

Appendix D: Test Reports from COTester

Report of Basic Test

```
*****
CAPE-OPEN VALIDATION TESTS: BASIC
*****
Time:          4/22/2005 4:07:08 PM
IDL:           0.9.3
Version: 2.3.0
*****
STARTING TEST
Instantiating : GCOIoptWrapper_NET.CapeMINLPSolverManager.1
*****
*****
TESTING CAPE MINLP Solver INTERFACES
*****
COM Interfaces supported by this MINLP Solver.
ICapeIdentification supported by this MINLP Solver.
ICapeMINLPSolverManager supported by this MINLP Solver.
ICapeMINLPNumericSolverComponent supported by this MINLP Solver.
-----
```

Report of Function Test

```
*****
CAPE-OPEN VALIDATION TESTS: FUNCTION
*****
Time:          4/22/2005 4:07:11 PM
IDL:          0.9.3
Version: 2.3.0
*****
STARTING TEST
Instantiating : GCOIpoptWrapper_NET.CapeMINLPSolverManager.1
*****
Note: in the following report, OK means that a method or a property is
      available and its argument types are matching with the CAPE IDL.

*****
TESTING CAPE MINLP Solver INTERFACES
*****
COM Interfaces supported by this MINLP Solver.
ICapeIdentification supported by this MINLP Solver.
ICapeMINLPSolverManager supported by this MINLP Solver.
ICapeMINLPNumericSolverComponent supported by this MINLP Solver.
*****
TESTING METHODS & PROPERTIES
*****
COM Interfaces are supported by this MINLP Solver.
ICapeIdentification Interface is supported by this MINLP Solver.
  + ICapeIdentification.GET_ComponentName: OK.
  + ICapeIdentification.GET_ComponentDescription: OK.
ICapeMINLPSolverManager Interface is supported by this MINLP Solver.
  + ICapeMINLPSolverManager.CreateMINLPSystem: OK.
ICapeNumericSolver Interface is supported by this MINLP Solver.
  + ICapeNumericSolver.GetParameterList: OK.
  + ICapeNumericSolver.SetParameter: OK.
*****
```

Report of Integration Test

```
*****
CAPE-OPEN VALIDATION TESTS: INTEGRATION
*****
Time:          4/24/2005 11:47:54 PM
IDL:           0.9.3
Version: 2.3.0
*****
STARTING TEST
Instantiating : GCOIoptWrapper_NET.CapeMINLPSolverManager.1
*****
Note: in the following report, OK means that a method or a property is
      available and its argument types are matching with the CAPE IDL.

*****
TESTING CAPE MINLP Solver INTERFACES
*****
COM Interfaces supported by this MINLP Solver.
ICapeIdentification supported by this MINLP Solver.
ICapeMINLPSolverManager supported by this MINLP Solver.
ICapeMINLPNumericSolverComponent supported by this MINLP Solver.
*****
CHECKING CAPE MINLP System - CAPE MINLP MESSAGES
*****
Running problem from file: C:\Documents and Settings\Yidong\My Documents\My
DATA\CAPE-OPEN\From Michel\Tester\COtester
2.3\TesterSuiteProject\MINLPSamples\ILOPT_TEST.como
*****
      CapeMINLPSystem Creation: OK
      CapeMINLPSystem Solve: OK

CapeMINLPSystem calling sequence:
+CapeMINLP.GetMINLPNonlinearObjectiveFunctionType
+CapeMINLP.SetMINLPVariableValues
+CapeMINLP.GetMINLPObjectiveFunctionDerivativeValues
+CapeMINLP.SetMINLPVariableValues
+CapeMINLP.GetMINLPConstraintDerivativeValues
+CapeMINLP.SetMINLPVariableValues
+CapeMINLP.SetMINLPLagrangeMultipliers
+CapeMINLP.SetMINLPHessianValues
+CapeMINLP.GetMINLPHessianValues
```

Continued

CapeMINLP called methods count:

```
2 Calls +CapeMINLP.GetMINLPSize
2 Calls +CapeMINLP.GetMINLPStructure
0 Calls +CapeMINLP.GetMINLPVariableNames
2 Calls +CapeMINLP.GetMINLPVariableTypes
2 Calls +CapeMINLP.GetMINLPVariableBounds
1 Calls +CapeMINLP.GetMINLPVariableValues
81 Calls+CapeMINLP.SetMINLPVariableValues
0 Calls +CapeMINLP.GetMINLPVariableBooleanAttribute
0 Calls +CapeMINLP.GetMINLPVariableIntegerAttribute
0 Calls +CapeMINLP.GetMINLPVariableDoubleAttribute
0 Calls +CapeMINLP.GetMINLPVariableStringAttribute
0 Calls +CapeMINLP.GetMINLPConstraintNames
2 Calls +CapeMINLP.GetMINLPConstraintBounds
0 Calls +CapeMINLP.GetMINLPConstraintLinearity
0 Calls +CapeMINLP.GetMINLPConstraintBooleanAttribute
0 Calls +CapeMINLP.GetMINLPConstraintIntegerAttribute
0 Calls +CapeMINLP.GetMINLPConstraintDoubleAttribute
0 Calls +CapeMINLP.GetMINLPConstraintStringAttribute
16 Calls+CapeMINLP.GetMINLPNonlinearConstraintValues
17 Calls+CapeMINLP.GetMINLPConstraintDerivativeValues
1 Calls +CapeMINLP.GetMINLPObjectFunctionType
16 Calls+CapeMINLP.GetMINLPNonlinearObjectiveFunctionType
17 Calls+CapeMINLP.GetMINLPObjectiveFunctionDerivativeValues
0 Calls +CapeMINLP.GetMINLPObjectiveFunctionBooleanAttribute
0 Calls +CapeMINLP.GetMINLPObjectiveFunctionIntegerAttribute
0 Calls +CapeMINLP.GetMINLPObjectiveFunctionDoubleAttribute
0 Calls +CapeMINLP.GetMINLPObjectiveFunctionStringAttribute
16 Calls+CapeMINLP.SetMINLPLagrangeMultipliers
0 Calls +CapeMINLP.GetMINLPLagrangeMultipliers
16 Calls+CapeMINLP.SetMINLPHessianValues
1 Calls +CapeMINLP.GetMINLPHessianStructure
16 Calls+CapeMINLP.GetMINLPHessianValues
```

Problem Solution:

```
X1      2.00000000016692
X2      .200000001287293
X3      2.99999999964197
Y1      .100000000163646
Y2      .899999999593413
Y3      .300000000358022
```

Continued

```
*****
CHECKING CAPE MINLP System - Exceptions
*****
Note: This part is not related to the user specified problem (see online
      help for further details)

ECapeOutsideSolverScope exception:
+ECapeOutsideSolverScope exception thrown on an LP Problem Solve
+ECapeOutsideSolverScope exception thrown on an IP Problem Solve
+ECapeOutsideSolverScope exception thrown on an MILP Problem Solve
+ECapeOutsideSolverScope exception thrown on a MINLP Problem Solve
-NLP Problem solved without ECapeOutsideSolverScope exception thrown

ECapeSolvingError exception:
+ECapeSolvingError exception thrown on a unfeasible solution Problem Solve

ECapeInvalidArgument exception:
+ECapeInvalidArgument exception thrown on a CapeMINLPSolverManager.CreateMINLPSystem
*****
```