

```
> nagexample_f e04dgf
```

```
Copying e04dgfe.f to current directory
```

```
cp /usr/local/flsol20dal/examples/source/e04dgfe.f .
```

```
Compiling and linking e04dgfe.f to produce executable file a.out
```

```
f77 -dalign e04dgfe.f -lnag -lsocket -lnsl -lintl
```

```
e04dgfe.f:
```

```
MAIN:
```

```
  objfun:
```

```
Copying e04dgfe.d to current directory
```

```
cp /usr/local/flsol20dal/examples/data/e04dgfe.d .
```

```
Running a.out with data from e04dgfe.d
```

```
a.out < e04dgfe.d
```

```
E04DGF Example Program Results
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```
*** E04DGF
```

```
*** Start of NAG Library implementation details ***
```

```
Implementation title: Sun Solaris
```

```
  Precision: Fortran double precision
```

```
  Product Code: FLSOL20DA
```

```
  Mark: 20B
```

```
*** End of NAG Library implementation details ***
```

```
Parameters
```

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```

```
Variables.....          2
```

```
Maximum step length.... 1.00D+20    EPS (machine precision) 1.11D-16
```

```
Optimality tolerance... 3.26D-12    Linesearch tolerance... 9.00D-01
```

```
Est. opt. function val.  None      Function precision..... 4.37D-15
```

```
Verify level.....      0
```

```
Iteration limit.....    50    Print level.....      10
```

```
Verification of the objective gradients.
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```
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```

The objective gradients seem to be ok.

Directional derivative of the objective -1.47151776D-01
Difference approximation -1.47151796D-01

Itn	Step	Nfun	Objective	Norm G	Norm X	Norm (X(k-1)-X(k))
0	1	1.839397D+00	8.2D-01	1.4D+00		
1	3.7D-01	3	1.724275D+00	2.8D-01	1.3D+00	3.0D-01
2	1.6D+01	8	6.083488D-02	9.2D-01	9.3D-01	2.2D+00
3	1.6D-03	14	5.367978D-02	1.0D+00	9.6D-01	3.7D-02
4	4.8D-01	16	1.783392D-04	5.8D-02	1.1D+00	1.6D-01
5	1.0D+00	17	1.671122D-05	2.0D-02	1.1D+00	6.7D-03
6	1.0D+00	18	1.101991D-07	1.7D-03	1.1D+00	2.4D-03
7	1.0D+00	19	2.332133D-09	1.8D-04	1.1D+00	1.5D-04
8	1.0D+00	20	9.130924D-11	3.3D-05	1.1D+00	3.0D-05
9	1.0D+00	21	1.085455D-12	4.7D-06	1.1D+00	7.0D-06
10	1.0D+00	22	5.308300D-14	1.2D-06	1.1D+00	6.4D-07

Exit from E04DGF after 10 iterations.

Variable	Value	Gradient value
Varbl 1	0.500000	9.1D-07
Varbl 2	-1.00000	8.3D-07

Exit E04DGF - Optimal solution found.

Final objective value = 0.5308300E-13

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