

Cloud Development Study

The following document shows the interview protocol of our semi-structured interview.

The interviewees were briefed on the topic of our research and conducted semi-structured interviews with software developers that previously already deployed software in the cloud in a professional context. We covered all questions with each participant, but the concrete order of questions followed the “flow” of the interview. Interviews were conducted face-to-face on-site of the interviewee or via Skype. Interviews lasted between 30 and 60 minutes, were conducted in either German or English, and were also audio-recorded.

Please feel free to contact Jürgen Cito (cito@ifi.uzh.ch) if you have any further questions.

[Note: As an appendix, you can view the consent form that was presented to every developer participating in our research]

General/Introduction

1. How is developing applications in the cloud different from developing in a traditional environment?
2. If an issue or change request occurs, what kind of requests would you consider to be cloud-specific?

Process and Communication

1. When an issue or change request is reported, what is the process to determine that it's a developer specific issue and not, for instance, an issue for operations/system administration?
Follow-up:
 - Who decided that the issue was a development issue, i.e., how were those issues assigned to you?
2. How did communication change when moving to the cloud?
3. Who handles operations activities?
 - a. Is there a separate team for operations (or any other aspect you would deem cloud specific)
 - b. Do developers handle infrastructure or other operations concerns

Steps to Resolving an Issue (Data and Tools)

1. Think of an issue you have worked on, that you would consider to be specific to the cloud. Please take me through the steps of resolving the issue:
 - a. What data did you require / use / look at in (and in what order) in order to identify the root-cause? How was this data retrieved? Was it difficult/tedious to obtain the necessary data?
 - b. Which of these data items would you classify as runtime data
 - c. Which of these data items would you classify as cloud-specific
 - d. What tools did you use for generating and/or displaying data

Follow Up:

- Did you know in advance it was a cloud-specific issue or somewhere along the process of resolving it?
- What information was crucial to identify the issue as cloud-specific?

Tools

1. How cumbersome is it to use these tools? Are they well integrated into your dev environment? Are you well versed in using them?
2. Did you build those tools yourself for yourself (e.g., some scripts), are they common to your project, or are they generic COTS software?
3. Can you think of any issues where it would have been beneficial to look at some data, but you decided against it because the effort of getting the data seemed too high?
4. What tooling / training would actually help you in such cases?

Data

1. We want to map change Request (Issues/Bugs/Features) to Data / Visualizations Information from the Runtime Environment

1. Performance (Response Time, ...)
2. Load Data (Requests per service [method], server, db, ...)
3. Functional Usage (How often does feature/method X get used)
4. Cost Dimension

2. What data do you look at depending on change request type (bug, issue, feature, ...)?



Consent for Participation in Interview Research

I volunteer to participate in a research project conducted by Jürgen Cito from University of Zurich. I understand that the project is designed to gather information about the software development process in Cloud Computing systems.

1. My participation in this project is voluntary. I understand that I will not be paid for my participation. I may withdraw and discontinue participation at any time without penalty.
2. I understand that most interviewees will find the discussion interesting and thought-provoking. If, however, I feel uncomfortable in any way during the interview session, I have the right to decline to answer any question or to end the interview.
3. Participation involves being interviewed by researchers from University of Zurich. The interview will last approximately 30-45 minutes. Notes will be written during the interview. An audiotape of the interview and subsequent dialogue will be made. If I don't want to be taped, the interviewer will refrain from recording and take more detailed notes instead.
4. I understand that the researcher will not identify me by name in any reports using information obtained from this interview, and that my confidentiality as a participant in this study will remain secure. Subsequent uses of records and data will be subject to standard data use policies, which protect the anonymity of individuals and institutions.
5. I have read and understand the explanation provided to me. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this study.
6. I have been given a copy of this consent form.

Date, Signature (Interviewee)

Date, Signature (Interviewer)