Industrial Year Report

IBM Level 3 CICS Service Engineer

Author:
Alexander Brown

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Chapter 1

Organisational Environment

International Business Machines Corporation (IBM) is an American multinational technology and consulting corporation, with it's headquaters in New York, America. IBM sell a wide range of technical products, both hardware and software, in areas ranging from mainframe computing to nanotechnology. As well as technical products IBM also offer a range of consulting, hosting and infastructure services.

IBM are also know for innovation; holding the largest number of United States of America (US) patents, building new technologies such as IBM Watson and pushing corporate initatives like Smart Planet.

IBM is split into several different business areas which are listed below:

- Global Business Servicess (GBS)
- Global Technology Services (GTS)
- Software Group (SWG)
- Systems and Technologies Group (STG)
- Sales & Distribution
- Intergrated Technology Delivery (ITD)
- Intergrated Managed Business Process Services
- IBM Global Financing

I was employed under the Industrial Trainee (IT) scheme in SWGUnited Kingdom. Based at the Hursley site in Hampshire, the main SWG site in the United Kingdom (UK).

SWG[1] is split into five brands: DB2, Lotus, Tivoli, WebSphere and Rational. SWG in Hursley is largely WebSphere-based.

Customer Information Control System (CICS) Transaction Server[2] is a part of the WebSphere brand. Like many products in SWG CICS has several different deparments: development, test (Functional Verification (FV) test, system test, etc.) and service.

All service departments in IBM are split into three distinct levels:

[1]IBM is such a large company, it would take over 5,000 words to explain the whole structure, so I shall focus on my specific working areas.

[2]CICS Transaction Server is typically shortened to CICS internally

Level 1 Service Are the first point of contact for customers. They deal with basic problems with the product and have a general understanding of the product. If the problem can't be solved by Level 1, it is elevated to Level 2. All problems reported to Level 1 are raised as a Problem Management Request (PMR) and are tracked by Remoth Technical Assistance Information Network (RETAIN).

Level 2 Service Have a good working knowledge of the product and are typically able to diagnose and solve customer problems. If Level 2 are unable to diagnose the problem the PMR is elevated to Level 3 or, if the diagnosis reveals a problem with the product an Authorized Program Analysis Report (APAR) is raised against Level 3.

Level 3 Service Have a very good knowledge of diagnosing problems with the product and of the internals of the product and are authorised to make changes to the source code of the product to fix problems raised by APARs. The majority of Level 3 work involves handling APARs, however some specialist members of the team handle PMRs.

Due to the specialist knowledge required to work in the CICS Level 3 Service team I was not expected to deal with either APARs or PMRs[3]. My main role in the team was to maintain existing tooling and to develop new tooling which would benefit the team.

At the start of the year my main responsibilities were to maintain a tool which would gather statistics on PMRs and APARs in RETAIN and a system named "SPA", a z/OS based working environment specific to CICS Level 3 service. However, due to a process change about a year before I joined IBM, a new working environment; Rational Team Concert (RTC) was being used for all new releases of CICS.

I was initially tasked with intergrating this environment into the statistics tooling, or vice versa as RTC could potentially provide management and statisics gathering by default.

After some changes to the team I was asked to change my focus to maintaining a large tool which pulled APARs from RETAIN into RTC. This tool was also designed to perform other functionality such as delivering fixes for the Eclipse-based suite of tools for CICS to update sites and IBM's central fix management site - Fix Central.

Due to consistent issues and a lack of knowledge with this tooling, it was eventually decided to switch from this tooling to APAR Polling Tool (APT) a tool built and maintained by the IBM WebSphere MQ (MQ) Level 3 Service team and which was being considered being supported by the lab-wide build team.

This left a hole for the automation of delivering fixes for the suite of Eclipse-based tools CICS has. I was asked to develop a solution, Explorer Delivery Tool (EDT)[4], which had to be resilient to the problems which had plagued the old tooling.

Developing this tooling also increased my exposure to the team's RTC environment and lead to me being partly responsible for maintaining the structure of work items (representations of APARs and other associated tasks the team required to follow the service process).

Towards the end of my year I was also picked as part of a small team to plan and run the inductions for the SWG-based ITs for 2012-13. As well as this I was a member of the main team for Smart Cursor, a side project to continue the Extreme Blue project of the same name (BBC News Article).

[3]It can take graduates up to a year and a half to work without constant supervision.

[4]Explorer is a shortening of CICS Explorer; the main Eclipse-based tool for CICS

Chapter 2

Technical and Application Environments

Most systems I worked with in IBM were mainframe z/OS or z/Linux systems. RETAIN and SPA were both applications for z/OS systems[1].

[1]RETAIN is actually a CICS application.