
ONBOARDING

Microservice2Go Part 1

C&M Practical Material

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All participants of the practical course and the seminar must observe a few rules which exist at C&M to ease the cooperation between its members. By solving the exercises of this M2Go part, the M2GoParticipants (= students who participate in the practical course or in the seminar) become familiar with the most relevant subset of these rules by applying them to their personal working environment.

1 Documentation

1.1 Document Storage

The document storage is a network drive which can be accessed with different systems. In Microsoft Windows, the document storage can be accessed using the path `\\sccfs.scc.kit.edu\OE\TM\VR\Mitglieder` in Windows Explorer, while Mac or Linux users require the protocol Samba `smb://sccfs.scc.kit.edu/OE/TM/VR/Mitglieder` to open the document storage. To log in, the KIT account is used with the addition of the domain "`@student.kit.edu`", (e.g., `uxxxx@student.kit.edu`). The main purpose of the document repository is the structured storage of documents, in particular the C&M member's work consisting of a document written with \LaTeX and an associated PowerPoint figures file. Each C&M member has their own working folder. For M2GoParticipants, the folder is available at `\\sccfs.scc.kit.edu\OE\TM\VR\Mitglieder\3-2.Pr_Se`. The document storage is only available in the KIT network. For a connection outside the network, a Virtual Private Network (VPN) connection (see <https://www.scc.kit.edu/dienste/vpn.php>) is required.

Exercise DocumentStorage

1. **Connect to the Document Storage**

Connect to the documentation storage to your machine.

2. **Adjust the File Names**

Locate your own directory and replace the substring in the names of the PDF file and the PowerPoint figures file by your surname (written in lower letters).

1.2 Thesis Document

The thesis of the practical course and the seminar is written using \LaTeX and the online editor Overleaf which can be accessed using the link <https://www.overleaf.com/>. For this purpose, a template packed as ZIP file is made available in the M2GoParticipant's working folder in the sub-folder "4.LaTeX_Sources". The ZIP file must be unpacked and uploaded to Overleaf. Detailed information for using Overleaf is available in the document `3.latex-nutzung_bei_cm`, found at `\\sccfs.scc.kit.edu\OE\TM\VR\Mitglieder\1-1.Teamarbeit [CM-T-CMT]`.

Exercise ThesisDocument

1. Import Template to Overleaf

Open Overleaf and log in with your KIT account. Upload the \LaTeX template by using the provided ZIP file. Afterwards, ensure that the main document is set to the correct file and compile the document.

2. Rename Overleaf Project

Rename the project name by replacing the substring "name" with your surname. As a result, the document can be downloaded according to the naming specifications.

3. Adjust Title Page

Open the file named 0-1_titlepage.tex and fill out the form. Finally, upload the resulting PDF document to your working folder.

2 Communication and Cooperation

At C&M the English and German languages are used in the following way: (i) The thesis of each student and all content related to teaching and research are written in English. (ii) The documents used for the coordination of work (e.g., agendas, time sheets, status messages) are written in German since all discussions (including the oral exams) are conducted in German. Therefore, the comments of reviews of English documents (e.g., the thesis worked out by each M2GoParticipant during the practical course or the semniar) are written in German.

2.1 Time Sheet

Since all working hours carried out in the context of the practical course and the seminar (not the working hours of the lecture) are documented in a personal time sheet, the first task is to create such a time sheet on the (SharePoint-based) C&M Teamserver. The required start and end date can be found in the PDF document "Veranstaltungsorganisation" located at Mitglieder > 2-1.WASA_M2Go_Aktuell. In order to create a timesheet entry, the work type to be performed must first be captured ("Erfassung der durchzuführenden Arbeiten") which can be accessed at (https://team.kit.edu/sites/cm-tm/_layouts/15/start.aspx#/Lists/Benutzerverwaltung/AllItems.aspx). Afterwards, the time sheet page can be opened (https://team.kit.edu/sites/cm-tm/_layouts/15/start.aspx#/Lists/Stundenzettel/Mein%20Stundenzettel.aspx) and entries can be added.

Exercise TimeSheet**1. Create a New Work Element**

Open the page for recording the work on the SharePoint and add a new element by clicking on "Neues Element". Fill out the form as follows:

- Art: Praktikumsarbeit or Seminararbeit or Proseminar
- Anfangsdatum: see document "Veranstaltungsorganisation"
- Enddatum: see document "Veranstaltungsorganisation"
- Stunden: 150 (Praktikumsarbeit) or 90 (Seminararbeit / Proseminar)

2. Add First Hours

Add a new time element which covers the organizational work and fulfilled exercises. Choose the work type "Produktive Arbeit" and add the invested hours. An entry should contain the name of the exercise(s) or challenge(s) which were carried out. The work type "Besprechungen" should be chosen in the case of meetings. No further work type (e.g., C&M-bezogene Arbeit) is relevant for M2GoParticipants. Only capture the working hours related to the practical course or the seminar and not those related to the WASA lecture.

2.2 GitLab Account

GitLab is used for the development of applications and artifacts in M2Go. C&M uses the GitLab instance of KIT which is accessible through <https://gitlab.kit.edu>. The KIT account is required to register at KIT GitLab. As login option, the federated login "FeLS - Federated Login Service" with the home organization "Karlsruhe Institute of Technology" is used. After the first login, an optional but recommended profile picture is added to the GitLab profile at <https://gitlab.kit.edu/-/profile>.

To be able to clone and commit to GitLab, a Secure Socket Shell (SSH) key pair is required. Therefore, an SSH key is created by following the guideline provided at <https://gitlab.kit.edu/help/user/ssh.md#generate-an-ssh-key-pair>. For running the command "ssh-keygen", a terminal needs to be opened (e.g., "Windows PowerShell"). For encryption, ED25519 is selected. In addition, the KIT mail address (as student **uxxxx@student.kit.edu**) is added with the comment flag (-C) as shown in Listing 2.1.

```
1 ssh-keygen -t ed25519 -C "uxxxx@student.kit.edu"
```

Listing 2.1: Create an SSH Key Pair

Copy the content of your public SSH key (generated key file ending on .pub) and add the key to your GitLab account (<https://gitlab.kit.edu/-/profile/keys>). A guideline is provided at <https://gitlab.kit.edu/help/user/ssh.md#add-an-ssh-key-to-your-gitlab-account>. An expiration date for the SSH key is not required.

Exercise CMGitLabSetup

1. **Create GitLab Account**

Login to KIT GitLab and register your account.

2. **Add a Profile Picture (Optional but Recommended)**

Edit your GitLab profile and add your profile picture as avatar.

3. **Create SSH Key Pair**

Generate an SSH key pair with your KIT mail address.

4. **Add SSH Public Key to GitLab Account**

Follow the GitLab guideline to add the SSH public key to your GitLab account.

5. **Notify C&M Employees**

Send a mail with subject "Erstellung des GitLab-Accounts abgeschlossen" to `cm.research@lists.kit.edu` to get access to the C&M GitLab group.

When Microsoft Windows is used, it is important that the service "OpenSSH Authentication Agent" is running. If you have problems running the SSH agent on Microsoft Windows, follow the instructions at <https://blog.stueber.de/posts/github-per-ssh/> to run the service and add the necessary environment variable.

2.3 Onboarding Completion

In this exercise of Part 1, the first content should be written into the thesis document. Remember to document the invested time in the time sheet.

Exercise OnboardingCompletion

1. Write an Introduction

Write an introduction by which you motivate your participation in the WASA module.

2. Describe the M2Go Coordination Concept Applied at C&M

Which are the roles (e.g., M2GoParticipant) and the systems (e.g., GitLab) and artifacts (e.g., time sheet) used in M2Go? Include a PowerPoint figure by which the M2Go coordination concept is illustrated. Make sure that the figure is part of the file pr_<your_surname>_fig.pptx (practical course) or se_<your_surname>_fig.pptx (seminar or proseminar) which is stored in your working folder.

2.4 Status Message and Special Contribution Message

The status message is sent once a month on Tuesday by 12:00 am. The precise dates can be found in the document "veranstaltungsorganisation_<semester>" stored in the folder Mitglieder > 2-1.WASA_M2Go_Aktuell. Before the message is sent to the M2GoSupervisor(s), the time sheet, as well as the working folder should be updated. This includes the thesis document, the PowerPoint figures file, and the subfolder of the UMLet files.

The content of the status message is to be copied from Listing 2.2. Each M2GoParticipant must take care that the working performance is in the "green (or violet) range" indicated by the time sheet (the colour is available at <https://team.kit.edu/sites/cm-tm/Lists/Stundenzettel/Gruppierung%20nach%20Personen.aspx>).

```
1 Betreff: Statusmitteilung KW XX
2
3 Text: Alle Dokumente und der Stundenzettel auf dem Teamserver und im
      GitLab haben einen aktuellen Stand. Die Gesamtstundenzahl befindet
      sich im "grünen" Bereich.
```

Listing 2.2: Status Mail Content

Exercise StatusMessages

1. Send Status Message

Add your thesis document to your working folder. Ensure, that the naming convention is met and update the time sheet. Send the status message to your M2GoSupervisor(s) on the corresponding dates no later than 12 am.

2. Provide Initial Submission

The initial submission is part of the first status message. Copy the PDF file and the PowerPoint figure file stored in your working folder into the subfolder "1.Initial_Contribution" and add the suffix "_ic" to both files. Note that a place to the practical course and the seminar is only assigned to students whose initial submissions fulfill the defined requirements.

M2GoParticipants who have worked out a Special Contribution (SC) which they would like to present in the WASA lecture send an SC message to the M2GoSupervisor(s) (and "cc" M2GoHead). The SC will be reviewed ASAP and the M2GoParticipants will be informed if and when the SC is foreseen in the WASA lecture plan.

3 Bibliography

[CM-T-CMT] Cooperation & Management: C&M-TEAMARBEIT, Teamarbeitsdokument, \\sccfs.scc.kit.edu\OE\TM\VR\Mitglieder\1-1.Teamarbeit.