# The Project

## Themes

|  |  |
| --- | --- |
| THEME 1 | |
| I need a | Plugin Manager |
| For | Loading different plugins to change the program function |

|  |  |
| --- | --- |
| THEME 2 | |
| I need a | Threading Facility |
| For | Improved traffic modelling |

|  |  |
| --- | --- |
| THEME 3 | |
| I need a | Service Handler |
| For | Uninterrupted use |

|  |  |
| --- | --- |
| THEME 4 | |
| I need a | API |
| For | Allowing program expansion |

|  |  |
| --- | --- |
| THEME 5 | |
| I need a | Testcase analyser |
| For | Reading testcases |

|  |  |
| --- | --- |
| THEME 6 | |
| I need a | Test Runner |
| For | Running testcases |

|  |  |
| --- | --- |
| THEME 7 | |
| I need a | Logger |
| For | Logging |

|  |  |
| --- | --- |
| THEME 8 | |
| I need a | Database |
| For | Tracking results and configuration |

|  |  |
| --- | --- |
| THEME 9 | |
| I need a | Extra server communication |
| For | More realistic traffic from more locations |

## Epics

### THEME 1 Epics (Plugin Manager)

|  |  |
| --- | --- |
| EPIC 1.1 | |
| The | Plugin Manager |
| Needs to | Dynamically load plugins |

### THEME 2 Epics (Threading Facility)

|  |  |
| --- | --- |
| EPIC 2.2 | |
| The | Thread Facility |
| Needs to | Manage the maximum number of threads |

|  |  |
| --- | --- |
| EPIC 2.2 | |
| The | Thread Facility |
| Needs to | Spin up new threads |

|  |  |
| --- | --- |
| EPIC 2.3 | |
| The | Thread Facility |
| Needs to | Have a generic thread handler |

### THEME 3 Epics (Service Handler)

|  |  |
| --- | --- |
| EPIC 3.1 | |
| The | Service Handler |
| Needs to | Keep the program running |

|  |  |
| --- | --- |
| EPIC 3.2 | |
| The | Service Handler |
| Needs to | Receive commands from the user |

|  |  |
| --- | --- |
| EPIC 3.3 | |
| The | Service Handler |
| Needs to | Spin up new Jobs |

|  |  |
| --- | --- |
| EPIC 3.4 | |
| The | Service Handler |
| Needs to | Work with the OS service handler |

|  |  |
| --- | --- |
| EPIC 3.5 | |
| The | Service Handler |
| Needs to | Not interrupt running tests |

|  |  |
| --- | --- |
| EPIC 3.6 | |
| The | Service Handler |
| Needs to | Handle program start-up |

|  |  |
| --- | --- |
| EPIC 3.7 | |
| The | Service Handler |
| Needs to | Handle program first start-up |

|  |  |
| --- | --- |
| EPIC 3.8 | |
| The | Service Handler |
| Needs to | Handle program Shutdown |

### THEME 4 Epics (API)

|  |  |
| --- | --- |
| EPIC 4.1 | |
| The | API |
| Needs to | Allow the program to be controlled |

|  |  |
| --- | --- |
| EPIC 4.2 | |
| The | API |
| Needs to | Allow data to be requested |

### THEME 5 Epics (Testcase Analyser)

|  |  |
| --- | --- |
| EPIC 5.1 | |
| The | Testcase Analyser |
| Needs to | Read in serialised testcases |

|  |  |
| --- | --- |
| EPIC 5.2 | |
| The | Testcase Analyser |
| Needs to | De-serialise testcases |

|  |  |
| --- | --- |
| EPIC 5.3 | |
| The | Testcase Analyser |
| Needs to | Configure jobs based on testcase |

|  |  |
| --- | --- |
| EPIC 5.4 | |
| The | Testcase Analyser |
| Needs to | Have a generic format to appease many protocols |

### THEME 6 Epics (Test Runner)

|  |  |
| --- | --- |
| EPIC 6.1 | |
| The | Test Runner |
| Needs to | Send data to a target |

|  |  |
| --- | --- |
| EPIC 6.2 | |
| The | Test Runner |
| Needs to | Receive Data from a target |

### THEME 7 Epics (Logger)

|  |  |
| --- | --- |
| EPIC 7.1 | |
| The | Logger |
| Needs to | Log what is happening |

|  |  |
| --- | --- |
| EPIC 7.2 | |
| The | Logger |
| Needs to | Be used by whatever requires it |

|  |  |
| --- | --- |
| EPIC 7.3 | |
| The | Logger |
| Needs to | Not slow down operation/slow it down very little |

### THEME 8 Epics (Database)

|  |  |
| --- | --- |
| EPIC 8.1 | |
| The | Database |
| Needs to | Be query’d by the program |

|  |  |
| --- | --- |
| EPIC 8.2 | |
| The | Database |
| Needs to | Store results |

|  |  |
| --- | --- |
| EPIC 8.3 | |
| The | Database |
| Needs to | Be Accessible via the API |

### THEME 9 Epics (Extra Server Comms)

|  |  |
| --- | --- |
| EPIC 9.1 | |
| The | Service |
| Needs to | Communicate with other instances |

|  |  |
| --- | --- |
| EPIC 9.2 | |
| The | Service |
| Needs to |  |

## User Stories

### Theme 1, Epic 1

|  |  |
| --- | --- |
| USER STORY 1.1.1 | |
| As a | Tester |
| I want to | Dynamically load protocol plugins |
| So that I can | Build traffic based on a protocol message builder |

|  |  |
| --- | --- |
| USER STORY 1.1.2 | |
| As a | Tester |
| I want to | Dynamically load communication plugins |
| So that I can | Change the target of built messages |

### Theme 2, Epic 1

|  |  |
| --- | --- |
| USER STORY 2.1.1 | |
| As a | Tester |
| I want to | Configure the number of threads to use per testcase |
| So that I can | Not worry about the default and run different kinds of tests |

|  |  |
| --- | --- |
| USER STORY 2.1.2 | |
| As a | Sysadmin |
| I want to | Apply a hard limit to the number of threads to use |
| So that I can | Limit the resources the program will use |

### Theme 2, Epic 2

|  |  |
| --- | --- |
| USER STORY 2.2.1 | |
| As a | Tester |
| I want to | Interact with the software without interrupting anything |
| So that I can | Not disturb any running tests |

|  |  |
| --- | --- |
| USER STORY 2.2.2 | |
| As a | Sysadmin |
| I want to | Interact with the software without interrupting anything |
| So that I can | Not disturb any running tests |

|  |  |
| --- | --- |
| USER STORY 2.2.3 | |
| As a | Developer |
| I want to | Interact with the software without interrupting anything |
| So that I can | Not disturb any running tests |

|  |  |
| --- | --- |
| USER STORY 2.2.4 | |
| As a | UX Designer |
| I want to | Interact with the software without interrupting anything |
| So that I can | Not disturb any running tests |

### Theme 2, Epic 3

|  |  |
| --- | --- |
| USER STORY 2.3.1 | |
| As a | Maintainer |
| I want to | Worry about less code |
| So that I can | Get more work done on the code base |

### Theme 3, Epic 1

|  |  |
| --- | --- |
| USER STORY 3.1.1 | |
| As a | Sys admin |
| I want to | Not worry about having to start the software repeatedly |
| So that I can | Be bothered less to start the service |

|  |  |
| --- | --- |
| USER STORY 3.1.2 | |
| As a | Sysadmin |
| I want to | Start the program as a service |
| So that I can | Run it in the background |

### Theme 3, Epic 2

|  |  |
| --- | --- |
| USER STORY 3.2.1 | |
| As a | Tester |
| I want to | Start a Test |
| So that I can | Evaluate a protocol or how a server handles load |

|  |  |
| --- | --- |
| USER STORY 3.2.2 | |
| As a | Tester |
| I want to | Stop a test |
| So that I can | Cancel any currently running tests for whatever reason |

|  |  |
| --- | --- |
| USER STORY 3.2.3 | |
| As a | Tester |
| I want to | Query running tests |
| So that I can | Check on their progress |

|  |  |
| --- | --- |
| USER STORY 3.2.4 | |
| As a | Sysadmin |
| I want to | Query program running stats |
| So that I can | To verify how well it’s running |

|  |  |
| --- | --- |
| USER STORY 3.2.5 | |
| As a | UX Designer |
| I want to | Be able to access the API |
| So that I can | Create graphical front ends |

|  |  |
| --- | --- |
| USER STORY 3.2.6 | |
| As a | Developer |
| I want to | Load plugins |
| So that I can | Verify they can be loaded correctly |

### Theme 3, Epic 3

|  |  |
| --- | --- |
| USER STORY 3.3.1 | |
| As a | Tester |
| I want to | Multi-task |
| So that I can | Not interrupt any other currently running tasks |

|  |  |
| --- | --- |
| USER STORY 3.3.2 | |
| As a | UX Designer |
| I want to | Interact with the software without touching the normal running |
| So that I can | Create more seamless and less intrusive Front-ends |

### Theme 3, Epic 4

|  |  |
| --- | --- |
| USER STORY 3.4.1 | |
| As a | Sysadmin |
| I want to | Start the service in a standard way |
| So that I can | Trust the OS to handle it better |

### Theme 3, Epic 5

|  |  |
| --- | --- |
| USER STORY 3.5.1 | |
| As a | Tester |
| I want to | Not interrupt the program’s normal running |
| So that I can | Guarantee more accurate results |

### Theme 3, Epic 6

|  |  |
| --- | --- |
| USER STORY 3.6.1 | |
| As a | Sysadmin |
| I want to | Start the service and it look after itself |
| So that I can | Worry about other things |

### Theme 3, Epic 7

|  |  |
| --- | --- |
| USER STORY 3.7.1 | |
| As a | Sysadmin |
| I want to | Not have to prepare for the program’s first launch |
| So that I can | Have an easier time with setting it up |

|  |  |
| --- | --- |
| USER STORY 3.7.2 | |
| As a | Sysadmin |
| I want to | Have the program clean up when removed/uninstalled |
| So that I can | Worry less about floating files |

### Theme 3, Epic 8

|  |  |
| --- | --- |
| USER STORY 3.8.1 | |
| As a | Sysadmin |
| I want to | Kill the program |
| So that I can | End any strange behaviour |

### Theme 4, Epic 1

|  |  |
| --- | --- |
| USER STORY 4.1.1 | |
| As a | Tester |
| I want to | Control the program using scripts |
| So that I can | Automate testing for different scenarios |

|  |  |
| --- | --- |
| USER STORY 4.1.2 | |
| As a | UX Designer |
| I want to | Have a way of controlling the software using an API |
| So that I can | Create graphical front ends for controlling the program |

### Theme 4, Epic 2

|  |  |
| --- | --- |
| USER STORY 4.2.1 | |
| As a | Tester |
| I want to | Fetch data about currently running tests |
| So that I can | Verify the results |

|  |  |
| --- | --- |
| USER STORY 4.2.2 | |
| As a | UX Designer |
| I want to | Fetch data from the software |
| So that I can | Create graphical front ends for viewing the data |

### Theme 5, Epic 1

|  |  |
| --- | --- |
| USER STORY 5.1.1 | |
| As a | Tester |
| I want to | Send testcases to the software for running |
| So that I can | Run test cases |

### Theme 5, Epic 2

|  |  |
| --- | --- |
| USER STORY 5.2.1 | |
| As a | Tester |
| I want to | Be told where my testcase is syntactically or lexically wrong |
| So that I can | Fix it more easily |

### Theme 5, Epic 3

|  |  |
| --- | --- |
| USER STORY 5.3.1 | |
| As a | Tester |
| I want to | Configure the number of threads to use from within the testcase |
| So that I can | I don’t have to edit the program configuration directly |

|  |  |
| --- | --- |
| USER STORY 5.3.2 | |
| As a | Tester |
| I want to | Configure what protocol is to be loaded from within the testcase |
| So that I can | I don’t have to edit the program configuration directly |

|  |  |
| --- | --- |
| USER STORY 5.3.3 | |
| As a | Tester |
| I want to | Configure the rate that traffic is sent from within the test case |
| So that I can | I don’t have to edit the program configuration directly |

|  |  |
| --- | --- |
| USER STORY 5.3.4 | |
| As a | Tester |
| I want to | Configure whether chaos should be applied to the traffic |
| So that I can | I don’t have to edit the program configuration directly |

### Theme 5, Epic 4

|  |  |
| --- | --- |
| USER STORY 5.4.1 | |
| As a | Tester |
| I want to | Write testcases for many protocols |
| So that I can | Test many aspects of a server |

### Theme 6, Epic 1

|  |  |
| --- | --- |
| USER STORY 6.1.1 | |
| As a | Tester |
| I want to | Send data to a target |
| So that I can | Measure it’s load or test a protocol |

### Theme 6, Epic 2

|  |  |
| --- | --- |
| USER STORY 6.2.1 | |
| As a | Tester |
| I want to | Have the data results recorded |
| So that I can | Verify everything is working |

### Theme 7, Epic 1

|  |  |
| --- | --- |
| USER STORY 7.1.1 | |
| As a | Sysadmin |
| I want to | Read logs |
| So that I can | Verify the program is working correctly |

|  |  |
| --- | --- |
| USER STORY 7.1.2 | |
| As a | Tester |
| I want to | Read logs |
| So that I can | Verify tests are running |

|  |  |
| --- | --- |
| USER STORY 7.1.3 | |
| As a | Tester |
| I want to | Read logs |
| So that I can | Verify tests are completed |

|  |  |
| --- | --- |
| USER STORY 7.1.4 | |
| As a | Tester |
| I want to | Read logs |
| So that I can | Verify tests are performing as expected |

### Theme 7, Epic 2

|  |  |
| --- | --- |
| USER STORY 7.2.1 | |
| As a | Sysadmin |
| I want to | Receive reports from all aspects of the system |
| So that I can | Get a better picture of what is going on |

### Theme 7, Epic 3

|  |  |
| --- | --- |
| USER STORY 7.3.1 | |
| As a | Tester |
| I want to | Know that the logger won’t hinder the system too much |
| So that I can | Guarantee more accurate results |

### Theme 8, Epic 1

|  |  |
| --- | --- |
| USER STORY 8.1.1 | |
| As a | Tester |
| I want to | Read data from the database |
| So that I can | Look over past results |

|  |  |
| --- | --- |
| USER STORY 8.1.2 | |
| As a | UX Designer |
| I want to | Read data from the database |
| So that I can | Create data visualisations |

|  |  |
| --- | --- |
| USER STORY 8.1.3 | |
| As a | Manager |
| I want to | Read data from the database |
| So that I can | Make sure everything is going well |

### Theme 8, Epic 2

|  |  |
| --- | --- |
| USER STORY 8.2.1 | |
| As a | Tester |
| I want to | Compare previous runs |
| So that I can | Draw conclusions as to how the target is dealing with things |

### Theme 8, Epic 3

|  |  |
| --- | --- |
| USER STORY 8.3.1 | |
| As a | UX Designer |
| I want to | Access the database |
| So that I can | Create data visualisation front ends |

|  |  |
| --- | --- |
| USER STORY 8.3.2 | |
| As a | UX Designer |
| I want to | Access the database |
| So that I can | Create data visualisation front ends |

|  |  |
| --- | --- |
| USER STORY 8.3.3 | |
| As a | Tester |
| I want to | Access the database via a command line |
| So that I can | Create automated verification scripts |

### Theme 9, Epic 1

|  |  |
| --- | --- |
| USER STORY 9.1.1 | |
| As a | Tester |
| I want to | Run tests from many locations |
| So that I can | Get a better and more accurate idea of how something handles load |

|  |  |
| --- | --- |
| USER STORY 9.1.2 | |
| As a | Tester |
| I want to | Run tests from many locations |
| So that I can | Perform larger scale tests to further improve how load is handled |

|  |  |
| --- | --- |
| USER STORY 9.1.3 | |
| As a | Tester |
| I want to | Verify results from multiple instances |
| So that I can | See how well the software performed |

|  |  |
| --- | --- |
| USER STORY 9.1.4 | |
| As a | Tester |
| I want to | Worry only about using a single instance |
| So that I can | Trust the service will handle using other instances appropriately |

## Complete Requirements List

The requirements ID list below is directly related to each user story as given in the previous User Stories section. Here I aim to provide a priority to each User Story, and to list what acceptance tests it is covered by. The acceptance tests are given in the next section.  
Key: S = Highest Priority, A, B, C, D = Lower Priority

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| # | ID | Priority | Data Created | Acceptance Tests |
| 1 | 1.1.1 | S | 23/10/2018 |  |
| 2 | 1.1.2 | B |  |
| 3 | 2.1.1 | S |  |
| 4 | 2.1.2 | S |  |
| 5 | 2.2.1 | S |  |
| 6 | 2.2.2 | S |  |
| 7 | 2.2.3 | S |  |
| 8 | 2.2.4 | S |  |
| 9 | 2.3.1 | A |  |
| 10 | 3.1.1 | S |  |
| 11 | 3.1.2 | S |  |
| 12 | 3.2.1 | S |  |
| 13 | 3.2.2 | A |  |
| 14 | 3.2.3 | B |  |
| 15 | 3.2.4 | B |  |
| 16 | 3.2.5 | C |  |
| 17 | 3.2.6 | C |  |
| 18 | 3.3.1 | S |  |
| 19 | 3.3.2 | B |  |
| 20 | 3.4.1 | S |  |
| 21 | 3.5.1 | S |  |
| 22 | 3.6.1 | S |  |
| 23 | 3.7.1 | A |  |
| 24 | 3.8.1 | A |  |
| 25 | 4.1.1 | S |  |
| 26 | 4.1.2 | B |  |
| 27 | 4.2.1 | B |  |
| 28 | 4.2.2 | B |  |
| 29 | 5.1.1 | S | 26/10/2018 |  |
| 30 | 5.2.1 | A |  |
| 31 | 5.3.1 | S |  |
| 32 | 5.3.2 | S |  |
| 33 | 5.3.3 | S |  |
| 34 | 5.3.4 | S |  |
| 35 | 5.4.1 | S |  |
| 36 | 6.1.1 | S |  |
| 37 | 6.2.1 | C |  |
| 38 | 7.1.1 | A |  |
| 39 | 7.1.2 | A |  |
| 40 | 7.1.3 | A |  |
| 41 | 7.1.4 | A |  |
| 42 | 7.2.1 | S |  |
| 43 | 7.3.1 | S |  |
| 44 | 8.1.1 | C |  |
| 45 | 8.1.2 | B |  |
| 46 | 8.1.3 | B |  |
| 47 | 8.2.1 | B |  |
| 48 | 8.3.1 | C |  |
| 49 | 8.3.2 | C |  |
| 50 | 8.3.3 | C |  |
| 51 | 9.1.1 | B | 05/11/2018 |  |
| 52 | 9.1.2 | B |  |
| 53 | 9.1.3 | B |  |
| 54 | 9.1.4 | S |  |