

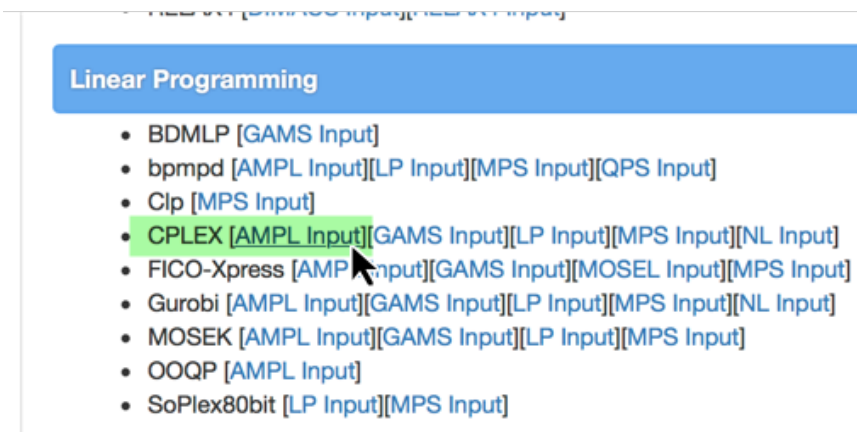
COMO ENVIAR UN MODELO AMPL A NEOS USANDO CPLEX

Paso 1: <https://neos-server.org>

Paso 2: Submit a job to NEOS



Paso 3: Selecciono CPLEX AMPL Input



Paso 4: Relleno el formulario con los ficheros AMPL correspondientes, facilito mi email y pulso el botón Submit a NEOS:

The image shows a screenshot of the NEOS Web Submission Form. The form is titled "Web Submission Form" and has a dark header with "NEOS", "Contact", and "Help" links. The form is divided into several sections:

- Model File:** A text input field with the label "Enter the location of the AMPL model file (local file)". The input contains "ejr01p04.mod" and is highlighted with a green box. A red circle with the number "1" is next to it.
- Data File:** A text input field with the label "Enter the location of the AMPL data file (local file)". The input contains "ejr01p04.dat" and is highlighted with a green box. A red circle with the number "2" is next to it.
- Commands File:** A text input field with the label "Enter the location of the AMPL commands file (local file)". The input contains "ejr01p04.run" and is highlighted with a green box. A red circle with the number "3" is next to it.
- Comments:** A large empty text area.
- Additional Settings:** Two checkboxes: "Dry run: generate job XML instead of submitting it to NEOS" and "Short Priority: submit to higher priority queue with maximum CPU time of 5 minutes". Below them is an "E-Mail address:" label followed by an input field containing "calvo@us.es" and highlighted with a green box. A red circle with the number "4" is next to the input field.
- Submit Buttons:** A blue "Submit to NEOS" button and a grey "Clear this Form" button. A red circle with the number "5" is next to the "Submit to NEOS" button.

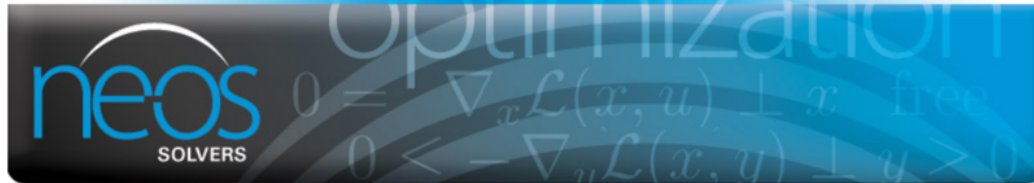
Below the buttons, there is a warning: "Please do not click the 'Submit to NEOS' button more than once." At the bottom of the form, there is a footer: "By submitting a job, you have accepted the [Terms of Use](#)".

Paso 5: Aparecerán dos pantallas

Si el envío es correcto, **primero** aparecerá información sobre el trabajo enviado. Resaltar:

- **Número de trabajo o Job#** (5826505) y
- **Password** (AhZyjdMx):

Estos datos permitirán consultar en la página de NEOS (ver Paso 7) la información sobre el estado y solución del trabajo enviado.



```
NEOS Server Version 5.0
Job#      : 5826505
Password  : AhZyjdMx
```

Disclaimer:

This information is provided without any express or implied warranty. In particular, there is no warranty of any kind concerning the fitness of this information for any particular purpose.

PLEASE DO NOT RELOAD THIS PAGE.

Running:

```
job#5825844  minco  BARON   GAMS  submitted 02/15 06:48 started 02/15 06:48 on prod-sub-1.neos-server
job#5825869  milp   CPLEX   AMPL  submitted 02/15 07:12 started 02/15 07:12 on prod-sub-1.neos-server
job#5825938  milp   CPLEX   GAMS  submitted 02/15 08:21 started 02/15 08:21 on prod-sub-1.neos-server
job#5825971  milp   CPLEX   AMPL  submitted 02/15 08:47 started 02/15 08:47 on prod-sub-1.neos-server
job#5825973  milp   CPLEX   AMPL  submitted 02/15 08:47 started 02/15 08:47 on prod-sub-1.neos-server
job#5825998  milp   CPLEX   AMPL  submitted 02/15 09:14 started 02/15 09:14 on prod-sub-1.neos-server
job#5826000  milp   CPLEX   AMPL  submitted 02/15 09:16 started 02/15 09:16 on prod-sub-1.neos-server
job#5826002  milp   CPLEX   AMPL  submitted 02/15 09:18 started 02/15 09:18 on prod-sub-1.neos-server
job#5826004  milp   CPLEX   AMPL  submitted 02/15 09:20 started 02/15 09:20 on prod-sub-1.neos-server
job#5826006  milp   CPLEX   AMPL  submitted 02/15 09:22 started 02/15 09:22 on prod-sub-1.neos-server
job#5826008  milp   CPLEX   AMPL  submitted 02/15 09:23 started 02/15 09:23 on prod-sub-1.neos-server
job#5826013  milp   CPLEX   AMPL  submitted 02/15 09:29 started 02/15 09:29 on prod-sub-1.neos-server
job#5826023  milp   CPLEX   AMPL  submitted 02/15 09:38 started 02/15 09:38 on prod-sub-1.neos-server
job#5826045  milp   CPLEX   AMPL  submitted 02/15 10:02 started 02/15 10:02 on prod-sub-1.neos-server
job#5826063  lp     CPLEX   AMPL  submitted 02/15 10:16 started 02/15 10:16 on prod-sub-1.neos-server
job#5826071  milp   Gurobi  LP    submitted 02/15 10:21 started 02/15 10:21 on prod-sub-1.neos-server
job#5826082  milp   CPLEX   AMPL  submitted 02/15 10:29 started 02/15 10:29 on prod-sub-1.neos-server
job#5826085  milp   CPLEX   AMPL  submitted 02/15 10:32 started 02/15 10:32 on prod-sub-1.neos-server
job#5826101  milp   CPLEX   AMPL  submitted 02/15 10:42 started 02/15 10:42 on prod-sub-1.neos-server
job#5826102  milp   CPLEX   AMPL  submitted 02/15 10:42 started 02/15 10:42 on prod-sub-1.neos-server
job#5826310  milp   CPLEX   LP    submitted 02/15 11:35 started 02/15 11:35 on prod-sub-1.neos-server
job#5826318  milp   CPLEX   LP    submitted 02/15 11:38 started 02/15 11:38 on prod-sub-1.neos-server
job#5826319  milp   CPLEX   LP    submitted 02/15 11:39 started 02/15 11:39 on prod-sub-1.neos-server
job#5826488  minco  LINDOGL GAMS  submitted 02/15 13:31 started 02/15 13:31 on prod-sub-1.neos-server
job#5826491  kestr  CPLEX   AMPL  submitted 02/15 13:33 started 02/15 13:33 on prod-sub-1.neos-server
job#5826494  milp   CPLEX   LP    submitted 02/15 13:34 started 02/15 13:34 on prod-sub-1.neos-server
job#5826504  milp   CPLEX   LP    submitted 02/15 13:42 started 02/15 13:42 on prod-sub-1.neos-server
```

Queued:

```
job#5826505  lp     CPLEX   AMPL  submitted 02/15 13:43
```

Job 5826505 dispatched

password: AhZyjdMx

----- Begin Solver Output -----

Segunda parte tras obtener la solución:



```
*****
NEOS Server Version 5.0
Job#      : 5826505
Password  : AhZyjdMx
User      : None
Solver    : lp:CPLEX:AMPL
Start     : 2018-02-15 13:43:19
End       : 2018-02-15 13:43:24
Host      : NEOS HTCCondor Pool

Disclaimer:

This information is provided without any express or
implied warranty. In particular, there is no warranty
of any kind concerning the fitness of this
information for any particular purpose.
*****
File exists
You are using the solver cplexamp.
Checking ampl.mod for cplex_options...
Checking ampl.com for cplex_options...
Executing AMPL.
processing data.
processing commands.
Executing on prod-exec-1.neos-server.org

Presolve eliminates 1 constraint and 1 variable.
Adjusted problem:
4 variables, all binary
3 constraints, all linear; 8 nonzeros
    3 inequality constraints
1 linear objective; 4 nonzeros.

CPLEX 12.7.0.0: threads=4
CPLEX 12.7.0.0: optimal integer solution; objective 8
0 MIP simplex iterations
0 branch-and-bound nodes
No basis.
x [*] :=
1 0
2 1
3 1
4 0
5 1
;

z = 8

A :=
1 1 1
1 2 0
1 3 0
1 4 1
1 5 1
2 1 1
2 2 1
2 3 0
2 4 0
2 5 1
3 1 0
3 2 0
3 3 1
3 4 0
3 5 0
4 1 0
4 2 1
4 3 0
4 4 1
4 5 0
;

c [*] :=
1 3
2 2
3 5
4 4
5 1
;

minimize z:
    3*x[1] + 2*x[2] + 5*x[3] + 4*x[4] + x[5];

subject to r[1]:
    x[1] + x[4] + x[5] >= 1;

subject to r[2]:
    x[1] + x[2] + x[5] >= 1;

subject to r[3]:
    x[3] >= 1;

subject to r[4]:
    x[2] + x[4] >= 1;
```

Paso 6: recibirá un email con la solución:

```
neos@neos-server.org
NEOS Results for Job #5826505
Para: Pedro L. Luque

File exists
You are using the solver cplexamp.
Checking ampl.mod for cplex_options...
Checking ampl.com for cplex_options...
Executing AMPL.
processing data.
processing commands.
Executing on prod-exec-1.neos-server.org

Presolve eliminates 1 constraint and 1 variable.
Adjusted problem:
4 variables, all binary
3 constraints, all linear; 8 nonzeros
    3 inequality constraints
1 linear objective; 4 nonzeros.

CPLEX 12.7.0.0: threads=4
CPLEX 12.7.0.0: optimal integer solution; objective 8
0 MIP simplex iterations
0 branch-and-bound nodes
No basis.
x [*] :=
1 0
2 1
3 1
4 0
5 1
;

z 8
```

Y el resto de la salida solicitada....

Paso 7: Se puede consultar el estado del trabajo que se ha enviado o la solución obtenida en cualquier momento en la página de NEOS con los datos del Paso 5.



neOS SERVER Optimization

Enter the job number and the password of the job you wish to kill/view.
You can leave these blank if viewing the queue.

Enter the job number: 5826505 **1**

Enter the password for job: AhZyjdMx

2

View Job Queue

View Job Results

Kill or Dequeue Job

3

Submit

Y se obtendrá la misma salida que la obtenida en el Paso 5 en el servidor NEOS y el email recibido en el Paso 6.

Los ficheros AMPL de ejemplo que se han utilizado para resolverlo son los siguientes:

----- **ejr01p04.mod**

```
param m;  
param n;  
  
param A {1..m,1..n} binary;  
param c {1..n};  
  
var x {1..n} binary;  
  
minimize z: sum {j in 1..n} c[j]*x[j];  
  
s.t. r {i in 1..m}: sum {j in 1..n} A[i,j]*x[j] >= 1;
```

----- **ejr01p04.dat**

```
param m:= 4;  
param n:= 5;  
param c:=  
1 3  
2 2  
3 5  
4 4  
5 1;  
  
param A : 1 2 3 4 5 :=  
1 1 0 0 1 1  
2 1 1 0 0 1  
3 0 0 1 0 0  
4 0 1 0 1 0;
```

----- **ejr01p04.run**

```
solve;  
display x, z;  
display A,c;  
expand;
```
