much more.
• Leveraging latest AI technology to communicate and create meaningful conversations with the end user.
• Provide instant feedback to queries without the need of a centralized web portal.
Architecture

Machine learning

DialogFlow

Agent Jenkins

(End user)

Link to download solution video and slides: https://rb.gy/gjkuab
Solution benefits

• Easily extendible to other CI/CD platforms and frameworks.
• Helps to obtain information easily using natural language.
• Allows user to remotely monitor status of applications without accessing a centralized portal.
• Quicker transition among team members in case of changes in software development methodologies.
• Voice first approach with user personalization.
Conclusion & future scope

- Voice interfaces are increasing at an exponential rate.
- Smartphones & tablets are already personalized.
- Voice based applications enable consumers to use natural language to reduce manual effort, making it a lot faster to accomplish tasks.
- Better and more streamlined conversations.
- Support for wearable devices?
- Better security & user verification.
References & links

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- https://cloud.google.com/dialogflow/docs/fulfillment-overview

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Thank you!

Any questions?