

Gateway Software Testing

The software that ran on the gateway node was extensively unit tested with the help of the C++ unit testing library CppUTest. There were two sections of code that were extensively unit tested, and that is the “common” software that could run on any software in the CTSN (such as the gateway, or on the big computer), and the gateway software that only ran on the gateway node. For the common software, 49 unit tests were written with 91.47 % test coverage. This is shown in Figure 61.

```
.....  
Version: 1.0.0+seth  
.  
Date built: Dec 11 2014 15:42:24  
...  
OK (49 tests, 49 ran, 99 checks, 0 ignored, 0 filtered out, 5 ms)
```

```
Coverage Data:  
[0.0%] HTTPPosterInterface.h  
[4.17%] HTTPPoster.cpp  
[100.0%] BadClientHTTPRequestHandler.cpp  
[100.0%] BaseHTTPRequestHandler.cpp  
[100.0%] DataResultTypes.cpp  
[100.0%] DataResultTypes.h  
[100.0%] LinuxUart.cpp  
[100.0%] Node.cpp  
[100.0%] NotFoundHTTPRequestHandler.cpp  
[100.0%] ShutdownHTTPRequestHandler.cpp  
[100.0%] UartInterface.h  
[100.0%] XBeeTxEvent.cpp  
  
Lines executed:91.47% of 293
```

Figure 61- Unit Test Results for ctsn common

The top screenshot shows that all tests pass for ctsn common. The bottom picture shows the test coverage for each file in the ctsn common project, and how much of

each file is unit tested.

For the gateway software, 222 unit tests were written with 89.09% test coverage. This is shown in figure 62.

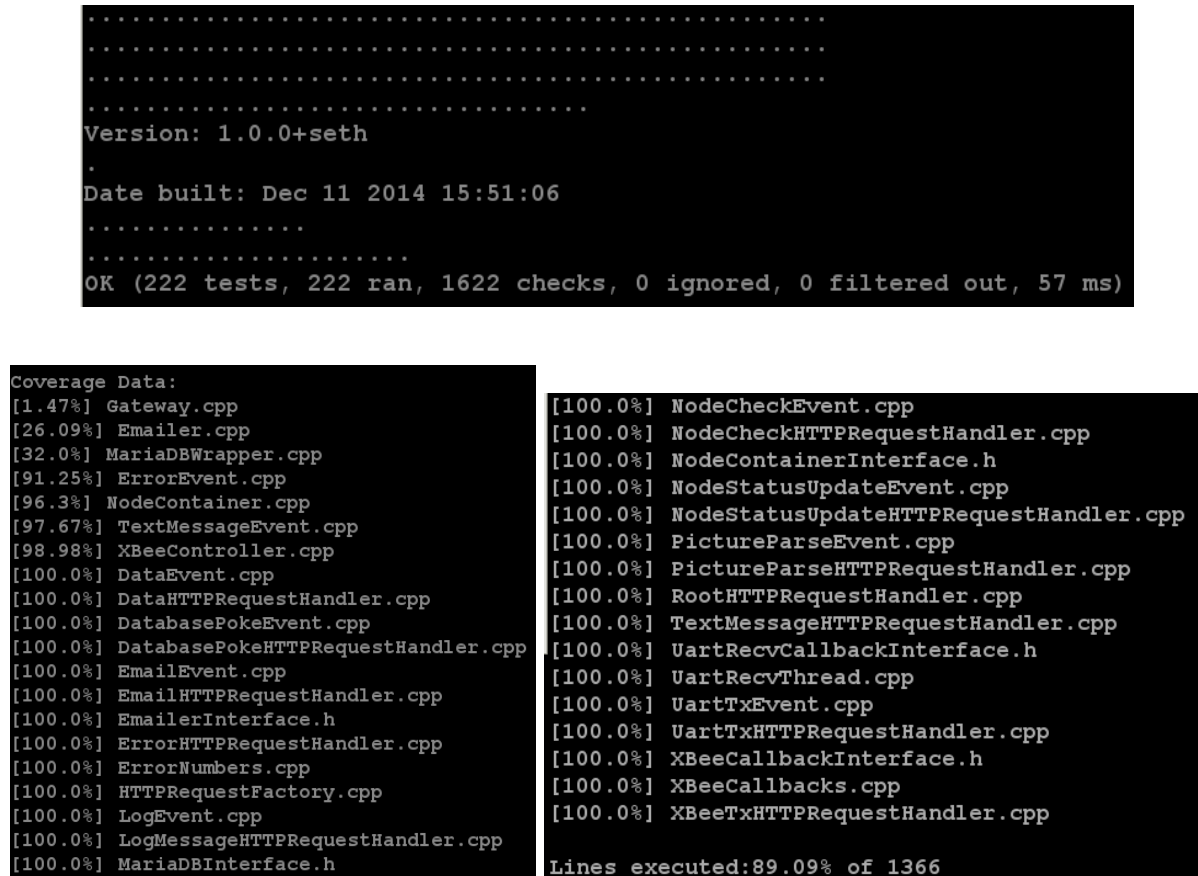


Figure 62- Unit Test Results for Gateway Software

The top screenshot shows that all tests pass for the gateway software. The bottom pictures show the test coverage for each file in the gateway software project, and how much of each file is unit tested.

In total, 271 unit tests were written for the gateway software with a very high amount of test coverage.