

1 Analyzing Flowgraphs with ATL: Performance Evaluation

Table 1 shows some preliminary performance evaluation for our solution. It contains the execution times for each ATL transformations on the provided test cases. For the validation step we manually developed complete specification files for Test0-6. The tests have been performed on an environment with the following characteristics: Processor Intel(R) Core(TM) i7 CPU Q 720 @ 1.60Ghz, with 8GB of physical memory, and running Windows 7 Professional 64-bit - Service Pack 1. As application environment, tests were performed on the Eclipse Platform version 4.2.1 on top of the OpenJDK Java Virtual Machine version 1.7.0.15. The tests show that the transformations can handle large programs (e.g., Test9.java that contains a single method with more than 12000 LOCs) exhibiting good scalability w.r.t. model size.

Test Files	LOC	Java2Graph	Graph2Flow	Flow2Data	Validation	Total
Test0.java	12	0.010	0.009	0.007	0.051	0.077
Test1.java	15	0.010	0.008	0.007	0.049	0.074
Test2.java	14	0.011	0.008	0.006	0.017	0.042
Test3.java	15	0.010	0.009	0.007	0.022	0.048
Test4.java	14	0.010	0.009	0.006	0.015	0.040
Test5.java	15	0.009	0.010	0.006	0.017	0.042
Test6.java	21	0.013	0.010	0.007	0.038	0.068
Test7.java	456	0.073	0.055	0.132	-	0.260
Test8.java	1506	0.300	0.271	0.761	-	1.332
Test9.java	12757	10.191	12.787	45.298	-	68.276
Test10.java	19	0.011	0.008	0.006	-	0.025
Test11.java	10	0.010	0.008	0.009	-	0.027

Table 1. Execution time per transformation per file (sec).