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Toil

Site Reliability Engineering

Objectives

In this module, we will learn what toil is and discuss the different types of toil, including good and bad toil.

Learning Objectives

By the end of this lesson, you will be able to:

- Define what toil is
- Define what overhead is
- Work through some scenarios
- Identify what is good toil
- Identify what is bad toil
- Why less toil is better

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What do you think Toil is?

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Define Toil

- From Google's SRE book

> "Toil is the kind of work that tends to be manual, repetitive, automatable, tactical, devoid of enduring value, and that scales linearly as a service grows."

- Examples
  - >>> Handling quota requests
  - >>> Applying database schema changes
  - >>> Reviewing non-critical monitoring alerts
  - >>> Copying and pasting commands from a playbook
  - >>> Washing the dishes

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Toil Overview

What is toil?

A by-product of on-going development

Work that is repetitive and gives no value or enjoyment

Someone walking up to your desk - “Can you just do this quick task for me?”

How to track toil

Tickets for incidents, problems development work

Time sheets

Surveys

Systems - Jira/ServiceNow

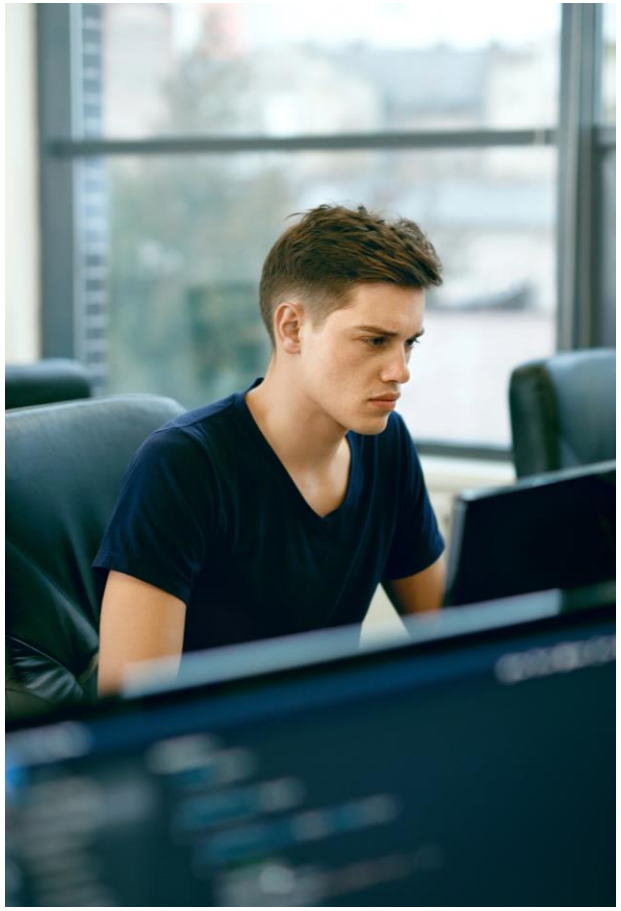
What to track

Type of work (quote change, release, security update, etc)

Where/Who it came from

Degree of difficulty/time spent

Who did it



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Tracking Toil – Surveys

- Survey your team
- Tickets may be hard to analyse
- Example questions
  - >>> Averaging over the past four weeks, approximately what fraction of your time did you spend on toil?
    - ~ Scale 0-100%
  - >>> How happy are you with the quantity of time you spend on toil?
    - ~ Not happy / OK / No problem at all
  - >>> What are your top three sources of toil?
    - ~ On-call Response / Interrupts / Pushes / Capacity / Other / etc.
  - >>> Do you have a long-term engineering project in your quarterly objectives?
    - ~ Yes / No
  - >>> If so, averaging over the past four weeks, approximately what fraction of your time did you spend on your engineering project? (estimate)
    - ~ Scale 0-100%
  - >>> In your team, is there toil you can automate away but you don't do so, because that very toil takes time away from long-term engineering work? If so, please describe below.
    - ~ Open response

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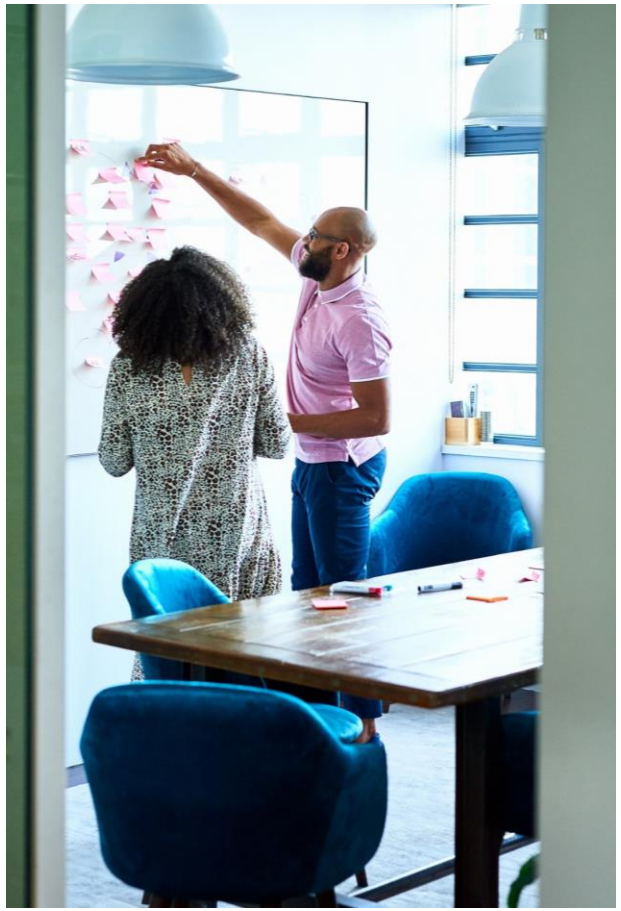
Overhead

- Meetings
- 1-1s
- HR Paperwork
- Training/Learning

Work not directly associated with running the production service or project



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Activity – Toil Scenarios

- In this activity, you will identify:
  - >>> What is toil or overhead?
  - >>> What category or categories it comes under
    - ~ Manual
    - ~ Repetitive
    - ~ Automatable
    - ~ Tactical
    - ~ No enduring value
    - ~ Scales linear with service
  - >>> The reason for your choices

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Activity: The Scenarios

1. Each morning prior to trading, a team member must run a script to check that services are ready and operational.
2. When our back up fails to complete in the evening, I have to check why it has failed and then execute a script to back up the remaining files.
3. Every two weeks, I enter all the tasks for the sprint into Jira.
4. Every day I have to complete my timesheet.
5. When the application crashes, we get a notification and have to restart the application by removing a lock file and checking that the process has died or is not creating entries in the log file.

Toil Solutions

1. Manual, Repetitive, Automatable
   - >>> The task is being run every day at the same time = repetitive
   - >>> The task requires a script to be run = manual
   - >>> Automatable because these checks could be done and generate alerts if there are issues
2. Tactical, Manual
   - >>> The issue is event driven and reactive as something is letting us know
   - >>> Manual because we have to review logs and run script
   - >>> Potentially automatable, but the logic behind what didn't get backed up may cost too much in time
3. This item is not toil, but overhead as it is part of sprint planning
4. Overhead, as each person's timesheet is different
5. Manual, Automatable, Tactical, Scales linear with service
   - >>> Manual because we have to run commands and check log files
   - >>> Potentially automatable as we get an alert, so we could potentially add the logic to check if the process is running, check if lock file exists and remove, check if there are entries occurring in the log file over a time period, restart. If there are any other checks then we may not be able to solve with logic.
   - >>> Tactical because we are responding to an alert.

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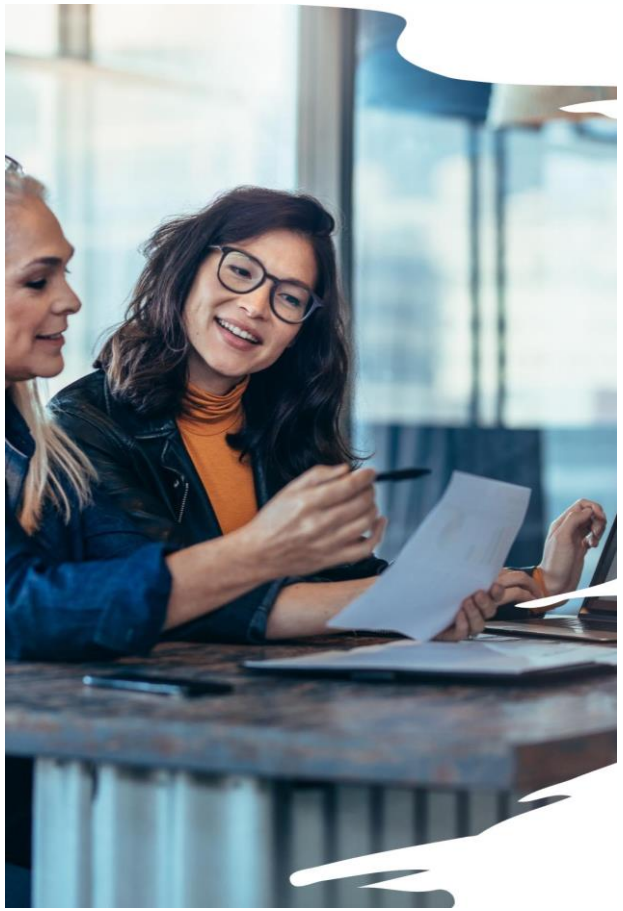
Good Toil

- Are any of tasks that you listed …
  - >>> One-off or ad-hoc
  - >>> Only occur rarely, e.g. once a quarter
  - >>> Well-documented
- If so mark them as GOOD TOIL
  - >>> And move them to REVIEW in your backlog Kanban
  - >>> Or if you need to document them, move them to “TBD”
- Reducing toil is a goal of SRE
- Identifying good toil is a goal of SRE



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Summary Q&A

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Reference

- Edwards, D. (2019, May 28). SRE Lessons: Continuously Optimize to Reduce Toil. From https://www.rundeck.com/blog/sre-lessons-continuously-optimize-to-reduce-toil

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