

Wunder To-Do

Post-mortem of an Alexa skill for
integration with Microsoft To-Do

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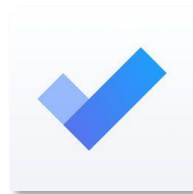


Gliederung

- ▶ Motivation
- ▶ Technology and Concept
- ▶ Implementation
- ▶ Challenges
- ▶ Status and Outlook

Motivation (1)

- ▶ Cloud-based task management
 - ▶ Available everywhere
 - ▶ Always up to date
 - ▶ Easy sharing with family members
- ▶ Until 2015: Use of Wunderlist, 6Wunderkinder, startup from Berlin.
- ▶ 2015: Microsoft buys 6Wunderkinder including Wunderlist
 - ▶ Further development of Wunderlist is stopped
 - ▶ Features slowly migrate to Microsoft To-Do until today



Motivation (2)

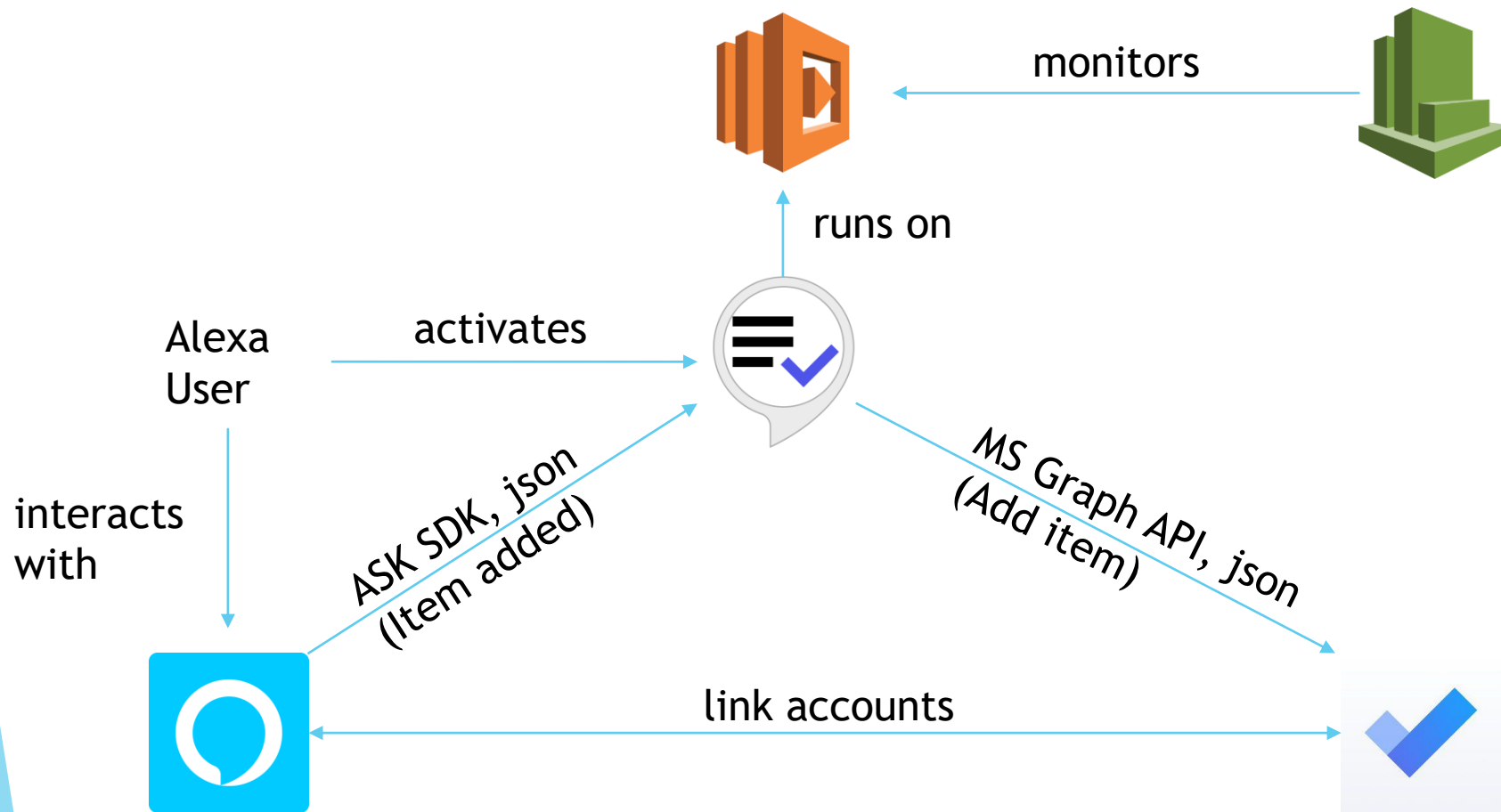
- ▶ Alexa finds her way into our home as a gift
 - ▶ Technical interest: How do these skills work?
 - ▶ Use Case: Shopping list without pen and paper?
- ▶ Filling the list by voice command?
 - ▶ Moderately usable skill for Wunderlist
 - ▶ No Skill for Microsoft To-Do
- ➔ New Alexa Skill to be developed
 - ➔ Learning new technology
 - ➔ Solution for above mentioned use case
 - ➔ Avoid cumbersome commands



Technology and Concept (1)

- ▶ „Normal“ Alexa Skills
 - ▶ „Intents“
 - ▶ „E.g.: "addElementOnShoppingList“
 - ▶ Several "Utterances" per Intent
 - ▶ E.g.: "Put {placeholder} on the shopping list?"
 - ▶ Per Skill one "Invocation" name
 - ▶ E.g. "Wonder To-Do"
 - ▶ Problem
 - ▶ Invocation would be cumbersome: "Alexa, start Wunder To-Do and write apples on the shopping list"
 - ▶ Intentlogic and recognition would have to be developed by yourself
- ▶ Lösung: List-Skill
 - ▶ No own intents for list management
 - ▶ Use the internal Alexa list management and processing of list events

Technology and Concept (1)



Technology and Concept (2)

- ▶ Prerequisites
 - ▶ Amazon Developer Account (access to Alexa SDK)
 - ▶ Amazon Web Services Account (Lambda und Cloudwatch)
 - ▶ Microsoft Account (access to Microsoft To-Do, Account Linking)
 - ▶ Microsoft App Registration (access to MS Graph API)
- ▶ Creation and management
 - ▶ Alexa Developer Console ([link](#))
 - ▶ Web based, no List-Skills
 - ▶ Alexa Skills Kit CLI ([link](#))
 - ▶ local, terminal based, List-Skills supported
 - ▶ Target SDK ([link](#))
 - ▶ ASK SDK for Node.js

Implementation

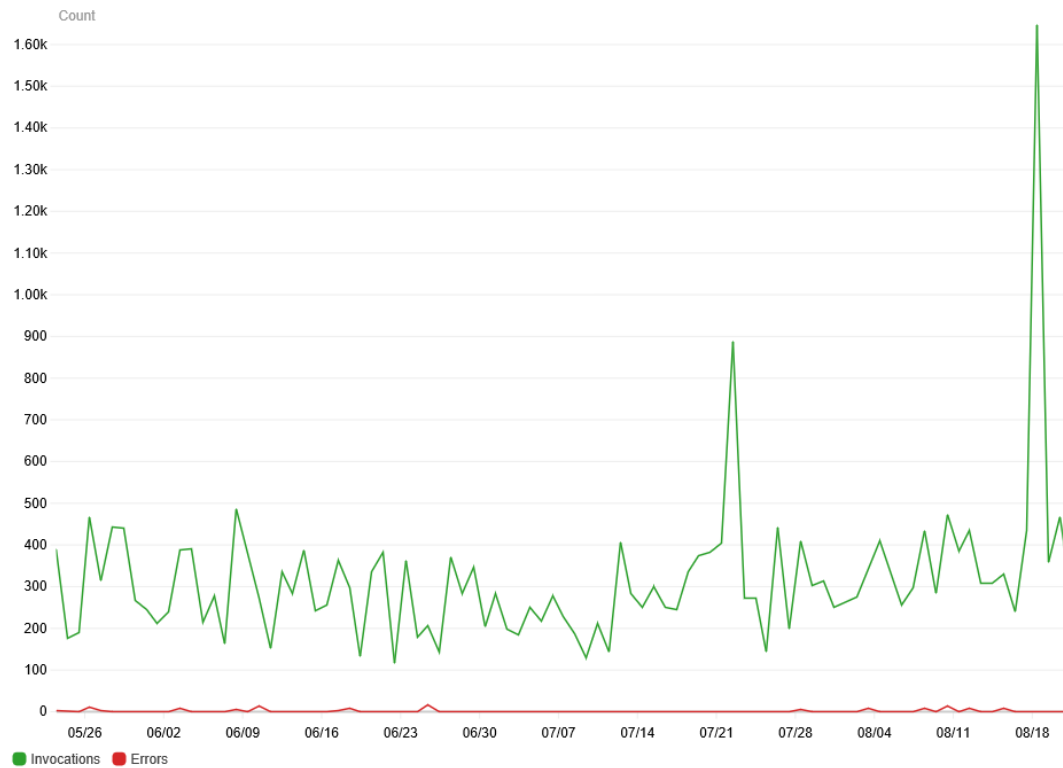
- ▶ Microsoft Visual Studio Code
- ▶ Visual Studio Team Services
 - ▶ VCS: Git
 - ▶ Task management
 - ▶ Collaboration platform
 - ▶ (planned) Continuous integration / Test automation
- ▶ Amazon Web Services
 - ▶ Lambda with node.js runtime
 - ▶ Monitoring with CloudWatch
- ▶ Alexa Developer Console
 - ▶ Manual testing

Challenges

- ▶ Certification process
 - ▶ Lengthy
 - ▶ Different "activation word" limits per region
 - ▶ Test accounts for all regions
 - ▶ Answers seem arbitrary - sometimes resubmission helps
- ▶ Account Linking
 - ▶ 3rd party provider needs own landing page (link) ([link](#))
 - ▶ Landing page has to be hosted by the provider
 - ▶ Privacy policy had to be created and linked
 - ▶ Alexa account linking does not allow redirection (no business accounts possible)

Status 2018-06 and outlook (1)

Invocations per day



- ▶ Online for 6 months
- ▶ Ca. 500 invocations per day

Status 2018-06 and outlook (2)

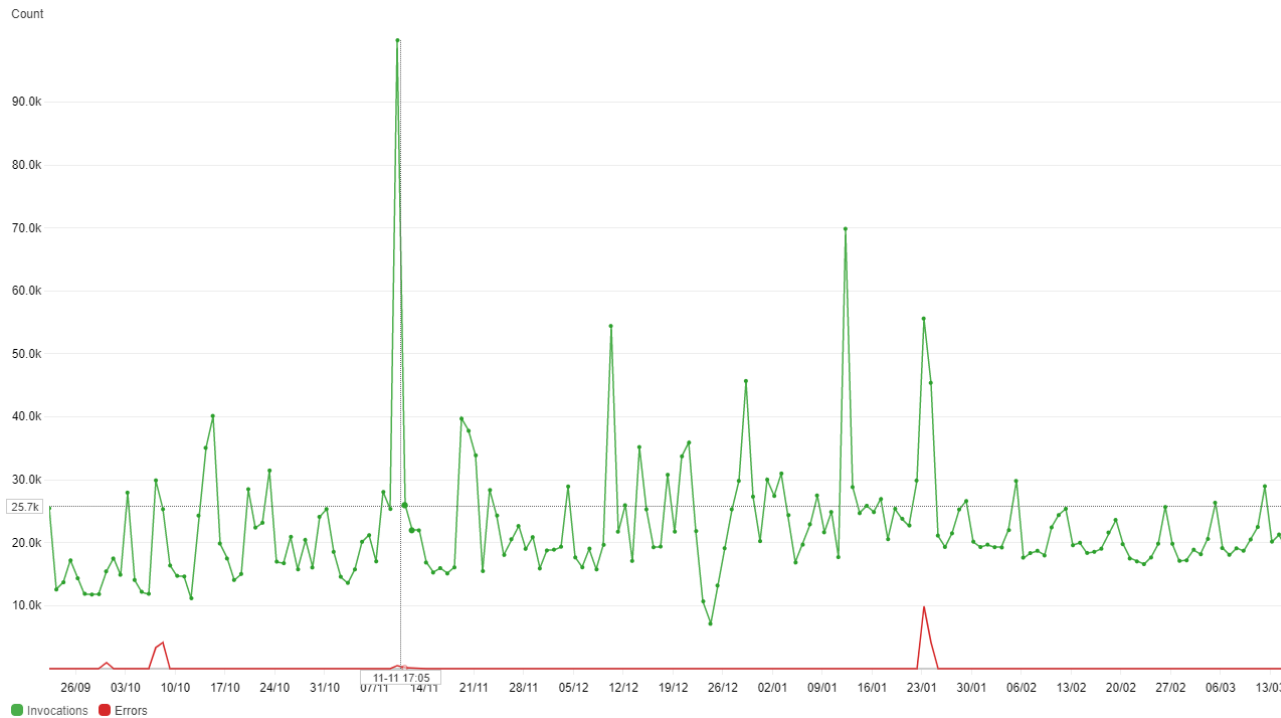


- ▶ Available in all regions (except Japan)
- ▶ Positive feedback
 - ▶ Better rated than the Wunderlist skill mentioned in the beginning
- ▶ Negative reviews due to known limitations

Status 2018-06 and outlook (3)

- ▶ 2-Way Sync
 - ▶ Full synchronization between Alexa and MS To-Do lists
 - ▶ Currently blocked by Microsoft
 - ▶ WebHooks for tasks currently not supported in Graph API
 - ▶ Delta Queries for tasks currently not supported in Graph API
- ▶ Support for business and school accounts
 - ▶ As soon as the Alexa linking process allows it
 - ▶ ...or a workaround is found

Status 2021-03 and outlook (1)



- ▶ Ca. 20k invocations per day
 - ▶ X40 since 2018
- ▶ 15-20k unique users

Status 2021-03 and outlook (2)



Wunder To-Do
von B!Dev
Bewertet: Aufsicht empfohlen
★★★★☆ 104
Kostenlos aktivieren
„Alexa, starte Wunder To Do.“
„Alexa, schreibe Sport und Einkaufen auf die Aufgabenliste.“
Angezeigt in: Deutsch (DE) ▼ Alle unterstützten Sprachen anzeigen

Miracolo To-Do
di B!Dev
Valutato: Si consiglia la supervisione
★★★★☆ 7
Attivazione gratuita

To-Do Magique
par B!Dev
Évalué: Surveillance suggérée
★★★★☆ 22
Activation gratuite

Wonder Do It
by B!Dev
Rated: Guidance Suggested
★★★★☆ 65
Free to Enable

Wonder Do It
by B!Dev
Rated: Guidance Suggested
★★★★☆ 89
Free to Enable

To-Do Maravillosa
de B!Dev
Calificada: Directrices sugeridas
★★★★☆ 18
Activación gratis

Wonder Do It
by B!Dev
Rated: Guidance Suggested
★★★★☆ 10
Free to Enable

- ▶ In use worldwide
- ▶ Mostly positive feedback
 - ▶ Main criticism: Missing 2-way synchronization
 - ▶ Recent: Missing support for umlauts due to API changes
- ▶ Challenge: Adaptation to new MS Graph API
 - ▶ Existing API will be switched off in 2022 at the latest

Thank You!

- ▶ Start of the skill: Approx. January 2018
- ▶ Deactivation of the skill: April 2021
- ▶ Skill (was) to be found under
<https://www.amazon.de/B-Dev-Wunder-To-Do/dp/B07BHLPLGD>