

Programmazione WEB Avanzata per la Fisica Sperimentale

WEB



Strumenti per il trattamento
dei dati client-side al tempo di HTML5

Un esempio pratico

Gli esempi che abbiamo esaminato finora sono tutti molto semplici, ma già da questi non è difficile comprendere come la realizzazione di pagine con funzioni molto complesse possa richiedere un mole enorme di codice specifico per essere implementate.

Vogliamo affrontare in questa parte del corso molte delle problematiche inerenti una complessa interfaccia WEB ad un programma o ad un insieme di programmi eseguiti su un server remoto.

A questo scopo abbiamo pensato ad un esempio pratico, che seguiremo nel suo completo sviluppo a partire dalle prime fasi.

L'esempio riguarda la possibilità di trasmettere dei dati, rilevati dai sensori di uno smartphone, ad un server remoto, che li analizza e li rappresenta graficamente ed in tempo reale all'interno di un browser.

Per realizzarlo useremo degli script in perl e faremo uso di un framework Javascript

Motivazioni

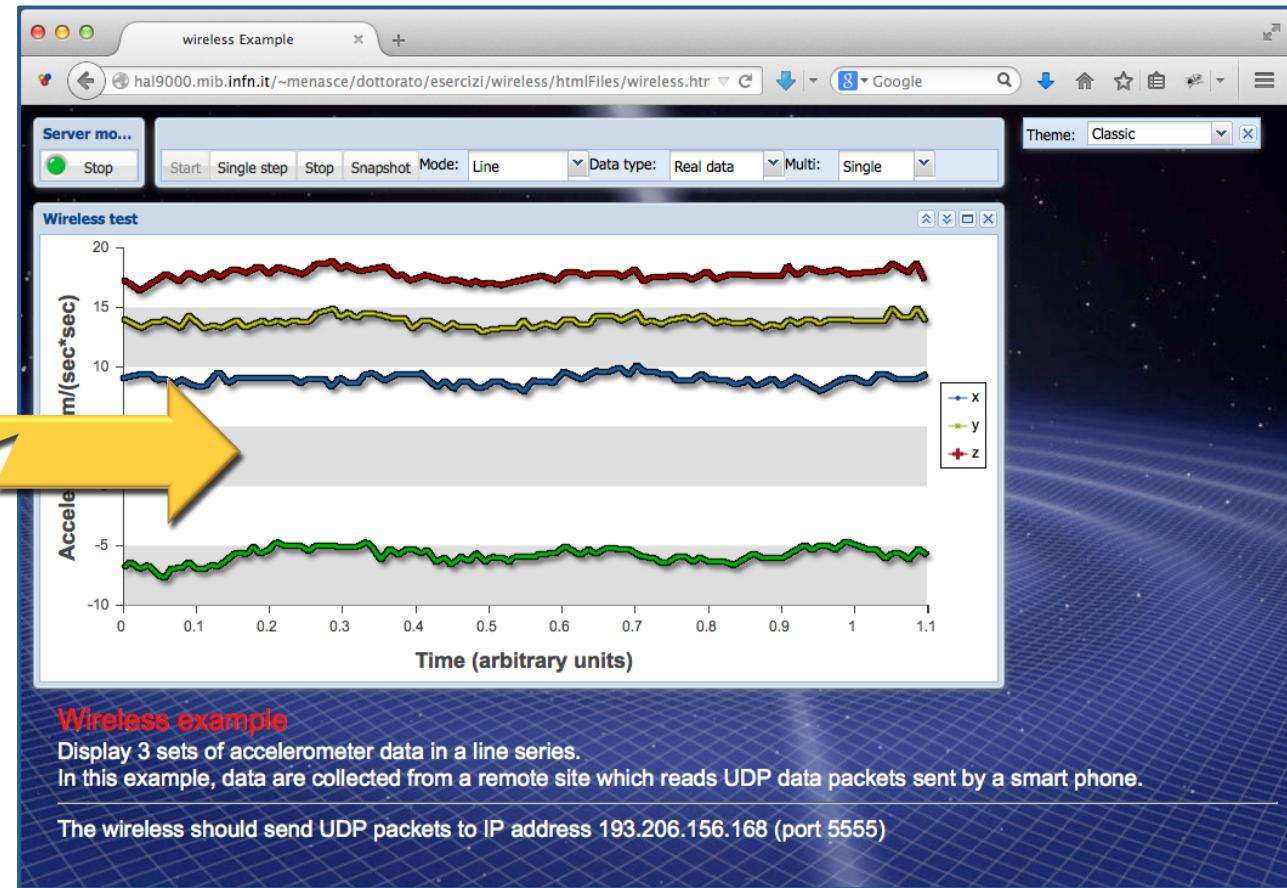
In molti casi esistono già programmi che fanno cose utili e per le quali si vorrebbe poter creare una opportuna interfaccia web. I linguaggi in cui sono scritti vanno dal C++ a PERL, passando per Python (e altri).

In questo corso ho fatto la scelta di implementare il programma server-side in PERL, assumendo che questo possa essere un tipico use-case.

La scelta non è ottimale ma è pragmatica e ha il solo scopo di fornire un esempio pratico reale, funzionante per chi già PERL lo conosce. La stessa cosa si sarebbe potuta fare in C++ o in Python, ma PERL è un linguaggio che offre un'flessibilità molto elevata, dispone di una libreria di moduli amplissima e richiede una learning curve ragionevolmente modesta.

Alla fine del corso accenneremo a Node.js come una possibile alternativa che mantenga tutto il codice di un'applicazione completa in Javascript, sia la parte client che la parte server.

L'esempio pratico



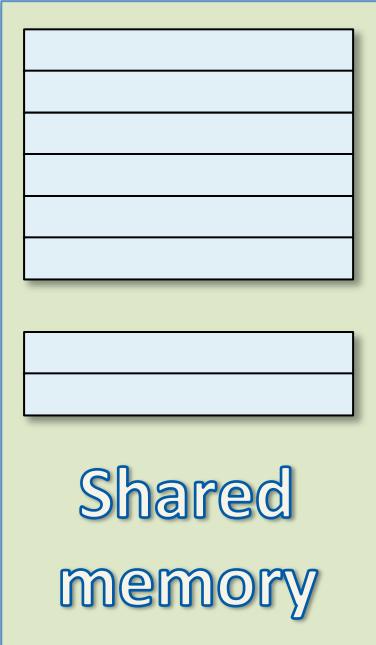
Socket di rete

Producer

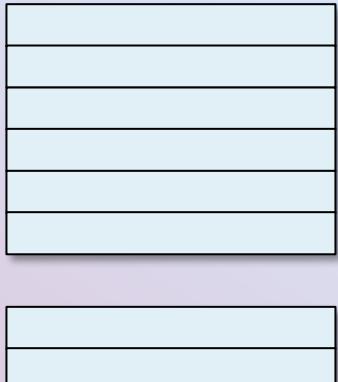


Server remoto

Apache



Consumer

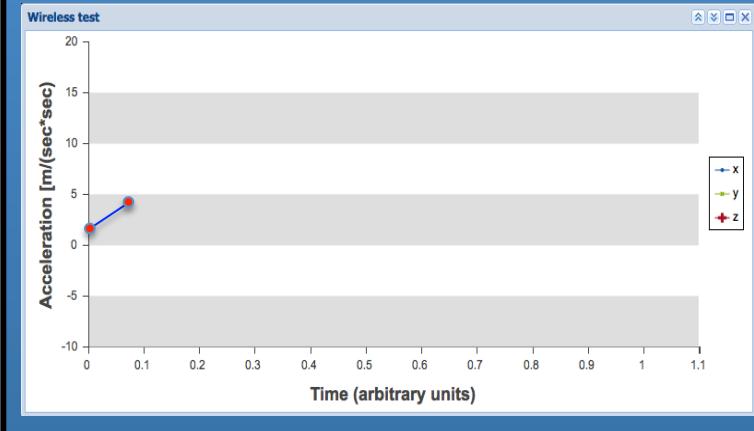


Come possiamo implementare il meccanismo client/server necessario a far funzionare questa applicazione?

Browser



Javascript code



udp_0.pl (modified) – /raid2/users/menasce/public_html/dottorato/esercizi/wireless/perlFiles/

File Edit Search Preferences Shell Macro Windows Help

/raid2/users/menasce/public_html/dottorato/esercizi/wireless/perlFiles/udp_0.pl byte 902 of 920 L: 40 C: 4

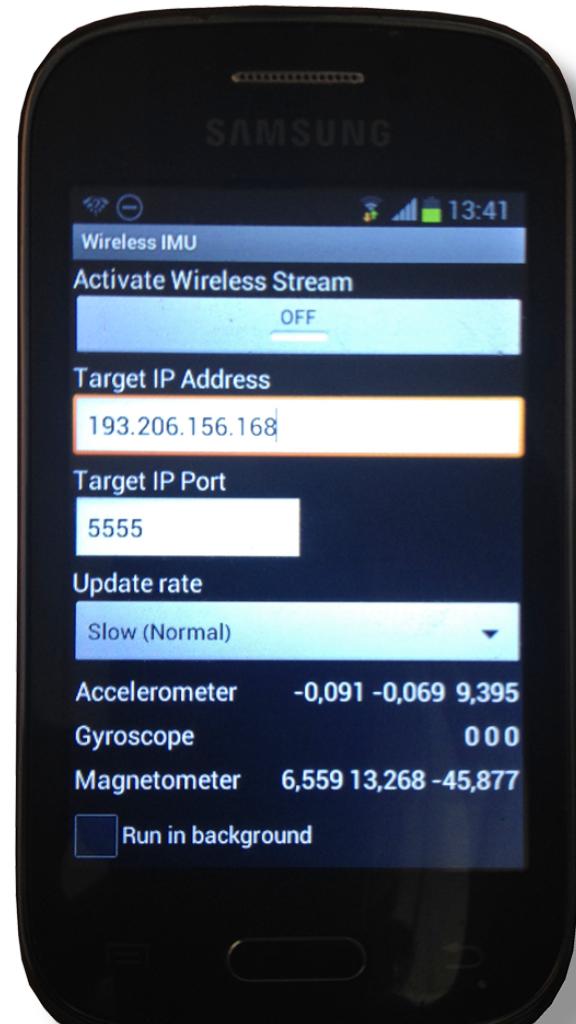
```
1 #!/usr/bin/perl -w
2 #
3 # Author: D. Menasce
4 # First example of a script that listens on a user-defined port
5 # for udp packets and, upon receipt, just prints them on STDOUT
6 #=====
7 use IO::Socket;
8
9 my ($sock, $newmsg, $hishost, $MAXLEN, $PORTNO);
10
11 $MAXLEN = 1024;
12 $PORTNO = 5555;
13
14 $sock = IO::Socket::INET->new(
15                         LocalPort => $PORTNO,
16                         Proto      => 'udp'
17                         ) or die "Cannot open socket: $@";
18
19 my $IPAddr = &getAddr();
20
21 print("Awaiting data on port $PORTNO ($IPAddr) from mobile\n");
22
23 while ($sock->recv($newmsg, $MAXLEN))
24 {
25     print("$newmsg\n");
26 }
27
28 die "recv: $!";
29 #=====
```

/raid2/users/menasce/public_html/dottorato/esercizi/wireless/perlFiles/udp_0.pl byte 900 of 918

L: 40 C: 2

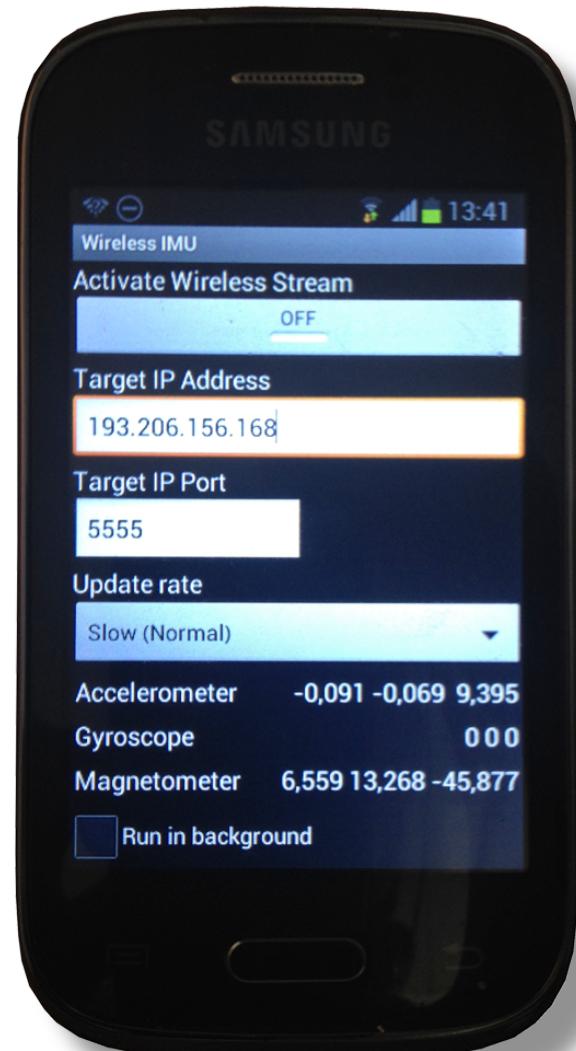
193.206.156.168

```
27
28 die "recv: $!";
29 #=====
30 sub getAddr ←
31 {
32     open(PIPE,"/sbin/ifconfig |");
33     while(<PIPE>)
34     {
35         if(m/inet addr:(.+)?\s+Bcast/)
36         {
37             close(PIPE) ;
38             return $1 ;
39         }
40     }
41     close(PIPE) ;
42 }
43
```



The screenshot shows the Google Play Store page for the "Wireless IMU" app. The app icon is a green gyroscope. The page status says "Installed". Below the store interface, there is a composite image. On the left is a smartphone displaying the app's configuration screen, which includes fields for Target IP Address (192.168.0.1), Target IP Port (5555), and Update rate (Fastest). It also lists Accelerometer, Gyroscope, and Magnetometer data with values like -0.700, 0.643, 1.158. On the right is a laptop screen showing the "Wireless IMU" software interface with sections for Activate Wireless Stream (OFF), Target IP Address (192.168.0.1), Target IP Port (5555), Update rate (Fastest), Accelerometer (0 0 0), Gyroscope (0 0 0), Magnetometer (0 0 0), and a checked checkbox for Run in background.

<https://play.google.com/store/apps/details?id=org.zwiener.wimu&hl=en>



```
[menasce@hal9000 perlFiles]$ ./udp_0.pl
Awaiting data on port 5555 (193.206.156.168 ) from mobile
46087.53063, 3, -0.134, -0.091, 9.397, 5, -11.694, 10.345,-50.675
46087.69066, 3, -0.141, -0.098, 9.373, 5, -10.083, 10.495,-50.450
46087.85062, 3, -0.129, -0.098, 9.378, 5, -10.457, 10.157,-50.600
46088.01053, 3, -0.146, -0.060, 9.397, 5, -9.783, 10.383,-50.263
46088.17051, 3, -0.148, -0.098, 9.369, 5, -11.319, 10.420,-50.675
46088.33053, 3, -0.146, -0.101, 9.388, 5, -11.469, 10.458,-50.375
46088.49115, 3, -0.134, -0.091, 9.369, 5, -9.970, 10.757,-50.675
46088.65053, 3, -0.148, -0.077, 9.395, 5, -10.345, 10.495,-50.338
46088.81055, 3, -0.165, -0.074, 9.395, 5, -10.383, 10.233,-50.375
46088.97049, 3, -0.134, -0.098, 9.371, 5, -9.745, 10.345,-49.887
46089.13050, 3, -0.146, -0.072, 9.395, 5, -10.195, 9.858,-50.263
46089.29076, 3, -0.146, -0.091, 9.385, 5, -10.007, 9.783,-50.225
46089.45051, 3, -0.158, -0.079, 9.400, 5, -9.670, 9.858,-50.300
46089.61051, 3, -0.151, -0.079, 9.395, 5, -10.720, 10.045,-50.412
46089.77054, 3, -0.134, -0.069, 9.409, 5, -10.083, 10.007,-50.412
46089.93051, 3, -0.144, -0.084, 9.378, 5, -9.820, 10.383,-50.450
46090.09050, 3, -0.146, -0.062, 9.345, 5, -10.233, 9.708,-50.487
```

Timestamp

Sensor ID

Data: x, y, z

Sensor ID

Data: x, y, z

```

1 #!/usr/bin/perl -w
2 #
3 # Author: D. Menasce
4 # Second example of a script that listens on a user-defined port
5 # for udp packets and, upon receipt, just prints them on STDOUT
6 =====
7 use IO::Socket;
8
9 my($sock, $newmsg, $hishost, $MAXLEN, $PORTNO);
10
11 $MAXLEN = 1024; Miglioriamo ora lo script con due funzionalità: la decodifica
12 $PORTNO = 5555; dei dati in arrivo e la loro gestione in un buffer circolare.
13
14 $sock = IO::Socket::INET->new(
15                               LocalPort => $PORTNO,
16                               Proto      => 'udp'
17 ) or die "Cannot open socket: $@";
18
46087.53063, 3, -0.134, -0.091, 9.397, 5, -11.694, 10.345,-50.675
19
20 print("Awaiting data on port $PORTNO ($IPAddr) from mobile\n");
21
22 while ($sock->recv($newmsg, $MAXLEN))
23 {
24   my($time, $dev1, $x, $y, $z, @other) = split(/\s+/, $newmsg);
25
26   &data("$x, $y, $z\n");
27
28
29 $sock->send("CONFIRMED: $newmsg ");

```

udp_1.pl - /raid2/users/menasce/public_html/dottorato/esercizi/wireless/perlFiles/
File Edit Search Preferences Shell Macro Windows Help
/raid2/users/menasce/public_html/dottorato/esercizi/wireless/perlFiles/udp_1.pl byte 444 of 1416 L: 16 C: 24

```
29 $sock->send("CONFIRMED: $newmsg ");
30 }
31
32 die "recv: $!";
33
34 #=====
35 # Trivial implementation of a round-robin stack with a
36 # user-defined depth
37 sub data
38 {
39     my $v = shift ;
40     my $stackDepth = 10 ;
41
42     $l = scalar @dataArray ;
43     if($l > $stackDepth)
44     {
45         shift @dataArray ;
46         push @dataArray, $v ;
47     }
48     else
49     {
50         push @dataArray, $v ;
51     }
52
53     system("clear") ;
54     print("@dataArray") ;
55
56 }
57
```

The code is annotated with several red boxes and arrows:

- A red box surrounds the line `&data("$x, $y, $z\n") ;`. An arrow points from this box to the line `if($l > $stackDepth)`.
- A red box surrounds the block of code starting with `if($l > $stackDepth)`, which includes lines 43 through 50.
- A red box surrounds the line `push @dataArray, $v ;` at line 50.
- A red box surrounds the line `print("@dataArray") ;` at line 54.

46087.53063, 3, -0.134, -0.091, 9.397, 5, -11.694, 10.345,-50.675

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46087.69066, 3, -0.141, -0.098, 9.373, 5, -10.083, 10.495,-50.450

46087.53063, 3, -0.134, -0.091, 9.397, 5, -11.694, 10.345,-50.675

46087.69066, 3, -0.141, -0.098, 9.373, 5, -10.083, 10.495,-50.450

46087.85062, 3, -0.129, -0.098, 9.378, 5, -10.457, 10.157,-50.600

...

46087.53063, 3, -0.134, -0.091, 9.397, 5, -11.694, 10.345,-50.675

46087.69066, 3, -0.141, -0.098, 9.373, 5, -10.083, 10.495,-50.450

46087.85062, 3, -0.129, -0.098, 9.378, 5, -10.457, 10.157,-50.600

46088.01053, 3, -0.146, -0.060, 9.397, 5, -9.783, 10.383,-50.263

46088.17051, 3, -0.148, -0.098, 9.369, 5, -11.319, 10.420,-50.675

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46088.65053, 3, -0.148, -0.077, 9.395, 5, -10.345, 10.495,-50.338

46088.81055, 3, -0.165, -0.074, 9.395, 5, -10.383, 10.233,-50.375

46088.97049, 3, -0.134, -0.098, 9.371, 5, -9.745, 10.345,-49.887

46087.69066, 3, -0.141, -0.098, 9.373, 5, -10.083, 10.495,-50.450

46087.85062, 3, -0.129, -0.098, 9.378, 5, -10.457, 10.157,-50.600

46088.01053, 3, -0.146, -0.060, 9.397, 5, -9.783, 10.383,-50.263

46088.17051, 3, -0.148, -0.098, 9.369, 5, -11.319, 10.420,-50.675

46088.33053, 3, -0.146, -0.101, 9.388, 5, -11.469, 10.458,-50.375

46088.49115, 3, -0.134, -0.091, 9.369, 5, -9.970, 10.757,-50.675

46088.65053, 3, -0.148, -0.077, 9.395, 5, -10.345, 10.495,-50.338

46088.81055, 3, -0.165, -0.074, 9.395, 5, -10.383, 10.233,-50.375

46088.97049, 3, -0.134, -0.098, 9.371, 5, -9.745, 10.345,-49.887

46089.13050, 3, -0.146, -0.072, 9.395, 5, -10.195, 9.858,-50.263

File Edit Search Preferences Shell Macro Windows Help

shmW_0.pl | shmR_0.pl

/raid2/users/menasce/public_html/dottorato/esercizi/wireless/perlFiles/shmW_0.pl byte 153 of 941

L: 5 C: 43

```
1 #!/usr/bin/perl
2 #
3 # Author: D. Menasce
4 # A simple example of a script that writes stuff into a shared memory
5 # This script works in tandem with ./shmR_0.pl
6 # Run both of them in two different windows
7 #
8 use IPC::SysV      qw(IPC_PRIVATE IPC_RMID S_IRUSR IPC_CREAT S_IWUSR);
9 use IPC::SharedMem ;
10
11 $key      = 12345;
12 $size     = 2048;
13 $message  = "";
14
15 # Create the shared memory segment
16 $key = shmget($key, $size, &IPC_CREAT | 0777 ) or
17 die "Can't shmget: $!";
18 # Place a string in the shared memory
19 $continue = true ;
20 while($continue)
21 {
22     print("What? ");
23     $message = <STDIN> ;
24     if($message eq "end")
25     {
26         $continue = false ;
27     }
28     else
29     {
30         shmwrite( $key, $message, 0, $size ) or die "Can't shmwrite: $!";
31         print("Message placed in shm...\n");
32     }
33 }
34 # Delete it:
35 shmctl( $key, &IPC_RMID, 0 ) or die "Can't shmctl: $! ";
36
```

Anzitutto lo script che scrive nella shm, **shmW_0.pl**

Per testare la tecnica di comunicazione tramite *shared memory*, non avendo ancora a disposizione un generatore di pacchetti UDP, scriviamo una coppia di programmi per usarli poi come semplici esempi.

File Edit Search Preferences Shell Macro Windows Help

shmW_0.pl | shmR_0.pl |

/raid2/users/menasce/public_html/dottorato/esercizi/wireless/perlFiles/shmR_0.pl byte 679 of 679 L: 27 C: 0

```
1 #!/usr/bin/perl
2 #
3 # Author: D. Menasce
4 # A simple example of a script that read stuff from a shared memory
5 # and writes the resulting string to STDOUT. Works in tandem with shmW_0.pl
6 #=====
7
8 use IPC::SysV qw(IPC_PRIVATE IPC_RMID S_IRUSR IPC_CREAT S_IWUSR);
9 use IPC::SharedMem;
10
11 # Assume this file name is shmR.pl
12
13 $key = 12345;
14 $size = 2048;
15
16 # Identify the shared memory segment
17 $id = shmget( $key, $size, 0777 ) or die "Can't shmget: $!";
18
19 # Read its contents into a string
20 while(true)
21 {
22     shmread($id, $var, 0, $size) or die "Can't shmread: $!";
23
24     print("Message received: $var\n");
25     sleep(1);
26 }
27
```

Implementiamo ora il programma che accede alla *shared memory*, in modalità lettura, per trasferirne il contenuto allo STDOUT

Apriamo ora due shell diverse ed eseguiamo, in *contemporanea*, i due script

Client

```
[menasce@hal9000 perlFiles]$ ./shmW_0.pl
What? alfa
Message placed in shm...
What? beta
Message placed in shm...
What? ^C
```

Server

```
[menasce@hal9000 perlFiles]$ ./shmR_0.pl
Message received:
Message received:
Message received: alfa
Message received: alfa
Message received: beta
```

File Edit Search Preferences Shell Macro Windows Help

shmW_1.pl | shmR_1.pl /raid2/users/menasce/public_html/dottorato/esercizi/wireless/perlFiles/shmW_1.pl byte 810 of 1213 L: 32 C: 81

```
1 #!/usr/bin/perl
2 #
3 # Author: D. Menasce
4 # A simple example of a script that writes stuff into a shared memory
5 # This script works in tandem with ./shmR_1.pl
6 # Run both of them in two different windows
7 #
8 use shmC;
9
10 # Initialize common stuff
11 &CS::init() ;
12
13 # Create the shared memory segment
14 my $id = shmget($CS::key, $CS::size, &CS::IPC_CREAT | 0777 ) or
15     die "Can't shmget: $!";
16
17 print("Opened id $id from key $CS::key\n") ;
18 system("ipcs -m") ;
19
20 # Place a string in it
21 foreach my $i (0 .. 25)
22 {
23     &data($id, $i) ;
24     sleep(1) ;
25 }
26
27 # Delete it;
28
29 print("Deleting segment id $id\n") ;
30 shmctl( $id, &CS::IPC_RMID, 0 ) or die "Can't shmctl: $! ";
31
32 #=====
33 sub data
34 {
35     my $shmId = shift ;
36     my $v      = shift ;
```

Includiamo ora un file esterno che contiene le parti comuni al programma writer ed al reader

Mettiamo ora insieme, in un unico programma, la tecnica del **buffer circolare** e quella della **shared memory**.

File Edit Search Preferences Shell Macro Windows Help

shmW_1.pl] shmR_1.pl commonStuff.pm]

/raid2/users/menasce/public_html/dottorato/esercizi/wireless/perlFiles/commonStuff.pm byte 202 of 1078 L: 5 C: 81

```
1 #!/usr/bin/perl -w
2 #
3 # Author: D. Menasce
4 # Common stuff needed in many places of the project, sort of an 'include' file
5 #
6 use strict ;
7 use warnings;
8
9 use IO::Socket ;
10 use File::Spec::Functions;
11
12 package CS;
13
14 #=====
15 sub initialize()
16 {
17     use IPC::SysV      qw(IPC_PRIVATE IPC_RMID S_IRUSR IPC_CREAT S_IWUSR);
18     use IPC::SharedMem ;
19
20     eval 'sub IPC_CREAT {0001000}' unless defined &IPC_CREAT;
21     eval 'sub IPC_RMID {0}'        unless defined &IPC_RMID ;
22
23     $CS::dbg      = 0 ;
24     $CS::maxlen   = 22*1000 ;
25     $CS::portno   = 5555 ;
26     $CS::key      = 12345 ;
27     $CS::size     = 200000 ;
28     $CS::loops    = 20 ;
29     $CS::log      = "/tmp/log.txt" ;
30     $CS::shm      = "/tmp/shm.txt" ;
31     @CS::dataArray = () ;
32 }
33
34 #=====
35 return 1 ;
36
```

File Edit Search Preferences Shell Macro Windows Help

shmW_1.pl | shmR_1.pl | commonStuff.pm |

/raid2/users/menasce/public_html/dottorato/esercizi/wireless/perlFiles/shmW_1.pl byte 810 of 1213 L: 32 C: 81

```
1 #!/usr/bin/perl
2 #
3 # Author: D. Menasce
4 # A simple example of a script that writes stuff into a shared memory
5 # This script works in tandem with ./shmR_1.pl
6 # Run both of them in two different windows
7 #=====
8 use shmC;
9
10 # Initialize common stuff
11 &CS::init() ;
12
13 # Create the shared memory segment
14 my $id = shmget($CS::key, $CS::size, &CS::IPC_CREAT | 0777 ) or
15     die "Can't shmget: $!";
16
17 print("Opened id $id from key $CS::key\n") ;
18 system("ipcs -m") ;
19
[menasce@hal9000 perlFiles]$ ipcs -m
----- Shared Memory Segments -----
key        shmid      owner      perms      bytes      nattch      status
0x00003039 4128771  menasce    777        4096          0
20
21
22
23
24
25
26
27 # Delete it;
28
29 print("Deleting segment id $id\n") ;
30 shmctl( $id, &CS::IPC_RMID, 0 ) or die "Can't shmctl: $! ";
31
32 #=====
33 sub data
34 {
35     my $shmId = shift ;
36     my $v      = shift ;
```

File Edit Search Preferences Shell Macro Windows Help

shmW_1.pl] shmR_1.pl] commonStuff.pm]

/raid2/users/menasce/public_html/dottorato/esercizi/wireless/perlFiles/shmW_1.pl byte 992 of 1217 L: 43 C: 27

```
23 &data($id, $i) ;
24 sleep(1) ;
25 }
26
27 # Delete it;
28
29 print("Deleting segment id $id\n") ;
30 shmctl( $id, &CS::IPC_RMID, 0 ) or die "Can't shmctl: $! ";
31
32 #=====
33 sub data
34 {
35 my $shmId = shift ;
36 my $v      = shift ;
37 my $depth  = 10 ;
38 my $msg    = "" ;
39
40 my $l = scalar @CS::dataArray ;
41 if($l > $CS::depth)
42 {
43     shift @CS::dataArray    ];
44     push  @CS::dataArray, $v ;
45 }
46 else
47 {
48     push  @CS::dataArray, $v ;
49 }
50
51 foreach my $l (@CS::dataArray)
52 {
53     $msg .= "$l " ;
54     shmwrite( $shmId, $msg, 0, $CS::size ) or die "Can't shmwrite: $!";
55 }
56 print("> $msg\n") ;
57 }
58
```

File Edit Search Preferences Shell Macro Windows Help

shmW_1.pl | shmR_1.pl | commonStuff.pm |

/raid2/users/menasce/public_html/dottorato/esercizi/wireless/perlFiles/shmR_1.pl byte 0 of 812 L: 1 C: 0

```
1 #!/usr/bin/perl
2 #
3 # Author: D. Menasce
4 # A simple example of a script that read stuff from a shared memory
5 # This script works in tandem with ./shmW_1.pl
6 # Run both of them in two different windows
7 #=====
8 use shmC;
9
10 # Initialize common stuff
11 &CS::init() ;
12
13 # Identify the shared memory segment
14 $CS::size = 200000 ;
15 $CS::key = 1956 ;
16 print("Using key $CS::key to open shm\n") ;
17 my $id = shmget($CS::key, $CS::size, 0777) or
18     die "\nCan't shmget: $!: (segment has been deleted). Bye.\n\n";
19
20 my $var ;
21
22 print("Opened id $id from key $CS::key\n") ;
23
24 # Read its contents into a string
25 while(true)
26 {
27     shmread($id, $var, 0, $CS::size) or
28         die "\nCan't shmread: (segment has been deleted). Bye.\n\n";
29
30     print("$id] $var\n") ;
31     sleep(1) ;
32 }
33
34
```

Ed ecco il programma che legge dalla
shared memory e stampa su STDOUT:

```
[menasce@hal9000 perlFiles]$ ./shmW_1.pl
Opened id 163844 from key 12345

----- Shared Memory Segments -----
key        shmid      owner      perms
0x00000f9e 98307      apache      777
0x00003039 163844      menasce    777

> 0
> 0 1
> 0 1 2
> 0 1 2 3
> 0 1 2 3 4
> 0 1 2 3 4 5
> 0 1 2 3 4 5 6
> 0 1 2 3 4 5 6 7
> 0 1 2 3 4 5 6 7 8
> 0 1 2 3 4 5 6 7 8 9
> 0 1 2 3 4 5 6 7 8 9 10
> 1 2 3 4 5 6 7 8 9 10 11
> 2 3 4 5 6 7 8 9 10 11 12
> 3 4 5 6 7 8 9 10 11 12 13
> 4 5 6 7 8 9 10 11 12 13 14
```

```
[menasce@hal9000 perlFiles]$ ./shmR_1.pl
Opened id 163844 from key 12345
163844] 0
163844] 0 1
163844] 0 1 2
163844] 0 1 2 3
163844] 0 1 2 3 4
163844] 0 1 2 3 4 5
163844] 0 1 2 3 4 5 6
163844] 0 1 2 3 4 5 6 7
163844] 0 1 2 3 4 5 6 7 8
163844] 0 1 2 3 4 5 6 7 8 9
163844] 0 1 2 3 4 5 6 7 8 9 10
163844] 1 2 3 4 5 6 7 8 9 10 11
163844] 2 3 4 5 6 7 8 9 10 11 12
163844] 3 4 5 6 7 8 9 10 11 12 13
163844] 4 5 6 7 8 9 10 11 12 13 14
163844] 5 6 7 8 9 10 11 12 13 14 15
163844] 6 7 8 9 10 11 12 13 14 15 16
163844] 7 8 9 10 11 12 13 14 15 16 17
163844] 8 9 10 11 12 13 14 15 16 17 18
163844] 9 10 11 12 13 14 15 16 17 18 19
163844] 10 11 12 13 14 15 16 17 18 19 20
163844] 11 12 13 14 15 16 17 18 19 20 21
163844] 12 13 14 15 16 17 18 19 20 21 22
163844] 13 14 15 16 17 18 19 20 21 22 23
163844] 14 15 16 17 18 19 20 21 22 23 24
163844] 15 16 17 18 19 20 21 22 23 24 25
```

Can't shmread: (segment has been deleted). Bye.



<http://sencha.com/products/extjs>



OVERVIEW

DETAILS

GET UP AND RUNNING

EXAMPLES

LICENSING



"Ext JS 5 is an immense step forward in the evolution of an amazing framework."

— Craig Walker, CTO of Xero

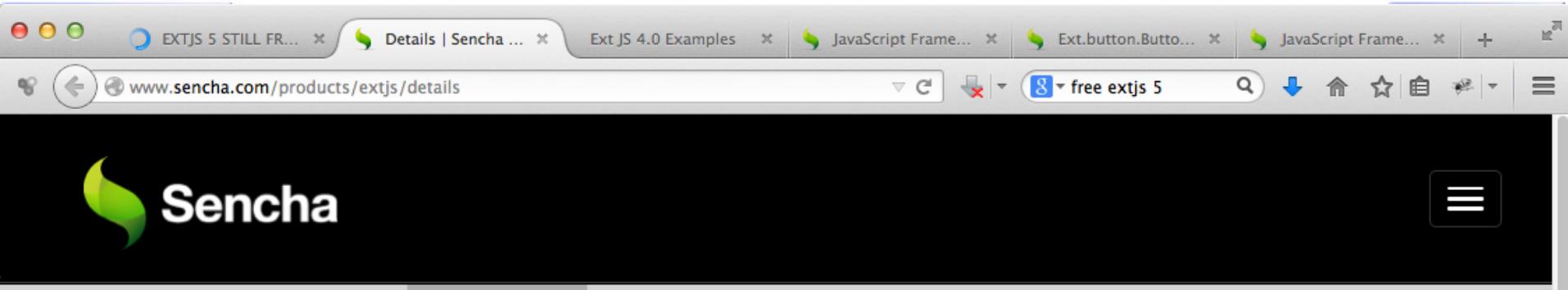
Sencha is excited to announce the release of Ext JS 5, the newest version of our flagship application development framework.



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GET UP AND RUNNING

EXAMPLES

LICENSING



ext js | A HISTORY OF INNOVATION



2007



2009



2011



2014



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Although the GPLv3 has many terms, the most important is that you must provide the source code of your application to your users so they can be free to modify your application for their own needs.

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Thank you for down...

Your file should begin download now.
If not, please [click here](#).

SHA-1 checksum:



Getting Started

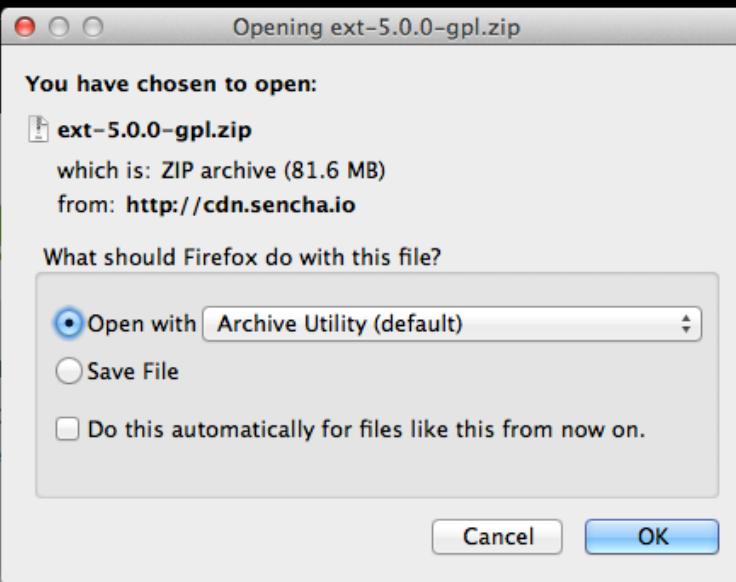
To get started, unzip the archive to your local web server and navigate to <http://localhost/your-ext-install/> to view the documentation and complete working examples. Any samples that use Ajax will need to be on an web server in order to work correctly.

First timers, be sure to read the handy [Getting Started Guide](#).



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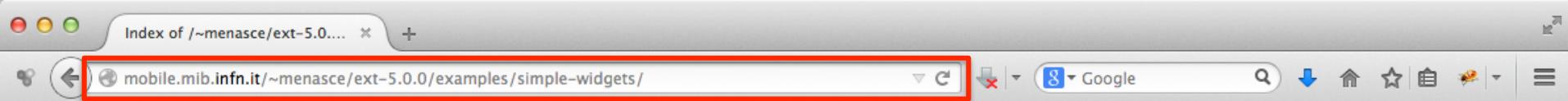
Installazione di Extjs

```
[menasce@hal9000 ~/public_html]$ ll
total 493108
drwxr-xr-x 51 menasce e831          4096 Aug  2 20:56 .
drwxr-xr-x 49 menasce e831          4096 May 21 18:04 ..
drwxr-xr-x 10 menasce e831          4096 Apr 18 2008 ext-2.0
drwxr-xr-x  9 menasce e831          4096 Apr 21 2008 ext-2.1
drwxr-xr-x  9 menasce e831          4096 Apr  6 2009 ext-2.2.1
drwxr-xr-x  9 menasce e831          4096 Mar 20 2010 ext-3.0-rc2
drwxr-xr-x  9 menasce e831          4096 Jul  5 2013 ext-3.1.1
drwxr-xr-x 13 menasce e831          4096 Apr 15 10:53 ext-4.2.1.883
-rw-r--r--  1 menasce e831 70961275 Feb 12 16:03 ext-4.2.1-gpl.zip
-rw-r--r--  1 menasce [REDACTED] 20 ext-5.0.0-gpl.zip
lrwxrwxrwx  1 menasce e831          13 Jul  5 2013 extjs -> ext-4.2.1.883
lrwxrwxrwx  1 menasce e831          13 Apr  9 16:23 extjsLib -> ext-4.2.1.883

[menasce@hal9000 ~/public_html]$ unzip ext-5.0.0-gpl.zip
.....
inflating: ext-5.0.0/welcome/img/button-bg/link-dark-blue-over.png
inflating: ext-5.0.0/welcome/img/button-bg/link-dark-blue.png
inflating: ext-5.0.0/welcome/img/button-bg/link-dark-grey-over.png
inflating: ext-5.0.0/welcome/img/button-bg/link-dark-grey.png
.....
[menasce@hal9000 ~/public_html]$ ln -s ext-5.0.0 extjsLib
lrwxrwxrwx  1 menasce e831          9 Aug  2 21:15 extjsLib -> ext-5.0.0
```

Provare gli esempi

```
[menasce@mobile ext-5.0.0]$ pwd
/usr/gr1/e831/menasce/public_html/ext-5.0.0
[menasce@mobile ext-5.0.0]$ ll
total 1112
drwxr-xr-x 12 menasce e831 4096 Jun 1 15:46 .
drwxr-xr-x 8 menasce e831 4096 Sep 23 14:39 ..
-rw-r--r-- 1 menasce e831 1134 Jun 1 09:02 all.html
-rw-r--r-- 1 menasce e831 58530 Jun 1 15:45 bootstrap-data.js
-rw-r--r-- 1 menasce e831 1392 Jun 1 15:45 bootstrap-files.js
-rw-r--r-- 1 menasce e831 185827 Jun 1 15:45 bootstrap-manifest.js
drwxr-xr-x 5 menasce e831 4096 Jun 1 15:46 build
-rw-r--r-- 1 menasce e831 32759 Jun 1 09:02 build.xml
drwxr-xr-x 2 menasce e831 4096 Jun 1 15:46 cmd
drwxr-xr-x 54 menasce e831 4096 Jun 1 15:46 examples
-rw-r--r-- 1 menasce e831 39458 Jun 1 15:45 ext-all-debug.js
-rw-r--r-- 1 menasce e831 39458 Jun 1 15:45 ext-all.js
-rw-r--r-- 1 menasce [menasce@mobile ext-5.0.0]$ pwd
-rw-r--r-- 1 menasce /user/gr1/e831/menasce/public_html/ext-5.0.0
-rw-r--r-- 1 menasce [menasce@mobile ext-5.0.0]$ ll examples/simple-widgets/
-rw-r--r-- 1 menasce total 32
-rw-r--r-- 1 menasce drwxr-xr-x 3 menasce e831 4096 Jun 1 15:46 .
-rw-r--r-- 1 menasce drwxr-xr-x 54 menasce e831 4096 Jun 1 15:46 ..
drwxr-xr-x 2 menasce -rw-r--r-- 1 menasce e831 975 Jun 1 09:02 editor.html
drwxr-xr-x 5 menasce -rw-r--r-- 1 menasce e831 3622 Jun 1 09:02 editor.js
-rw-r--r-- 1 menasce drwxr-xr-x 2 menasce e831 4096 Jun 1 15:46 images
-rw-r--r-- 1 menasce -rw-r--r-- 1 menasce e831 503 Jun 1 09:02 progress-bar.css
-rw-r--r-- 1 menasce -rw-r--r-- 1 menasce e831 2123 Jun 1 09:02 progress-bar.html
drwxr-xr-x 5 menasce -rw-r--r-- 1 menasce e831 3465 Jun 1 09:02 progress-bar.js
-rw-r--r-- 1 menasce e831 206 Jun 1 09:03 version.properties
drwxr-xr-x 4 menasce e831 4096 Jun 1 09:02 welcome
```



<http://mobile.mib.infn.it/~menasce/ext-5.0.0/examples/simple-widgets/>

<u>Name</u>	<u>Last modified</u>	<u>Size</u>	<u>Description</u>
-------------	----------------------	-------------	--------------------



[Parent Directory](#)



[editor.html](#) 01-Jun-2014 09:02 1.0K



[editor.js](#) 01-Jun-2014 09:02 3.5K



[images/](#) 01-Jun-2014 15:46 -



[progress-bar.css](#) 01-Jun-2014 09:02 503



[progress-bar.html](#) 01-Jun-2014 09:02 2.1K



[progress-bar.js](#) 01-Jun-2014 09:02 3.4K

Apache/2.2.15 (Red Hat) Server at mobile.mib.infn.it Port 80

```
Ext.require([
    'Ext.Editor',
    'Ext.form.Panel',
    'Ext.form.field.ComboBox',
    'Ext.form.field.Date'
]);

Ext.onReady(function(){
    var isLargeTheme = Ext.themeName !== 'classic';
        titleOffset = isLargeTheme ? -6 : -4;

    new Ext.form.Panel({
        renderTo: 'container',
        width: 700,
        height: 400,
        title: 'User Details',
        defaultType: 'textfield',
        bodyPadding: 10,
        defaults: {
            labelWidth: 100
        },
        items: [{
            fieldLabel: 'First Name',
            name: 'firstname'
        }, {
            fieldLabel: 'Middle Name',
            name: 'middlename'
        }, {
            fieldLabel: 'Last Name',
            name: 'lastname'
        }, {
            xtype: 'datefield',
            name: 'birthdate'
        }
    });
});
```

Index of /~menasce/ext-5.0.0/examples/simple-widgets

<u>Name</u>	<u>Last modified</u>	<u>Size</u>	<u>Description</u>
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[Parent Directory](#)



[editor.html](#) 01-Jun-2014 09:02 1.0K



[editor.js](#) 01-Jun-2014 09:02 3.5K



[images/](#) 01-Jun-2014 15:46 -



[progress-bar.css](#) 01-Jun-2014 09:02 503



[progress-bar.html](#) 01-Jun-2014 09:02 2.1K



[progress-bar.js](#) 01-Jun-2014 09:02 3.4K

Editor Example

mobile.mib.infn.it/~menasce/ext-5.0.0/examples/simple-widgets/editor.html?theme=classic

Google

Theme: Classic

RTL

Editor examples

Double click on the field labels and the panel title to activate the editor.

Note that the js and css is not minified so it is readable. See [editor.js](#) for the code.

User Details

First Name:

Middle Name:

Last Name:

D.O.B: 

Struttura del folder

```
[menasce@hal9000 wireless]$ pwd
/raid2/users/menasce/public_html/dottorato/esercizi/wireless
[menasce@hal9000 wireless]$ ll
total 8
drwxr-xr-x 7 menasce e831    80 Jul 29 08:33 .
drwxr-xr-x 5 menasce e831  4096 Jul 29 08:30 ..
drwxr-xr-x 2 menasce e831    25 Jul 29 08:34 cssFiles
drwxr-xr-x 2 menasce e831    71 Aug  2 18:37 htmlFiles
drwxr-xr-x 2 menasce e831    58 Jul 29 08:39 images
drwxr-xr-x 2 menasce e831    44 Aug  2 18:29 jsFiles
drwxr-xr-x 2 menasce e831  4096 Aug  2 18:15 perlFiles
```

cssFiles
htmlFiles
images
jsFiles
perlFiles

```
[menasce@hal9000 wireless]$ cd htmlFiles/
[menasce@hal9000 htmlFiles]$ nedit-client wireless_0.html
```

wireless_0.html - /raid2/users/menasce/public_html/dottorato/esercizi/wireless/htmlFiles/

File Edit Search Preferences Shell Macro Windows Help

wireless_0.html wireless_0.js

/raid2/users/menasce/public_html/dottorato/esercizi/wireless/htmlFiles/wireless_0.html byte 1292 of 1292

L: 32 C: 0

```
1 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org
2 <html>
3
4 <head>
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19 </head>
20
21 <body id="docbody">
22
23
24
25
26
27
28
29 </body>
30
31 </html>
32 ^
```

```
1 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org  
2 <html>  
3  
4   <head>  
5     <meta http-equiv="Content-Type" content="text/html" />  
6     <title>First wireless Example</title>  
7     <link href="../../extjsLib/examples/shared/example.css"  
8       rel="stylesheet"  
9       type="text/css" />  
10  
11  
12 Il file visualizzato in questa pagina, wireless_0.html sta nella cartella:  
13  
14  
15   ~/public_html/esercizi/wireless/htmlFiles  
16  
17 mentre extjsLib sta nella cartella:  
18  
19   ~/public_html  
20  
21 ossia, come path relativo:  
22  
23  
24   htmlFiles/../../extjsLib/examples/shared/example.css  
25  
26 Il tag html link, istruisce il browser a richiedere al server il file example.css da una  
27  
28  
29  
30  
31 cartella posta nel path relativo sopraindicato.  
32
```

Il file visualizzato in questa pagina, **wireless_0.html** sta nella cartella:

~/public_html/esercizi/wireless/htmlFiles

mentre **extjsLib** sta nella cartella:

~/public_html

ossia, come **path** relativo:

htmlFiles/../../extjsLib/examples/shared/example.css

Il tag html **link**, istruisce il browser a richiedere al server il file **example.css** da una cartella posta nel **path** relativo sopraindicato.

```
1 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org
2 <html>
3
4   <head>
5     <meta http-equiv="Content-Type" content="text/html" >
6     <title>First wireless Example</title>
7     <link href="../../extjsLib/examples/shared/example.css"
8           rel="stylesheet"
9           type="text/css"
10    <link href="../cssFiles/wireless.css"
11      rel="stylesheet"
12      type="text/css"
13    <script src="../../extjsLib/examples/shared/include-ext.js"
14      type="text/javascript" ></script>
15    <script src="../../extjsLib/examples/shared/options-toolbar.js"
16      type="text/javascript" ></script>
17    <script src="../jsFiles/wireless_0.js"
18      type="text/javascript" ></script>
19  </head>
20
21  <body id="docbody">
22
23
24
25
26
27
28    </div>
29  </body>
30
31</html>
32
```

Script che carica le componenti del framework di Extjs che servono

Script che contiene lo user-code argomento del presente esercizio

wireless_0.html - /user/gr1/e831/menasce/public_html/esercizi/wireless/htmlFiles/

File Edit Search Preferences Shell Macro Windows Help

wireless_0.html wireless_0.js

/user/gr1/e831/menasce/public_html/esercizi/wireless/htmlFiles/wireless_0.html byte 1279 of 1279 L: 32 C: 0

```
1 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org
2 <html>
3
4   <head>
5     <meta http-equiv="Content-Type" content="text/html" >
6     <title>First wireless Example</title>
7     <link href="../../extjsLib/examples/shared/example.css"
8           rel="stylesheet"
9           type="text/css" >
10    <link href="../cssFiles/wireless.css"
11        rel="stylesheet"
12        type="text/css" >
13    <script src="../../extjsLib/examples/shared/include-ext.js"
14          type="text/javascript" ></script>
15    <script src="../../extjsLib/examples/shared/options-toolbar.js"
16          type="text/javascript" ></script>
17    <script src="../jsFiles/wireless_0.js"
18          type="text/javascript" ></script>
19  </head>
20
21  <body id="docbody">
22    <div id="thisHeader">
23      <div style="color: red; font-size: 18pt">First wireless example</div>
24      Just a stupid button, not much else. <br>
25      In this example, we show how to use the Extjs framework to build a
26      simple button
27      <hr>
28    </div>
29  </body>
30
31</html>
32
```

```
1 /*=====
2 Author: D. Menasce
3
4 Simple example of a button which does
5 nothing special, instantiated through
6 the Extjs framework
7 =====*/
```

```
8
9 Ext.onReady
```

```
10 (
11     function()
12     {
13
14
15
16
17
18
19
20
21
22
23
24     }
25 );
```



Il simbolo **Ext** (una referenza alla classe madre in Extjs) risulta definito al momento in cui questa parte di codice va in esecuzione, in quanto caricato dal client prima di **wireless_0.js**, perché questo è l'ordine che abbiamo definito nel file **html**.

Passiamo ora ad esaminare il file con il programma in Javascript caricato dal client (il browser) assieme al file html che lo referenzia.

```
<script src="../../extjsLib/examples/shared/include-ext.js"
       type="text/javascript"></script>
```

```
<script type="text/javascript" src="../jsFiles/wireless_0.js"></script>
```

EXTJS 5 STILL FREE OR ... Thank you! | Sencha Ext JS 4.0 Examples JavaScript Framework f... Ext – Ext JS – Sencha D...

docs.sencha.com/extjs/5.0.0/apidocs/#!/api/Ext

onready

Ext JS Sencha Docs

Button Ext

Ext singleton

Configs 2 Properties 18 Methods 79

Filter class members Show

Ext

onReady(fn, [scope], [options])

Adds a listener to be notified when the document is ready (before onload and before images are loaded).

onReady(fn, [scope], [options])

Adds a listener to be notified when the document is ready (before onload and before images are loaded).

scope : Object (optional)

The scope (this reference) in which the handler function executes. Defaults to the browser

Due parole sul fondamentale concetto di event-loop:

```
while(queue.waitForMessage())
{
    queue.processNextMessage();
}
```

priority : Number (optional)

Relative priority of this callback. A larger number will result in the callback being sorted before

Ext JS Docs - Generated on Thu 24 Jul 2014 00:21:13 by JSDuck 5.1.0. Terms of Use

By Package

By Inheritance

Show private classes

File Edit Search Preferences Shell Macro Windows Help

wireless_0.js wireless_0.html

/raid2/users/menasce/public_html/dottorato/esercizi/wireless/jsFiles/wireless_0.js 491 bytes L: --- C: ---

```
1 /*=====
2 Author: D. Menasce
3
4 Simple example of a button which does
5 nothing special, instantiated through
6 the Extjs framework
7 =====*/
8
9 Ext.onReady
10 (
11     function()
12     {
13         Ext.create(
14             'Ext.Button',
15             {
16                 text      : 'Get data',
17
18
19
20
21
22             }
23         );
24     }
25 );
```

First wireless Example Ext JS 4.0 Examples JavaScript Framework for ... Ext.button.Button – Ext JS ...

hal9000.mib.infn.it/~menasce/dottorato/esercizi/wireless/htmlFiles/wireless_0.html Google

Theme: Neptune

First wireless example

Just a stupid button, not much else.

In this example, we show how to use the Extjs framework to build a simple button

Get data

```
<body id="docbody">
<div id="thisHeader">
<div style="color: red; font-size: 18pt">First wireless example</div>
Just a stupid button, not much else. <br>
In this example, we show how to use the Extjs framework to build a
simple button
<hr>
</div>
</body>
```

```
Ext.create(
    'Ext.Button',
{
    text      : 'Get data',
    renderTo: Ext.getBody(),
});
```

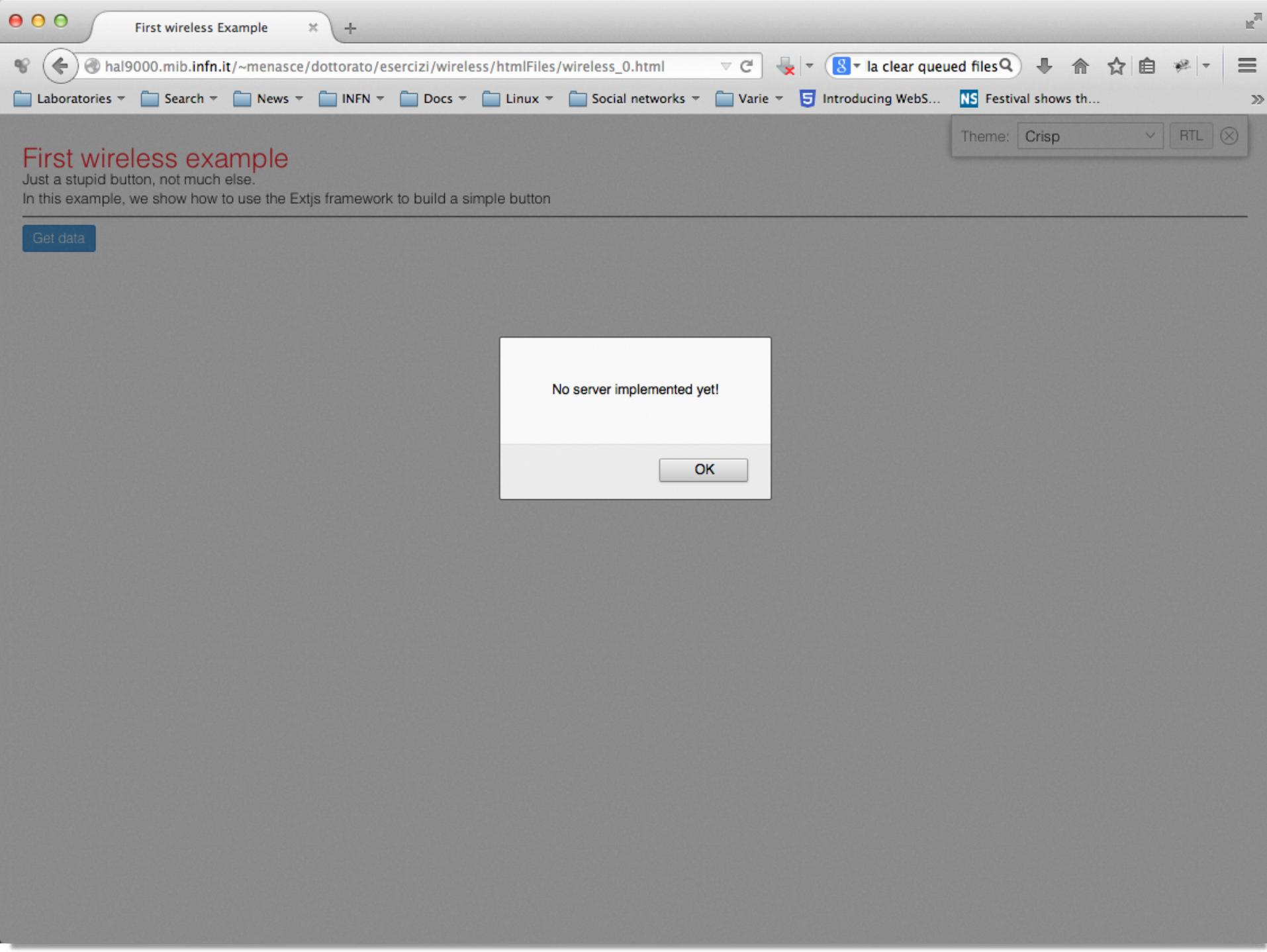
La funzione di **Ext, getBody**, restituisce una referenza al body del documento, rappresentato in memoria come un **DOM** (Document Object Model). Il bottone viene quindi creato come un elemento HTML agganciato alla prima posizione libera nel DOM.

File Edit Search Preferences Shell Macro Windows Help

wireless_0.js | wireless_0.html |

/raid2/users/menasce/public_html/dottorato/esercizi/wireless/jsFiles/wireless_0.js 491 bytes L: --- C: ---

```
1 /*=====
2 Author: D. Menasce
3
4 Simple example of a button which does
5 nothing special, instantiated through
6 the Extjs framework
7 =====*/
8
9 Ext.onReady
10 (
11     function()
12     {
13         Ext.create(
14             'Ext.Button',
15             {
16                 text      : 'Get data',
17                 renderTo: Ext.getBody(),
18                 handler : function()
19                 {
20                     alert('No server implemented yet!');
21                 }
22             }
23         );
24     }
25 );
```



hal9000.mib.infn.it/~menasce/dottorato/esercizi/wireless/htmlFiles/wireless_0.html

g la clear queued files

Laboratories Search News INFN Docs Linux Social networks Varie Introducing WebS... Festival shows th...

Theme: Crisp RTL

First wireless example

Just a stupid button, not much else.

In this example, we show how to use the Extjs framework to build a simple button

Get data

No server implemented yet!

OK

File Edit Search Preferences Shell Macro Windows Help

wireless_1.js wireless_1.html wireless_1.pl

/raid2/users/menasce/public_html/dottorato/esercizi/wireless/htmlFiles/wireless_1.html 1526 bytes

L: --- C: ---

```
10 <script src="../../../../../../extjsLib/examples/shared/options-toolbar.js" type="text/javascript">
11 <script src="../jsFiles/wireless_1.js" type="text/javascript">
12 <style>
13 #output{
14     position : absolute ;
15     display  : block ;
16     top      : 120px ;
17     left     : 10px ;
18     width    : 200px ;
19     height   : 480px ;
20     position : fixed ;
21     border   : 1px solid #e33 ;
22     padding  : 2px ;
23     text-align: left ;
24     font-family: courier ;
25     color    : #00f ;
26 }
27 </style>
28 </head>
29 <!-- -->
30 <body id="docbody">
31
32 <div id="thisHeader">
33     <div style="color: red; font-size: 18pt">
34         First wireless example
35     </div>
36     Still a stupid button, but connected to CGI script. <br>
37 </div>
38
39 <div id="output">
40 </div>
41
42 </body>
43
44 </html>
45
```

Passiamo a qualcosa di più concreto: un bottone che effettivamente produca un qualche risultato utile da rappresentare nel browser.

Dobbiamo operare due correzioni:

- In tutti gli esercizi seguenti <http://hal9000.mib.infn.it> andrà sostituito con lo URL <http://192.168.168.XX> (<http://> è obbligatorio!)
- Una tantum, occorre creare un soft link nella zona abilitata ad eseguire in modalità CGI

```
[guest@webber23 cgi-bin]$ pwd
/home/guest/public_html/cgi-bin
[guest@webber23 cgi-bin]$ ll
total 8
-rwxrwxr-x. 1 guest guest 83 Oct  9 14:32 helloWorld.pl
drwxrwxr-x. 3 guest guest 19 Oct 12 10:35 scripts
-rwxrwxr-x. 1 guest guest 353 Oct 12 11:06 sendAudio.pl
[guest@webber23 cgi-bin]$ ln -s ../dottorato dottorato
[guest@webber23 cgi-bin]$
```

wireless_1.js – /raid2/users/menasce/public_html/dottorato/esercizi/wireless/jsFiles/

File Edit Search Preferences Shell Macro Window wireless_1.js

wireless_1.pl wireless_1.html wireless_1.js

/raid2/users/menasce/public_html/dottorato/esercizi/wireless/jsFiles/wireless_1.js byte 950 of 960

```
1 /*=====
2 Author: D. Menasce
3
4 Another example of a button which is
5 connected to a CGI script that returns
6 a packet of data when requested
7 =====*/
8 var nodeName = "http://hal9000.mib.infn.it/" ;
9 var scriptArea = "cgi-bin/dottorato/esercizi/wireless/perlFiles/" ;
10 var scriptName = "wireless_1.pl" ;
11 var theURL = nodeName + scriptArea + scriptName ;
12 Ext.onReady(
13 (
14 function()
15 {
16 Ext.create
17     'Ext.Button',
18     {
19         text : 'Get data',
20         renderTo: Ext.getBody(),
21         handler : function()
22             {
23                 Ext.Ajax.request
24                 (
25                     {
26                         url : theURL,
27                         success: function(response)
28                         {
29                             var text = response.responseText;
30                             var out = document.getElementById("output");
31                             out.innerHTML = text;
32                         }
33                     );
34                 }
35             }
36         });
37     });
38 
```

Get data

La funzione di call-back riceve in ingresso, al momento della attivazione, una referenza all'oggetto in memoria che contiene la risposta fornita dal server (**response**).

39 <div id="output">
40 </div>

Il testo della risposta viene prelevato usando la variabile **responseText** e posto nella locazione appositamente riservata nel DOM (indicata dal **<div>output</div>**) nel file html di partenza.

```

{
    Ext.Ajax.request
    (
        {
            url : theURL,
            success: function(response)
            {
                var text = response.responseText;
                var out = document.getElementById("output");
                out.innerHTML = text;
            }
        );
    }
}
```

First wireless Example

hal9000.mib.infn.it/~menasce/dottorato/esercizi/wireless/htmlFiles/wireless_1.html?theme=neptune

Laboratories Search News INFN Docs Linux Social networks Varie Introducing WebS... Festival shows th...

Theme: Neptune RTL

First wireless example
Still a stupid button, but connected to CGI script.
[Get data](#)

Analizziamo il flusso di esecuzione del programma ([wireless_1.js](#)) seguendo gli *step* passo per passo e mettendo degli opportuni *breakpoints* (in **Firebug**) per verificare il contenuto delle variabili.

Firebug - First wireless Example

Console HTML CSS Script DOM Net Cookies Illumin... GFX Dojo Changes css Watch Stack Breakpoints

all Window.js?dc=1407142801644

hal9000.mib.infn.it/~menasce/dottorato/esercizi/wireless/jsFiles/wireless_1.js

hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-files.js

hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-manifest.js

ext-all.js

ext-all.js line 1112 > eval line 308 > eval

ext-all.js line 1112 > eval line 921 > Function

ext-all.js line 1112 > eval line 921 > Function (11)

ext-all.js line 1112 > eval line 921 > Function (14)

ext-all.js line 1112 > eval line 921 > Function (2)

ext-all.js line 1112 > eval line 921 > Function (5)

ext-all.js line 1112 > eval line 921 > Function (7)

ext-all.js line 1112 > eval line 921 > Function (9)

hal9000.mib.infn.it/~menasce/extjsLib/examples/shared/include-ext.js

hal9000.mib.infn.it/~menasce/extjsLib/examples/shared/options-toolbar.js

GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-manifest.js?dc=1407142800111 200 OK 10ms ext-all.js (line 566)

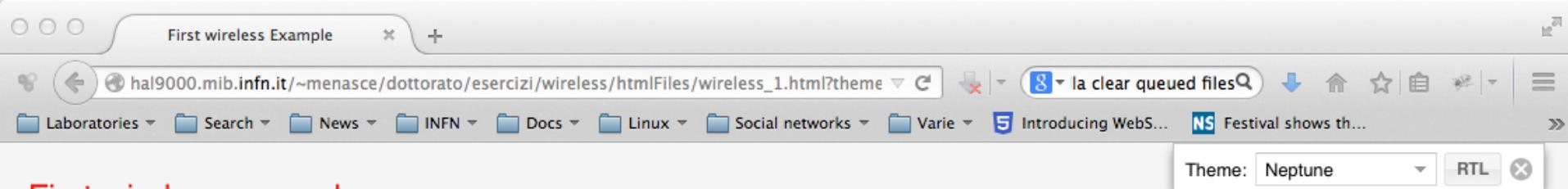
GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-files.js?dc=1407142800111 200 OK 2ms ext-all.js (line 566)

GET http://hal9000.mib.infn.it/~menasce/extjsLib/packages/a-core/.sencha/package/Boot.js?dc=1407142800268 200 OK 5ms ext-all.js (line 566)

GET http://hal9000.mib.infn.it/~menasce/extjsLib/packages/sencha-core/src/Ext.js?dc=1407142800268 200 OK 5ms ext-all.js (line 566)

GET http://hal9000.mib.infn.it/~menasce/extjsLib/packages/sencha-core/src/lang/Error.js?dc=1407142800268 200 OK 2ms ext-all.js (line 566)

GET http://hal9000.mib.infn.it/~menasce/extjsLib/packages/sencha-core/src/lang/Array.js?dc=1407142800268 200 OK 8ms ext-all.js (line 566)



Firebug – First wireless Example

Console HTML CSS Script DOM Net Cookies Illumin... GFX Dojo Changes css

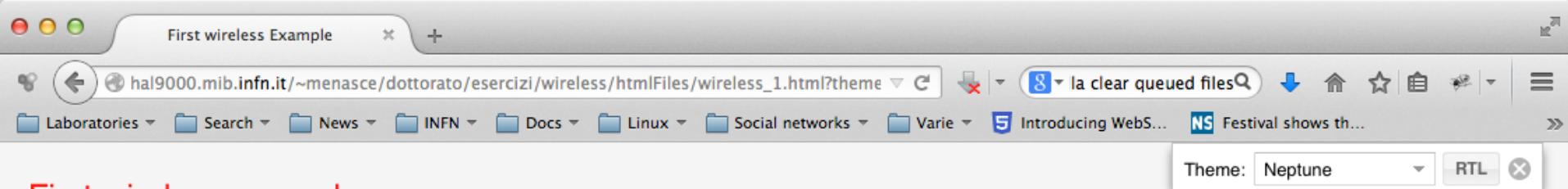
Watch Stack Breakpoints

New watch expression...

▶ window Window wireless_1.html?theme=neptune

```
19         'Ext.Button',
20     {
21         text      : 'Get data',
22         renderTo: Ext.getBody(),
23         handler : function()
24     {
25         Ext.Ajax.request
26     (
27     {
28         url      : theURL,
29         success: function(response)
30     {
31         var text = response.responseText;
32         var out  = document.getElementById('content');
33         out.innerHTML = text;
34     }
35     );
36     }
37     }
38   );
39 }
40 }
```

▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-manifest.js?_dc=1407142800111 200 OK 18ms ext-all.js (line 566)
▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-files.js?_dc=1407142800111 200 OK 2ms ext-all.js (line 566)
▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack...a-core/.sencha/package/Boot.js?_dc=1407142800268 200 OK 5ms ext-all.js (line 566)
▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/packages/sencha-core/src/Ext.js?_dc=1407142800268 200 OK 5ms ext-all.js (line 566)
▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack.../sencha-core/src/lang/Error.js?_dc=1407142800268 200 OK 2ms ext-all.js (line 566)
▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack.../sencha-core/src/lang/Array.js?_dc=1407142800268 200 OK 8ms ext-all.js (line 566)



First wireless example

Still a stupid button, but connected to CGI script.

[Get data](#)

Firebug - First wireless Example

Console HTML CSS Script DOM Net Cookies Illumin... GFX Dojo Changes css

Watch Stack Breakpoints

New watch expression...

this Window wireless_1.html?theme=neptune

Function function(response)

▶ response Object { request=..., requestId=1, status=200, more... }
[Object { request=..., requestId=1, status=200, more... }, Object { url="http://hal9000.mib.infn....perlFiles /wireless_1.pl", success=function() }]
"Here is some data:
\n0...3]
\n24]
\n25]
\n"

arguments undefined

text undefined

out undefined

Global Scope [Window] Window wireless_1.html?theme=neptune

19 'Ext.Button',
20 {
21 text : 'Get data',
22 renderTo: Ext.getBody(),
23 handler : function()
24 {
25 Ext.Ajax.request
26 {
27 url : theURL,
28 success: function(response)
29 {
30 var text = response.responseText;
31 var out = document.getElement
32 out.innerHTML = text;
33 }
34 }
35 }
36 }
37 }
38 }
39 };
40 }

▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-manifest.js?_dc=1407142800111 200 OK 18ms ext-all.js (line 566)
▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-files.js?_dc=1407142800111 200 OK 2ms ext-all.js (line 566)
▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack...a-core/.sencha/package/Boot.js?_dc=1407142800268 200 OK 5ms ext-all.js (line 566)
▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/packages/sencha-core/src/Ext.js?_dc=1407142800268 200 OK 5ms ext-all.js (line 566)
▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack.../sencha-core/src/lang/Error.js?_dc=1407142800268 200 OK 2ms ext-all.js (line 566)
▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack.../sencha-core/src/lang/Array.js?_dc=1407142800268 200 OK 8ms ext-all.js (line 566)

First wireless Example

hal9000.mib.infn.it/~menasce/dottorato/esercizi/wireless/htmlFiles/wireless_1.html?theme

Laboratories Search News INFN Docs Linux Social networks Varie Introducing WebS... Festival shows th...

Theme: Neptune RTL

First wireless example

Still a stupid button, but connected to CGI script.

Get data

Firebug - First wireless Example

Console HTML CSS Script DOM Net Cookies Illumin... GFX Dojo Changes css

Watch Stack Breakpoints

New watch expression...

this Window wireless_1.html?theme=neptune

Function function(response)

response Object { request=..., requestId=1, status=200, more... }

request Object { id=1, headers=..., options=..., more... }

requestId 1

status 200

statusText "OK"

getResponseHeader function(header)

getAllResponseHeaders function()

responseText "Here is some data:
\n0...3
\n24
\n25
\n26
\n27
\n28
\n29
\n30
\n31
\n32
\n33
\n34
\n35
\n36
\n37
\n38
\n39
\n40
"

responseXML null

arguments [Object { request=..., requestId=1, status=200, more... }, Object { url="http://hal9000.mib.infn....perlFiles" }]

all wireless_1.js {} <ler/<.success >.callback > Ext.d▶

```
19         'Ext.Button',
20     {
21         text : 'Get data',
22         renderTo: Ext.getBody(),
23         handler : function()
24         {
25             Ext.Ajax.request
26             (
27                 {
28                     url : theURL,
29                     success: function(response)
30                     {
31                         var text = response.responseText;
32                         var out = document.getElementById('out');
33                         out.innerHTML = text;
34                     }
35                 }
36             );
37         }
38     );
39 }
40 
```

▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-manifest.js?_dc=1407142800111 200 OK 18ms ext-all.js (line 566)
▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-files.js?_dc=1407142800111 200 OK 2ms ext-all.js (line 566)
▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack...a~core/.sencha/package/Boot.js?_dc=1407142800268 200 OK 5ms ext-all.js (line 566)
▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/packages/sencha-core/src/Ext.js?_dc=1407142800268 200 OK 5ms ext-all.js (line 566)
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▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack.../sencha-core/src/lang/Array.js?_dc=1407142800268 200 OK 8ms ext-all.js (line 566)

First wireless Example

hal9000.mib.infn.it/~menasce/dottorato/esercizi/wireless/htmlFiles/wireless_1.html?theme

Laboratories Search News INFN Docs Linux Social networks Varie Introducing WebS... Festival shows th...

Theme: Neptune RTL

First wireless example

Still a stupid button, but connected to CGI script.

Get data

Firebug - First wireless Example

Console HTML CSS Script DOM Net Cookies Illumin... GFX Dojo Changes css

all wireless_1.js {} <ler/.success >.callback > Ext.d▶ Watch Stack Breakpoints

Step Over (F10) watch expression...

19 'Ext.Button',
20 {
21 text : 'Get data',
22 renderTo: Ext.getBody(),
23 handler : function()
24 {
25 Ext.Ajax.request
26 (
27 {
28 url : theURL,
29 success: function(response)
30 {
31 var text = response.responseText;
32 var out = document.getElementById('out');
33 out.innerHTML = text;
34 }
35 }
36);
37 }
38 }
39);
40 };

this
Function
response
request
requestId
status
statusText
getResponseBody
getAllResponseHeaders
responseText

Window wireless_1.html?theme=neptune
function(response)
Object { request=..., requestId=1, status=200, more... }
Object { id=1, headers=..., options=..., more... }
1
200
"OK"
function(header)
function()
"Here is some data:
0]
1]
2]
3]
4]
5]
"

GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-manifest.js?_dc=1407142800111 200 OK 18ms ext-all.js (line 566)
GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-files.js?_dc=1407142800111 200 OK 2ms ext-all.js (line 566)
GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack...a-core/.sencha/package/Boot.js?_dc=1407142800268 200 OK 5ms ext-all.js (line 566)
GET http://hal9000.mib.infn.it/~menasce/extjsLib/packages/sencha-core/src/Ext.js?_dc=1407142800268 200 OK 5ms ext-all.js (line 566)
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GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack.../sencha-core/src/lang/Array.js?_dc=1407142800268 200 OK 8ms ext-all.js (line 566)

First wireless Example

hal9000.mib.infn.it/~menasce/dottorato/esercizi/wireless/htmlFiles/wireless_1.html?theme

Theme: Neptune

RTL

First wireless example

Still a stupid button, but connected to CGI script.

Get data

Firebug - First wireless Example

Console HTML CSS Script DOM Net Cookies Illumin... GFX Dojo Changes css

Watch Stack Breakpoints

New watch expression...

this Window wireless_1.html?theme=neptune

Function function(response)

response Object { request=..., requestId=1, status=200, more... }

arguments [Object { request=..., requestId=1, status=200, more... }, Object { url="http://hal9000.mib.infn....perlFiles /wireless_1.pl", success=function() }]

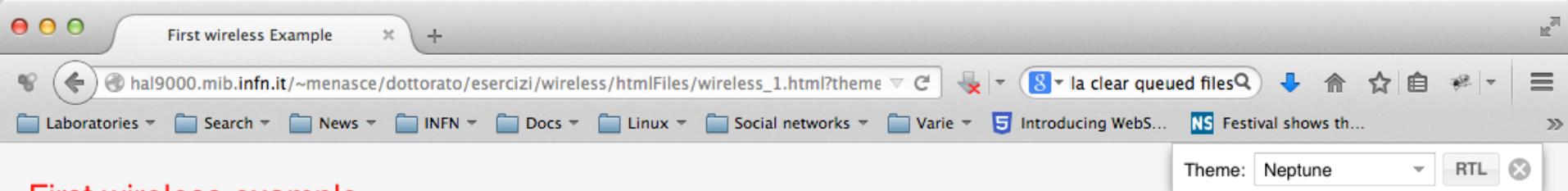
text "Here is some data:
\n0...3
\n24
\n25
\n"

out div#output

Global Scope [Window] Window wireless_1.html?theme=neptune

```
19     'Ext.Button',
20     {
21       text : 'Get data',
22       renderTo: Ext.getBody(),
23       handler : function()
24       {
25         Ext.Ajax.request
26         (
27           {
28             url : theURL,
29             success: function(response)
30             {
31               var text = response.responseText;
32               var out = document.getElementById("output");
33               out.innerHTML = text;
34             }
35           );
36         var out = document.getElementById("output");
37         out.innerHTML = text;
38       );
39     );
```

- ▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-manifest.js?_dc=1407142800111 200 OK 18ms ext-all.js (line 566)
- ▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-files.js?_dc=1407142800111 200 OK 2ms ext-all.js (line 566)
- ▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack...a-core/.sencha/package/Boot.js?_dc=1407142800268 200 OK 5ms ext-all.js (line 566)
- ▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/packages/sencha-core/src/Ext.js?_dc=1407142800268 200 OK 5ms ext-all.js (line 566)
- ▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack.../sencha-core/src/lang/Error.js?_dc=1407142800268 200 OK 2ms ext-all.js (line 566)
- ▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack.../sencha-core/src/lang/Array.js?_dc=1407142800268 200 OK 8ms ext-all.js (line 566)



Firebug - First wireless Example

Script ▾ DOM Net Cookies Illumin... GFX Dojo Changes css ▾

Watch Stack Breakpoints

New watch expression...

▶ this Window wireless_1.html?theme=neptune

▶ Function function(response)

▶ response Object { request=..., requestId=1, status=200, more... }

▶ arguments [Object { request=..., requestId=1, status=200, more... }, Object { url="http://hal9000.mib.infn....perlFiles /wireless_1.pl", success=function() }]

▶ text "Here is some data:
\n0...3
\n24
\n25
\n"

▶ out div#output

▶ Global Scope [Window] Window wireless_1.html?theme=neptune

... mouse right click

```
19     'Ext.Button',
20     {
21       text : 'Get data',
22       renderTo: Ext.getBody(),
23       handler : function()
24       {
25         Ext.Ajax.request
26         (
27           {
28             url : theURL,
29             success: function(response)
30             {
31               var text = response.responseText;
32               var out = document.getElementById('output');
33               out.innerHTML = text;
34             }
35           );
36         }
37       }
38     );
39   );
```

▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-manifest.js?_dc=1407142800111 200 OK 18ms ext-all.js (line 566)

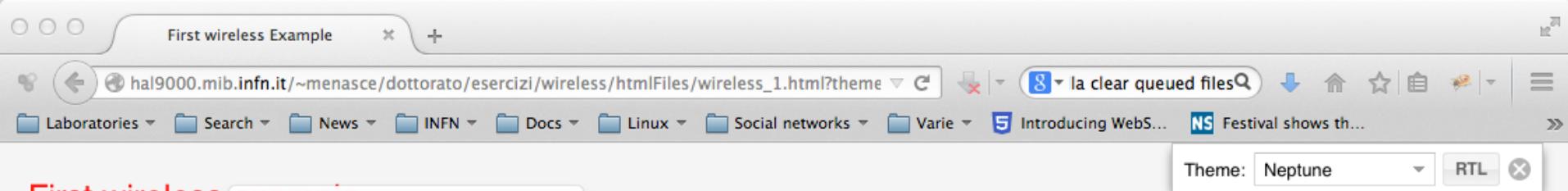
▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-files.js?_dc=1407142800111 200 OK 2ms ext-all.js (line 566)

▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack...a-core/.sencha/package/Boot.js?_dc=1407142800268 200 OK 5ms ext-all.js (line 566)

▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/packages/sencha-core/src/Ext.js?_dc=1407142800268 200 OK 5ms ext-all.js (line 566)

▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack.../sencha-core/src/lang/Error.js?_dc=1407142800268 200 OK 2ms ext-all.js (line 566)

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First wireless

Still a stupid button, but c

Get data

Copy HTML
Copy innerHTML
Copy XPath
Copy Minimal XPath
Copy CSS Path
Paste HTML

Scroll Into View
Copy Source

Add Watch TW

Set Breakpoint
Edit Breakpoint Condition...

Continue F8
Step Over F10
Step Into F11
Step Out Shift+F11

Use in Command Line
Inspect in Illuminations Panel
Inspect in HTML Panel
Inspect in DOM Panel

```
19      'Ex
20      {
21          text
22          render
23          handle
24          {
25              Ext.Ajax.
26              (
27                  url
28                  success
29                  {
30                      v
31                  }
32                  out.innerHTML = text;
33
34
35
36
37
38
39      );
40  }
```

Firebug - First wireless Example

Script DOM Cookies Illumin... GFX Dojo Changes css

Watch Stack Breakpoints

New watch expression...

this Window wireless_1.html?theme=neptune

Function function(response)

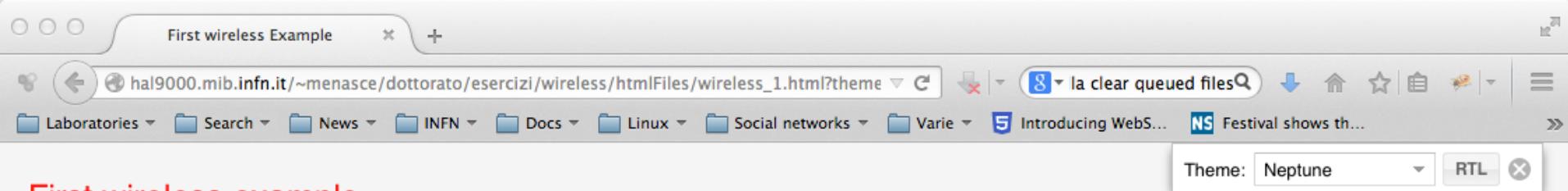
 response Object { request=..., requestId=1, status=200, more... }
 arguments [Object { request=..., requestId=1, status=200, more... }, Object { url="http://hal9000.mib.infn....perlFiles /wireless_1.pl", success=function() }]

 text "Here is some data:
\n0...3
\n24
\n25
\n"

 out div#output

Global Scope [Window] Window wireless_1.html?theme=neptune

```
▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-manifest.js?_dc=1407142800111 200 OK 18ms ext-all.js (line 566)
▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-files.js?_dc=1407142800111 200 OK 2ms ext-all.js (line 566)
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▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack.../sencha-core/src/lang/Array.js?_dc=1407142800268 200 OK 8ms ext-all.js (line 566)
```



Firebug - First wireless Example

Console HTML CSS Script DOM Net Cookies Illumin... GFX Dojo Changes css

all wireless_1.js {} .handler/.success .callback

Watch Stack Breakpoints

New watch expression...

▶ out div#output

▶ this Window wireless_1.html?theme=neptune

▼ Function function(response)

▶ response Object { request={...}, requestId=1, status=200, more... }

▶ arguments [Object { request={...}, requestId=1, status=200, more... }, Object { url="http://hal9000.mib.infn...perlFiles/wireless_1.pl", success=function() }]

▶ text "Here is some data:
\n0...3
\n24
\n25
\n26
\n27
\n28
\n29
\n30
\n31
\n32
\n33
\n34
\n35
\n36
\n37
\n38
\n39
\n40
"

▶ out div#output

▶ Global Scope [Window] Window wireless_1.html?theme=neptune

```
19      'Ext.Button',
20      {
21          text : 'Get data',
22          renderTo: Ext.getBody(),
23          handler : function()
24          {
25              Ext.Ajax.request
26              (
27                  {
28                      url     : theURL,
29                      success: function(response)
30                      {
31                          var text = response.responseText;
32                          var out  = document.getElementById('output');
33                          out.innerHTML = text;
34                      }
35                  }
36              );
37          }
38      );
39  };
40 }
```

▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-manifest.js?_dc=1407142800111 200 OK 18ms ext-all.js (line 566)

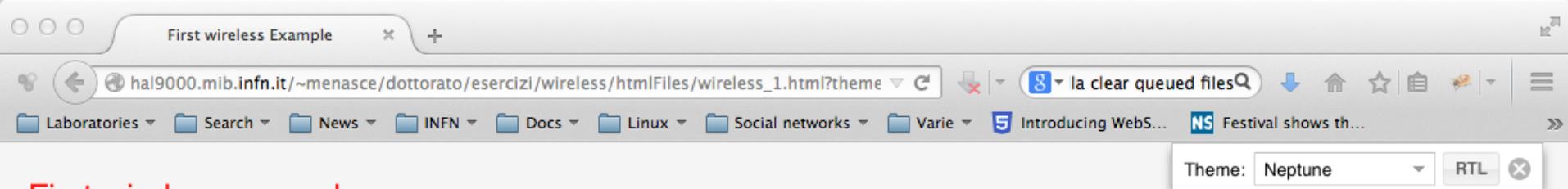
▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-files.js?_dc=1407142800111 200 OK 2ms ext-all.js (line 566)

▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack...a-core/.sencha/package/Boot.js?_dc=1407142800268 200 OK 5ms ext-all.js (line 566)

▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/packages/sencha-core/src/Ext.js?_dc=1407142800268 200 OK 5ms ext-all.js (line 566)

▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack.../sencha-core/src/lang/Error.js?_dc=1407142800268 200 OK 2ms ext-all.js (line 566)

▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack.../sencha-core/src/lang/Array.js?_dc=1407142800268 200 OK 8ms ext-all.js (line 566)



First wireless example

Still a stupid button, but connected to CGI script.

[Get data](#)

Firebug - First wireless Example

Console HTML CSS Script DOM Net Cookies Illumin... GFX Dojo Changes css

all wireless_1.js {} .handler/.success .callback

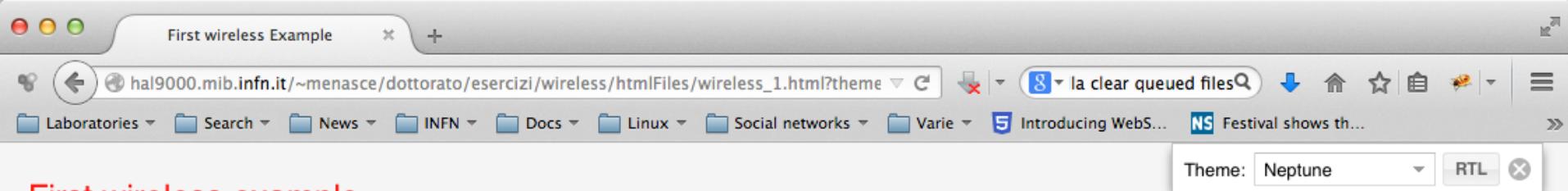
Watch Stack Breakpoints

New watch expression...

out div#output
accessKey ""
accessKeyLabel ""
align ""
► attributes [id="output"]
► baseURI "http://hal9000.mib.infn....ss_1.html?theme=neptun
childElementCount 0
► childNodes NodeList[<TextNode textContent="\n "]
► children HTMLCollection[]
► classList DOMTokenList[]
className ""
clientHeight 484
clientLeft 1
clientTop 1
clientWidth 204

```
19         'Ext.Button',
20     {
21         text : 'Get data',
22         renderTo: Ext.getBody(),
23         handler : function()
24         {
25             Ext.Ajax.request
26             (
27                 {
28                     url : theURL,
29                     success: function(response)
30                     {
31                         var text = response.responseText;
32                         var out = document.getElementById('output');
33                         out.innerHTML = text;
34                     }
35                 );
36             }
37         }
38     );
39 }
```

► GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-manifest.js?_dc=1407142800111 200 OK 18ms ext-all.js (line 566)
► GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-files.js?_dc=1407142800111 200 OK 2ms ext-all.js (line 566)
► GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack...a-core/.sencha/package/Boot.js?_dc=1407142800268 200 OK 5ms ext-all.js (line 566)
► GET http://hal9000.mib.infn.it/~menasce/extjsLib/packages/sencha-core/src/Ext.js?_dc=1407142800268 200 OK 5ms ext-all.js (line 566)
► GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack.../sencha-core/src/lang/Error.js?_dc=1407142800268 200 OK 2ms ext-all.js (line 566)
► GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack.../sencha-core/src/lang/Array.js?_dc=1407142800268 200 OK 8ms ext-all.js (line 566)



First wireless example

Still a stupid button, but connected to CGI script.

[Get data](#)

Firebug - First wireless Example

Console HTML CSS Script DOM Net Cookies Illumin... GFX Dojo Changes css

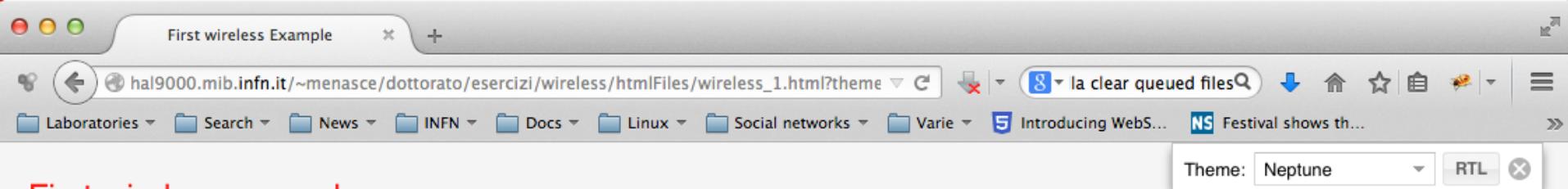
all wireless_1.js {} .handler/.success .callback

Watch Stack Breakpoints

```
19     'Ext.Button',
20     {
21         text : 'Get data',
22         renderTo: Ext.getBody(),
23         handler : function()
24         {
25             Ext.Ajax.request
26             (
27                 {
28                     url : theURL,
29                     success: function(response)
30                     {
31                         var text = response.responseText;
32                         var out = document.getElementById('output');
33                         out.innerHTML = text;
34                     }
35                 );
36             }
37         }
38     );
39 }
```

clientWidth 204
contentEditable "inherit"
contextMenu null
dataset DOMStringMap { }
dir ""
draggable false
firstChild <TextNode textContent="\n "
firstElementChild null
hidden false
id "output"
innerHTML "\n "
isContentEditable false
itemId ""
itemProp { length=0, value="", item=item(), more... }
itemRef { length=0, value="", item=item(), more... }
itemScope false

▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-manifest.js?_dc=1407142800111 200 OK 18ms ext-all.js (line 566)
▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-files.js?_dc=1407142800111 200 OK 2ms ext-all.js (line 566)
▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack...a-core/.sencha/package/Boot.js?_dc=1407142800268 200 OK 5ms ext-all.js (line 566)
▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/packages/sencha-core/src/Ext.js?_dc=1407142800268 200 OK 5ms ext-all.js (line 566)
▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack.../sencha-core/src/lang/Error.js?_dc=1407142800268 200 OK 2ms ext-all.js (line 566)
▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack.../sencha-core/src/lang/Array.js?_dc=1407142800268 200 OK 8ms ext-all.js (line 566)



First wireless example

Still a stupid button, but connected to CGI script.

[Get data](#)

Here is some data:

The screenshot shows the Firebug developer toolbar integrated into a browser window. The toolbar tabs include Console, HTML, CSS, Script, DOM, Net, Cookies, Illumin... (partially visible), GFX, Dojo, Changes, and css. The "Script" tab is active, showing the file "wireless_1.js" with line numbers 19 through 40. The code is as follows:

```
19     'Ext.Button',
20     {
21         text : 'Get data',
22         renderTo: Ext.getBody(),
23         handler: function()
24         {
25             Ext.Ajax.request(
26             {
27                 url : theURL,
28                 success: function(response)
29                 {
30                     var text = response.responseText;
31                     var out = document.getElementById('out');
32                     out.innerHTML = text;
33                 }
34             }
35         );
36     }
37 }
38
39 );
40 }
```

A large blue arrow points from the bottom of the code block towards the Firebug interface. The Firebug sidebar on the right lists various global variables and objects, such as "closed", "console", "constructor", "content", "crypto", "devicePixelRatio", "document", "external", "frameElement", "frames", "fullScreen", "history", and "indexedDB". The "Watch" tab is selected. At the bottom of the Firebug interface, the Network tab shows a list of recent requests:

- ▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-manifest.js?_dc=1407142800111 200 OK 18ms ext-all.js (line 566)
- ▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-files.js?_dc=1407142800111 200 OK 2ms ext-all.js (line 566)
- ▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack...a-core/.sencha/package/Boot.js?_dc=1407142800268 200 OK 5ms ext-all.js (line 566)
- ▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/packages/sencha-core/src/Ext.js?_dc=1407142800268 200 OK 5ms ext-all.js (line 566)
- ▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack.../sencha-core/src/lang/Error.js?_dc=1407142800268 200 OK 2ms ext-all.js (line 566)
- ▶ GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack.../sencha-core/src/lang/Array.js?_dc=1407142800268 200 OK 8ms ext-all.js (line 566)

▶ >

First wireless Example

hal9000.mib.infn.it/~menasce/dottorato/esercizi/wireless/htmlFiles/wireless_1.html?theme

Laboratories Search News INFN Docs Linux Social networks Varie Introducing WebS... Festival shows th...

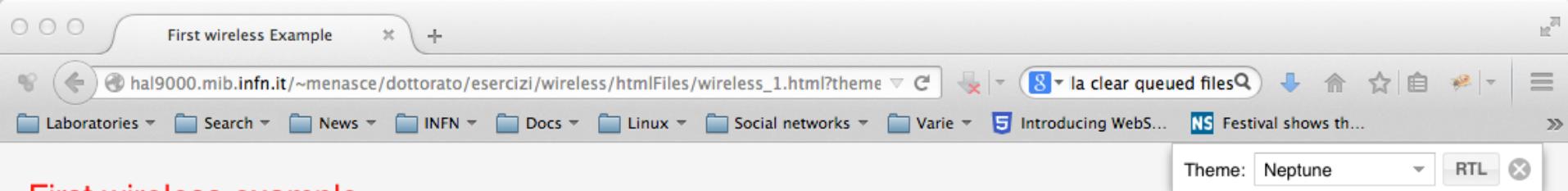
Theme: Neptune RTL

First wireless example

Still a stupid button, but connected to CGI script.

Get data

```
Here is some data:  
0]  
1]  
2]  
3]  
4]  
5]  
6]  
7]  
8]  
9]  
10]  
11]  
12]  
13]  
14]  
15]  
16]  
17]  
18]  
19]  
20]  
21]  
22]  
23]  
24]  
25]
```



Here is some data:

```
0]
1]
2]
3]
4]
5]
6]
7]
8]
9]
10]
11]
12]
13]
14]
15]
16]
17]
18]
19]
20]
21]
22]
23]
24]
25]
```

Firebug - First wireless Example

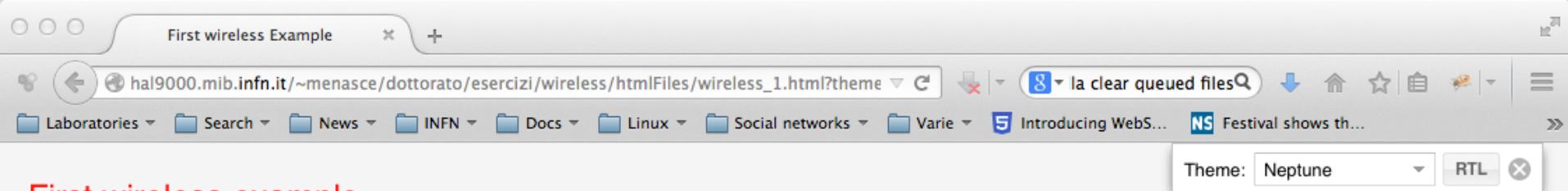
HTML CSS Script DOM Net Coo... Illu... G Style Com... Lay... DOM Eve... ▶

div#output body#docbody-neptune html

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html>
  <head>
    <body id="docbody" class="x-body x-gecko x-mac x-theme-neptune">
      <div id="thisHeader">
        <div id="output">
          <a id="button-1009" class="x-btn x-unselectable x-btn-default-small x-border-box" tabindex="0" unselectable="on" hidefocus="on" componentId="button-1009">
            <div id="ext-element-1" class="x-css-shadow" role="presentation" data-sticky="true" style="position: fixed; z-index: 19000; right: auto; left: 838px; top: 4px; width: 266px; height: 34px; box-shadow: 0px 0px 6px rgb(136, 136, 136); display: block;"></div>
          <div id="options-toolbar" class="x-toolbar x-layer x-toolbar-default x-box-layout-ct x-border-box x-fixed-layer" style="border-width: 1px; right: auto; left: 838px; top: 0px; z-index: 19000;" tabindex="-1">
        </body>
      </html>
```

#output { border-bottom-color: #e33; border-bottom-style: solid; border-bottom-width: 1px; border-image-outset: 0 0 0 0; border-image-repeat: stretch stretch; border-image-slice: 100% 100% 100% 100%; border-image-source: none; border-image-width: 1 1 1 1; border-left-color-ltr-source: physical; border-left-color-rtl-source: physical; border-left-color-value: #e33; border-left-style-ltr-source: physical; border-left-style-rtl-source: physical; border-left-style-value: solid; }

GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-manifest.js?_dc=1407142800111 200 OK 18ms ext-all.js (line 566)
GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-files.js?_dc=1407142800111 200 OK 2ms ext-all.js (line 566)
GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack...a-core/.sencha/package/Boot.js?_dc=1407142800268 200 OK ext-all.js (line 566)
GET http://hal9000.mib.infn.it/~menasce/extjsLib/packages/sencha-core/src/Ext.js?_dc=1407142800268 200 OK ext-all.js (line 566)
GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack.../sencha-core/src/lang/Error.js?_dc=1407142800268 200 OK ext-all.js (line 566)
GET http://hal9000.mib.infn.it/~menasce/extjsLib/pack.../sencha-core/src/lang/Array.js?_dc=1407142800268 200 OK ext-all.js (line 566)



First wireless example

Still a stupid button, but connected to CGI script.

[Get data](#)

Here is some data:

```
0]
1]
2]
3]
4]
5]
6]
7]
8]
9]
10]
11]
12]
13]
14]
15]
16]
17]
18]
19]
20]
21]
22]
23]
24]
25]
```

Firebug – First wireless Example

HTML CSS Script DOM Net Coo... Illu... G

Edit div#output > body#docb...-nept... > html

#output { wireless-neptune (line 13)
-moz-border-bottom-colors: none;
-moz-border-left-colors: none;
-moz-border-right-colors: none;
-moz-border-top-colors: none;
border-bottom-color: #e33;
border-bottom-style: solid;
border-bottom-width: 1px;
border-image-outset: 0 0 0 0;
border-image-repeat: stretch stretch;
border-image-slice: 100% 100% 100% 100%;
border-image-source: none;
border-image-width: 1 1 1 1;
border-left-color-ltr-source: physical;
border-left-color-rtl-source: physical;
border-left-color-value: #e33;
border-left-style-ltr-source: physical;
border-left-style-rtl-source: physical;
border-left-style-value: solid;

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html>
 <head>
 <body id="docbody" class="x-body x-gecko x-mac x-theme-neptune">
 <div id="thisHeader">
 <div id="output">
 Here is some data:

 0]

 1]

 2]

 3]

 4]

 5]

 ...
 </div>
 </body>
 </html>

GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-manifest.js?_dc=1407142800111 200 OK 18ms ext-all.js (line 566)
GET http://hal9000.mib.infn.it/~menasce/extjsLib/bootstrap-files.js?_dc=1407142800111 200 OK 2ms ext-all.js (line 566)
GET http://hal9000.mib.infn.it/~menasce/extjsLib/packages/a-core/.sencha/package/Boot.js?_dc=1407142800268 200 OK ext-all.js (line 566)
GET http://hal9000.mib.infn.it/~menasce/extjsLib/packages/sencha-core/src/Ext.js?_dc=1407142800268 200 OK ext-all.js (line 566)
GET http://hal9000.mib.infn.it/~menasce/extjsLib/packages/sencha-core/src/lang/Error.js?_dc=1407142800268 200 OK ext-all.js (line 566)
GET http://hal9000.mib.infn.it/~menasce/extjsLib/packages/sencha-core/src/lang/Array.js?_dc=1407142800268 200 OK ext-all.js (line 566)

File Edit Search Preferences Shell Macro Windows Help

wireless_1.html wireless_1.js wireless_1.pl /raid2/users/menasce/public_html/dottorato/esercizi/wireless/perlFiles/wireless_1.pl byte 274 of 274 L: 14 C: 0

```
1 #!/usr/bin/perl
2 #
3 # Author: D. Menasce
4 # This script just writes a bunch of numbers on STDOUT
5 #=====
6
7 print("Content-type: text/html\n\n");
8 print("Here is some data:<hr>\n");
9 foreach $i (0 .. 25)
10 {
11   print("$i]<br>\n");
12 }
13
14[
  9 var nodeName    = "http://hal9000.mib.infn.it/";
10 var scriptArea  = "cgi-bin/dottorato/esercizi/wireless/perlFiles/";
11 var scriptName  = "wireless_1.pl";
12 var theURL      = nodeName + scriptArea + scriptName;
13
14 Ext.onReady
15 (
16   function()
17   {
18     Ext.create(
19       'Ext.Button',
20       {
21         text    : 'Get data',
22         renderTo: Ext.getBody(),
23         handler : function()
24         {
25           Ext.Ajax.request
26           (
27             {
28               url    : theURL,
```

Vediamo ora il (banalissimo) codice in perl deputato a produrre i numeri indicati:

File Edit Search Preferences Shell Macro Windows Help

wireless_2.pl wireless_2.js wireless_2.html

/raid2/users/menasce/public_html/dottorato/esercizi/wireless/htmlFiles/wireless_2.html byte 0 of 1529 L: 1 C: 0

```
1<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org
2<html>
3
4<head>
5<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
6<title>First wireless Example</title>
7<link rel="stylesheet" type="text/css" href="../../../../../../extjsLib/examples/shar
8<link rel="stylesheet" type="text/css" href="../../cssFiles/wireless.css"
9<script type="text/javascript" src="../../../../../../extjsLib/examples/shared/includ
10<script type="text/javascript" src="../../../../../../extjsLib/examples/shared/option
11<script type="text/javascript" src=".../jsFiles/wireless_2.js" style="border: 2px solid red; padding: 5px; background-color: #ffffcc; width: fit-content; margin-left: auto; margin-right: auto;">
12<style>
13#output{
14    position : absolute ;
15    display  : block ;
16    top      : 120px ;
17    left     : 10px ;
18    width    : 200px ;
19    height   : 480px ;
20    position : fixed ;
21    border   : 1px solid #e33 ;
22    padding  : 2px ;
23    text-align: left ;
24    font-family: courier ;
25    color    : #00f ;
26}
27</style>
28</head>
29<!-- -----
30<body id="docbody">
31
32<div id="thisHeader">
33<div style="color: red; font-size: 18pt">
34    First wireless example
35</div>
36    Still a stupid button, but connected to CGI script. <br>
```

Nuovo passo avanti, con una versione dotata di una struttura più elegante. Questo file html differisce dalla versione precedente solo per la referenza ad una nuova versione di codice Javascript, wireless_2.html

File Edit Search Preferences Shell Macro Windows Help

wireless_2.js wireless_2.html wireless_2.pl

/raid2/users/menasce/public_html/dottorato/esercizi/wireless/jsFiles/wireless_2.js 1271 bytes

L: --- C: ---

```
1 /*=====
2 Author: D. Menasce
3
4 Another example of a button which is
5 connected to a CGI script: here we have
6 improved the code providing a structure
7 =====*/
8
9 Ext.ns('WL') ; // WS stands for WireLess...
10
11 WL.nodeName = "http://hal9000.mib.infn.it/";
12 WL.scriptArea = "cgi-bin/dottorato/esercizi/wireless/perlFiles/";
13 WL.scriptName = "wireless_2.pl";
14 WL.theURL = WL.nodeName + WL.scriptArea + WL.scriptName ;
15
16 //=====
17 Ext.onReady
18 (
19     function()
20     {
21         var out = document.getElementById("output") ;
22
23         var succFunc = function(response)
24         {
25             out.innerHTML = response.responseText;
26         }
27
28         var failFunc = function(response)
29         {
30             out.innerHTML = "Some error occurred";
31         }
32
33         var ajaxFunc = function()
34         {
35             return Ext.Ajax.request

```

Introduciamo il concetto di **namespace**, una tecnica per incapsulare le variabili in spazi che impediscono la collisione di nomi uguali in diversi contesti

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wireless_2.js wireless_2.html wireless_2.pl

/raid2/users/menasce/public_html/dottorato/esercizi/wireless/jsFiles/wireless_2.js 1263 bytes

L: --- C: ---

```
17 Ext.onReady
18 (
19     function()
20 {
21     var out      = document.getElementById("output") ;
22
23     var succFunc = function(response)
24     {
25         out.innerHTML = response.responseText;
26     }
27     var failFunc = function(response)
28     {
29         out.innerHTML = "Some error occurred";
30     }
31
32     var ajaxFunc = function()
33     {
34         return Ext.Ajax.request
35         (
36             {
37                 url      : WL.theURL,
38                 success: succFunc,
39                 failure: failFunc
40             }
41         );
42     }
43     Ext.create(
44         'Ext.Button',
45         {
46             text      : 'Get data',
47             renderTo: Ext.getBody(),
48             handler : ajaxFunc
49         }
50     );
51 }
```

Vogliamo ora dare un notevole impulso alla funzionalità del codice esaminato e descritto sinora.

Io faremo scrivendo un'applicazione un pochino più complessa ma dall'aspetto molto più elegante e completo: il server sarà, in questa versione, un *daemon* controllato da un apposito bottone, mentre i valori ricevuti dal server verranno automaticamente rappresentati in una tabella (stile *spread-sheet*)



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wireless_3.html - /raid2/users/menasce/public_html/dottorato/esercizi/wireless/htmlFiles/

File Edit Search Preferences Shell Macro Windows Help

wireless_3.js wireless_3.pl wireless_3.html

/raid2/users/menasce/public_html/dottorato/esercizi/wireless/htmlFiles/wireless_3.html byte 1056 of 1056 L: 26 C: 0

```
1 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org
2 <html>
3
4   <head>
5     <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
6     <title>First wireless Example</title>
7     <link rel="stylesheet" type="text/css" href="../../../../../../extjsLib/examples/shared/resources/ext-all.css" />
8     <link rel="stylesheet" type="text/css" href="../../cssFiles/wireless.css" />
9     <script type="text/javascript" src="../../../../../../extjsLib/examples/shared/include-all.js" />
10    <script type="text/javascript" src="../../../../../../extjsLib/examples/shared/options.js" />
11    <script type="text/javascript" src="..../jsFiles/wireless_3.js" />
12  </head>
13  <!-- -----
14  <body id="docbody">
15
16    <div id="thisHeader">
17      <div style="color: red; font-size: 18pt">
18        First wireless example
19      </div>
20      The button is now in a floating window, as well as the output <br>
21    </div>
22
23  </body>
24
25</html>
26
```

Il body del documento non contiene praticamente nulla, tutta la pagina è costruita dinamicamente da **wireless_3.js** (non esiste più alcun **<div>output</div>**, non è necessario)

File Edit Search Preferences Shell Macro Windows Help

wireless_3.js wireless_3.pl wireless_3.html

/raid2/users/menasce/public_html/dottorato/esercizi/wireless/jsFiles/wireless_3.js byte 479 of 3342 L: 19 C: 2

```
1 /*=====
2 Author: D. Menasce
3
4 A very much improved version
5 =====*/
6
7 Ext.ns('WL') ; // WS stands for WireLess...
8
9 WL.nodeName      = "http://hal9000.mib.infn.it/" ;
10 WL.scriptArea   = "cgi-bin/dottorato/esercizi/wireless/perlFiles/" ;
11 WL.scriptName   = "wireless_3.pl" ;
12 WL.theURL       = WL.nodeName + WL.scriptArea + WL.scriptName ;
13
14 //=====
15 Ext.require
16 (
17 [
18 'Ext.data.*',
19 'Ext.grid.*'
20 ]
21 );
22
23 //=====
24 Ext.onReady
25 (
26 function()
27 {
28
29
30
31
32
33
34
35
36
```

I due oggetti che compongono la pagina web e ne rappresentano la funzionalità sono due finestre (*widgets*) contenenti i bottoni di controllo e i risultati ottenuti dal server. Esse a loro volta contengono altri oggetti (menù a tendina ecc...).

Leggiamo quindi lo script a ritroso, partendo dalle ultime parti che stanno in fondo allo script perché necessitano di tutte le definizioni che devono essere istanziate prima di poter essere usate.

File Edit Search Preferences Shell Macro Windows Help

wireless_3.js wireless_3.pl /raid2/users/menasce/public_html/dottorato/esercizi/wireless/jsFiles/wireless_3.js byte 3105 of 3591 L: 137 C: 10

```
97
98
99
100
101
102
103
104
105 var cw = Ext.create
106 (
107     'Ext.window.Window',
108     {
109         title : 'Controls',
110         height : 65
111         width : 128
112         layout : 'anchor'
113         closable: false
114         items : [
115             {
116                 xtype : 'button',
117                 text : 'Clear',
118                 margin : '3 3 3 3',
119                 handler: function()
120                 {
121                     grid.getStore().removeAll();
122                     Ext.Msg.alert(
123                         'Status',
124                         'All data have been cleared.'
125                         ).setPosition(200,200,true);
126                 }
127             }
128         ]
129     }
130
131
132 }
```



The code defines a window configuration for 'Controls'. It uses the 'Ext.window.Window' constructor. The window has a title of 'Controls', a height of 65, and a width of 128. The layout is set to 'anchor'. The window is not closable ('closable: false'). The 'items' array contains a single item, which is a button ('xtype: 'button'') with the text 'Clear', a margin of '3 3 3 3', and a handler function. This function removes all items from a store named 'grid', displays a status message 'All data have been cleared.', and sets its position at (200, 200). The entire window is enclosed in a large red rectangular box.

```
28 Ext.define
29 (
30     'ourDataModel',
31 {
32     extend : 'Ext.data.Model',
33     fields : [
34         {name: 'TimeStamp', type: 'date'},
35         {name: 'x', type: 'float'},
36         {name: 'y', type: 'float'},
37         {name: 'z', type: 'float'},
38         {name: 'code', type: 'string'}
39     ]
40 }
41 );
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64 )
```

10 WL.scriptArea = "cgi-bin/dottorato";
11 WL.scriptName = "wireless_3.pl"
12 WL.theURL = WL.nodeName + WI

```

    },
    proxy: {
        type: 'ajax',
        url: WL.theURL,
        reader: {
            type: 'xml',
            record: 'dataBlock'
        }
    }
}

    listeners: {
        load: function()
        {
            loadMask.hide();
        }
    }
}
```

<dataBlocks>

<dataBlock>

<TimeStamp> 6605.27 </TimeStamp>

<x> 406.44 </x>

<y> -408.65 </y>

<z> 185.45 </z>

<code> bynyux </code>

</dataBlock>

<dataBlock>

<TimeStamp> 2344.20 </TimeStamp>

<x> 499.17 </x>

<y> 390.76 </y>

<z> -206.35 </z>

<code> mmbikp </code>

</dataBlock>

</dataBlocks>

/raid2/users/menasse/public_html/dottorato/esercizi/Wireless/1cFiles/Wireless_3 is byte 3105 of 359

• 137 C: 10

```
97
98     Controls
99
100    Get data Clear
101
102
103
104
105 var cw = Ext.create
106 (
107     'Ext.window.Window',
108     {
109         title : 'Controls',
110         height : 65 ,
111         width : 128 ,
112         layout : 'anchor' ,
113         closable: false ,
114         items : [
115             getData,
116             {
117                 xtype : 'button' ,
118                 text : 'Clear' ,
119                 margin : '3 3 3 3' ,
120                 handler: function()
121                 {
122                     grid.getStore().removeAll();
123                     Ext.Msg.alert(
124                         'Status',
125                         'All data have been cleared.'
126                         .setPosition(200,200,true) ;
127
128             }
129         ]
130     }
131 }
```

The screenshot shows a software interface with a code editor on the left and a results panel on the right. The code editor displays a snippet of Ext JS code for creating a window titled 'Controls'. It contains two buttons: 'Get data' and 'Clear'. The 'Clear' button is highlighted with a red box. The results panel has a header 'Results' and a table with columns: Time Stamp (relative), x, y, z, and Code. Below the table is a status message box titled 'Status' with the message 'All data have been cleared.' and an 'OK' button.

CGI Web Programming

```

28 Ext.define
29 (
30     'ourDataModel',
31 {
32     extend : 'Ext.data.Model',
33     fields : [
34         {name: 'TimeStamp', type: 'float'},
35         {name: 'x', type: 'float'},
36         {name: 'y', type: 'float'},
37         {name: 'z', type: 'float'},
38         {name: 'code', type: 'string'}
39     ]
40 }
41 );

```

```

66 var cols = [
67     {
68         text : "Time Stamp<br>(relative)",
69         dataIndex: "TimeStamp",
70         sortable: true,
71         align: 'right'
72     },
73     {text: "x", flex: 1, dataIndex: 'x', align: 'right'},
74     {text: "y", flex: 1, dataIndex: 'y', align: 'right'},
75     {text: "z", flex: 1, dataIndex: 'z', align: 'right'},
76     {
77         text: "Code", flex: 1, dataIndex: 'code', align: 'right',
78         sortable: true
79     }
80 ];
81

```

```

82 var grid = Ext.create
83 (
84     'Ext.grid.Panel',
85     {
86         store: store,
87         columns: cols
88     }
89 );

```

Results

Time Stamp (relative) ▲	x	y	z	code
89.35	-488.17	134.37	-373.26	tishmc
1068.5	-470.38	-73.72	359.59	mjrwxxy
2060.34	-159.82	66.95	-236.38	aifvuf
2252.35	147.63	446.74	428.93	dchdrs
2344.2	499.17	390.76	-206.35	mmbikp
2734.58	-144.5	225.24	463.69	wwwfqq
2747.24	-305.14	-256.73	415.86	jnifgl
3076.34	-444.08	-57.87	318.86	eukqci
3292.45	-64.23	16.55	247.09	sqimvx
3681.33	341.56	-409.28	198.68	emrjiq
6265.5	-109.23	-66.98	405.41	tbqoxs
6510.97	480.56	470.43	32.09	kdodfh
6569.14	463.65	-72.91	97.31	dulqry
6595.34	-33.94	16.71	-305.77	apocao

Lo **store** lo abbiamo visto prima...

wireless_3.js *wireless_3.pl

/raid2/users/menasce/public_html/dottorato/esercizi/wireless/perlFiles/wireless_3.pl byte 907 of 907 L: 37 C: 0

```
1 #!/usr/bin/perl
2 #
3 # Author: D. Menasce
4 # This script just writes a bunch of numbers on
5 #=====
6 print("Content-type: text/xml\n\n");
7
8 print <<EOB ;
9 <?xml version="1.0" encoding="UTF-8"?>
10
11<!-- This is a payload XML file... -->
12
13<dataBlocks>
14 EOB
15
16 foreach $i ( 0 .. 25 )
17 {
18 my $C = "" ;
19 my $timeStamp = sprintf("%.2f", rand() * 10000) ;
20 my $x = sprintf("%.2f", (rand() - 0.5) * 1000) ;
21 my $y = sprintf("%.2f", (rand() - 0.5) * 1000) ;
22 my $z = sprintf("%.2f", (rand() - 0.5) * 1000) ;
23 foreach $n ( 0 .. 5 ) { $C .= chr(int(rand()*25)+97); }
24 print <<EOB ;
25 <dataBlock>
26 <TimeStamp> $timeStamp </TimeStamp>
27 <x> $x </x>
28 <y> $y </y>
29 <z> $z </z>
30 <code> $C </code>
31 </dataBlock>
32
33 EOB
34 }
35
36 print "</dataBlocks>\n" ;
```

<dataBlocks>

<dataBlock>

<TimeStamp> 6605.27 </TimeStamp>

<x> 406.44 </x>

<y> -408.65 </y>

<z> 185.45 </z>

<code> bynyux </code>

</dataBlock>

<dataBlock>

<TimeStamp> 2344.20 </TimeStamp>

<x> 499.17 </x>

<y> 390.76 </y>

<z> -206.35 </z>

<code> mmbikp </code>

</dataBlock>

</dataBlocks>

Vediamo ora lo script perl che risponde alle richieste Ajax generando dei dati come se si trattasse di un MonteCarlo.

Vediamo ora un secondo esempio, più complesso del precedente, che preveda un *server* intermedio che genera i dati, li piazza in una memoria tampone circolare e risponde in modo **asincrono** a richieste del browser (dell'utente) fornendo i dati in quel momento disponibili nella memoria circolare.



► Mission and origins

► Structure

► INFN in the world

► INFN and italian society

► Three-year Plan

► Research evaluation

Jointly with other institutes

► Consortia and associations

► Labec

► Fondazione CNAO

► Fondazione Bruno Kessler

► Fondazione Ettore Majorana

► GGI | Galileo Galilei Institute

► Centro Enrico Fermi

You are here: Home ▶ THE INSTITUTE ▶ Mission and origins

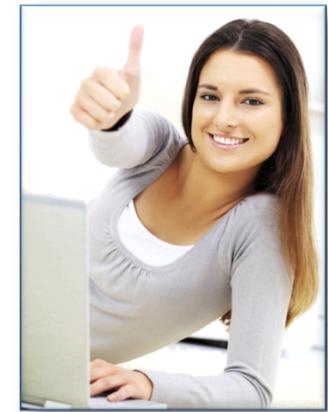
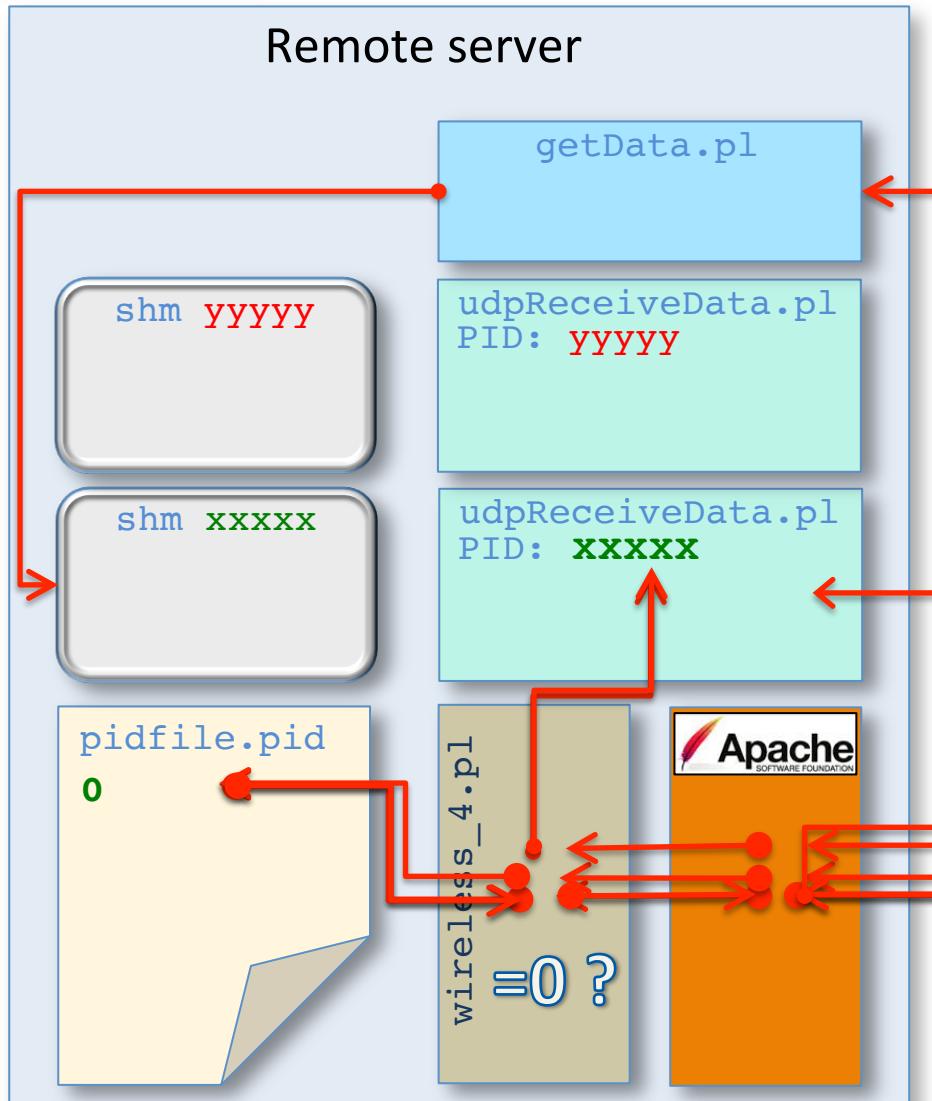
Mission and origins



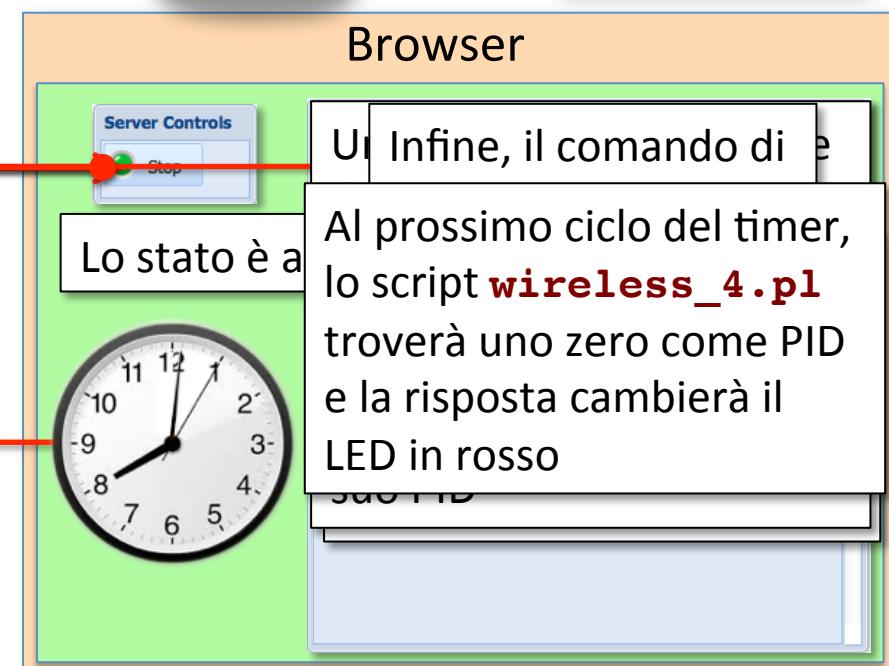
The National Institute for Nuclear Physics (INFN) is the Italian research agency dedicated to the study of the fundamental constituents of matter and the laws that govern them, under the supervision of the Ministry of Education, Universities and Research (MIUR). It conducts theoretical and experimental research in the fields of subnuclear, nuclear and astroparticle physics. All of the INFN's research activities are undertaken within a framework of international competition, in close collaboration with Italian universities on the basis of solid academic partnerships spanning decades. Fundamental research in these areas requires the use of cutting-edge technology and instruments, developed by the INFN at its own laboratories and in collaboration with industries. Groups from the Universities of Rome, Padua, Turin, and Milan founded the INFN on 8th August 1951 to uphold and develop the scientific tradition established during the 1930s by Enrico Fermi and his school, with their theoretical and experimental research in nuclear physics. In the latter half of the 1950s the INFN designed and built the first Italian accelerator, the electron synchrotron developed in Frascati,

Starting del server

Remote server



Browser



```
1 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org
2 <html>
3
4   <head>
5     <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
6     <title>Second wireless Example</title>
7     <link rel="stylesheet" type="text/css" href="../../../../../../extjsLib/examples/shar
8     <link rel="stylesheet" type="text/css" href="../../cssFiles/wireless.css"
9     <script type="text/javascript" src="../../../../../../extjsLib/examples/shared/includ
10    <script type="text/javascript" src="../../../../../../extjsLib/examples/shared/option
11    <script type="text/javascript" src=".../jsFiles/wireless_4.js"
12  </head>
13  <!-- -----
14  <body id="docbody">
15
16    <div id="thisHeader">
17      <div style="color: red; font-size: 18pt">
18        First wireless example
19      </div>
20      First step towards the final goal: an interface to the smart phone<br>
21    </div>
22
23  </body>
24
25</html>
26 !
```

wireless_4.html

Passiamo ora alla versione che effettivamente interagisce con i dati spediti da uno smart phone. Nello svilupparlo riprenderemo concetti appena esposti ed implementati nelle versioni precedenti.

```

1 /*=====
2 Author: D. Menasce
3
4 First step towards the final goal:
5 an interface to the smart phone
6 =====*/
7

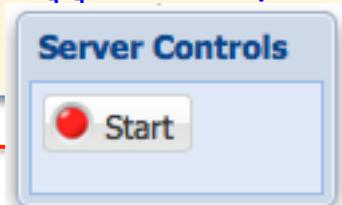
```

```

8 Ext.ns('WL') ; // WS stands for WireLess...
9
10 WL.nodeName = "http://hal9000.mib.infn.it/"
11 WL.scriptArea = "cgi-bin/dottorato/esercizi/wireless/perlFiles/"
12 WL.scriptName = "wireless_4.pl"
13 WL.theURL = WL.nodeName + WL.scriptArea + WL.scriptName
14 WL.thisProcess = parseInt(Math.random()*10000)
15 WL.statusIcon = 'icon-stopped'
16 WL.statusText = 'Start'
17
18 //=====
19 Ext.require
20 (
21 [
22 'Ext.data.*',
23 'Ext.grid.*'
24 ]
25 );
26
27 //=====
28 Ext.onReady
29 (
30 function()
31 {
32 var ajaxR = function(theAction)
33 {
34     Ext.Ajax.request
35     (
36         {

```

Soliti preamboli. Vediamo solo le novità rispetto la precedente...



Anzitutto creeremo un pannello di controllo per gestire il server remoto, quello che ha il compito di ricevere pacchetti UDP e di trasferirli man mano in una shared memory (un daemon senza interazione diretta con il browser client)

```

37             {
38                 Ext.MessageBox.show
39                 (
40                     {
41                         title: 'Control Panel',
42                         msg: 'The process has been started',
43                         buttons: Ext.MessageBox.OK,
44                         icon: 'info'
45                     }
46                 )
47             }
48         }
49     )
50 }
51
52 
```

```

1 .icon-stopped
2 {
3   background-image: url(../images/redLED.png) !important;
4   padding-right: 5px;
5 }

```

```

15 WL.statusIcon = 'icon-stopped'
16 WL.statusText = 'Start' ←

```

```

70 var serverB = Ext.create
71 (
72   'Ext.Button',
73   {
74     text : WL.statusText,
75     margin : '4 4 4 4',
76     iconCls: WL.statusIcon,
77     height : 30,
78     width : 70,
79     handler: function()
80     {
81       ajaxR(this.text);
82     }
83   }
84 );

```



Il testo, e l'icona del LED, sono entrambe delle variabili poiché devono potersi alternare al click dell'utente.

```

174 var cw = Ext.create
175 (
176   'Ext.window.Window',
177   {
178     title : 'Server Controls',
179     height : 74,
180     width : 120,
181     layout : 'vbox',
182     closable: false,
183     items : [
184       serverB ←
185     ]
186   }
187 ).show().setPosition(10,80,true);

```

Questa è la funzione che infine sottomette al server (Apache) la richiesta di generare il processo che ascolta sulla porta e attende i pacchetti UDP: come argomento passiamo il testo corrente del bottone (**Start**)

File Edit Search Preferences Shell Macro Windows Help

wireless_4.html wireless_4.js wireless_4.pl commonStuff.pm decodeForm.pm udpReceiveData.pl udpReceiveData.pm wireless.css /raid2/users/menasce/public_html/dottorato/esercizi/wireless/jsFiles/wireless_4.js byte 1 of 6450 L: 1 C: 1

```
32 var ajaxR = function(theAction)
33 {
34     Ext.Ajax.request
35     (
36         {
37             url : WL.theURL +
38                 '?action=' +
39                 theAction +
40                 '&procID=' +
41                 WL.thisProcess,
42             success: function(response)
43             {
44                 var rText = response.responseText ;
```

Results Get Data Reset Results Get Data Reset

http://mobile.mib.infn.it/cgi-bin/dottorato/esercizi/wireless/perlFiles/wireless_4.pl?action=Start&procID=1956

un'Ajax request sottometta
(ad uno URL) una richiesta
di esecuzione di un
programma ad un server e,
in modo **asincrono**, chiama
poi una di due possibili
funzioni di tipo **call-back**
a seconda dello stato di
ritorno, **success** o **failure**

```
58
59
60 WL.nodeName =
61 WL.scriptArea =
62 WL.scriptName =
63 WL.theURL =
64 WL.thisProcess =
65 WL.statusIcon =
66 WL.statusText =
```

= "http://hal9000.mib.infn.it/"
= "cgi-bin/dottorato/esercizi/wireless/perlFiles/"
= "wireless_4.pl"
= WL.nodeName + WL.scriptArea + WL.scriptName
= parseInt(Math.random()*10000)
= 'icon-stopped'
= 'Start'

File Edit Search Preferences Shell Macro Windows

wireless_4.pl | getData_4.pl | wireless_4.js |

/raid2/users/menasce/public_html/dottorato/esercizi/wireless/jsFiles/wireless_4.js byte 5184 of 6434

```
186 }  
187     ).show().setPosition(10,80,true)  
188  
189 var rw = Ext.create  
190     (  
191         'Ext.window.Window',  
192         {  
193             title      : 'Results',  
194             height     : 390 ,  
195             width      : 450 ,  
196             closable    : false ,  
197             collapsible: true ,  
198             autoScroll  : true ,  
199             items       : grid ,  
200             tbar        : [  
201                 {  
202                     text: 'Get Data',  
203                     margin: '4 4 4 4',  
204                     disabled: true ,  
205                     handler: function()  
206                     {  
207                         loadMask.show(),  
208                         setTimeout(  
209                             function()  
210                             {  
211                                 store.load();  
212                             },  
213                             1000  
214                         );  
215                     }  
216                 }  
217             ]  
218         }  
219     );  
220  
221     var grid = Ext.create  
222         ('Ext.grid.Panel',  
223         {  
224             store: store ,  
225             columns: cols ,  
226             listeners: {  
227                 itemdblclick: function(record, index, item, e)  
228                 {  
229                     var id = record.get('id');  
230                     var lat = record.get('lat');  
231                     var lon = record.get('lon');  
232                     var alt = record.get('alt');  
233                     var date = record.get('date');  
234                     var time = record.get('time');  
235                     var timestamp = record.get('timestamp');  
236                     var x = record.get('x');  
237                     var y = record.get('y');  
238                     var z = record.get('z');  
239  
240                     var latLabel = document.createElement('p');  
241                     latLabel.innerHTML = 'Latitude: ' + lat;  
242                     var lonLabel = document.createElement('p');  
243                     lonLabel.innerHTML = 'Longitude: ' + lon;  
244                     var altLabel = document.createElement('p');  
245                     altLabel.innerHTML = 'Altitude: ' + alt;  
246                     var dateLabel = document.createElement('p');  
247                     dateLabel.innerHTML = 'Date: ' + date;  
248                     var timeLabel = document.createElement('p');  
249                     timeLabel.innerHTML = 'Time: ' + time;  
250                     var timestampLabel = document.createElement('p');  
251                     timestampLabel.innerHTML = 'Timestamp: ' + timestamp;  
252                     var xLabel = document.createElement('p');  
253                     xLabel.innerHTML = 'X: ' + x;  
254                     var yLabel = document.createElement('p');  
255                     yLabel.innerHTML = 'Y: ' + y;  
256                     var zLabel = document.createElement('p');  
257                     zLabel.innerHTML = 'Z: ' + z;  
258  
259                     var container = document.getElementById('info');  
260                     container.innerHTML = '';  
261                     container.appendChild(latLabel);  
262                     container.appendChild(lonLabel);  
263                     container.appendChild(altLabel);  
264                     container.appendChild(dateLabel);  
265                     container.appendChild(timeLabel);  
266                     container.appendChild(timestampLabel);  
267                     container.appendChild(xLabel);  
268                     container.appendChild(yLabel);  
269                     container.appendChild(zLabel);  
270                 }  
271             }  
272         }  
273     );  
274  
275     rw.items.push(grid);  
276  
277     rw.show();  
278  
279     var store = Ext.create  
280         ('Ext.data.Store',  
281         {  
282             fields: ['id', 'date', 'time', 'timestamp', 'lat', 'lon', 'alt', 'x', 'y', 'z'],  
283             data: [{  
284                 id: 1, date: '2012-01-01T00:00:00', time: '00:00:00', timestamp: 7351.59543, lat: 2.050158, lon: 11.558451, alt: 50, x: 0.240819, y: 2.327024, z: 11.696627},  
285                 {id: 2, date: '2012-01-01T00:00:01', time: '00:00:01', timestamp: 57862.92405, lat: 2.237569, lon: 10.264023, alt: 50, x: 0.327702, y: 2.17573, z: 11.170922},  
286                 {id: 3, date: '2012-01-01T00:00:02', time: '00:00:02', timestamp: 41300.50254, lat: 2.157023, lon: 11.729567, alt: 50, x: 0.442149, y: 2.354102, z: 10.052965},  
287                 {id: 4, date: '2012-01-01T00:00:03', time: '00:00:03', timestamp: 67440.50435, lat: 2.185587, lon: 10.857527, alt: 50, x: 0.221098, y: 2.05151, z: 11.792849},  
288                 {id: 5, date: '2012-01-01T00:00:04', time: '00:00:04', timestamp: 74790.4835, lat: 2.144891, lon: 11.281062, alt: 50, x: 0.777964, y: 2.157023, z: 10.137318},  
289                 {id: 6, date: '2012-01-01T00:00:05', time: '00:00:05', timestamp: 30689.40945, lat: 2.32711, lon: 10.14782, alt: 50, x: 0.956151, y: 2.105698, z: 11.447627},  
290                 {id: 7, date: '2012-01-01T00:00:06', time: '00:00:06', timestamp: 54700.7994, lat: 2.125819, lon: 11.792849, alt: 50, x: 0.412577, y: 2.09999, z: 11.447627},  
291                 {id: 8, date: '2012-01-01T00:00:07', time: '00:00:07', timestamp: 3849.63466, lat: 2.32711, lon: 10.137318, alt: 50, x: 0.633381, y: 2.157023, z: 11.729567},  
292                 {id: 9, date: '2012-01-01T00:00:08', time: '00:00:08', timestamp: 71518.59491, lat: 2.17573, lon: 11.170922, alt: 50, x: 0.784447, y: 2.05151, z: 11.696627},  
293                 {id: 10, date: '2012-01-01T00:00:09', time: '00:00:09', timestamp: 78395.75817, lat: 2.185587, lon: 10.857527, alt: 50, x: 0.578431, y: 2.105698, z: 11.792849},  
294                 {id: 11, date: '2012-01-01T00:00:10', time: '00:00:10', timestamp: 28930.07785, lat: 2.157023, lon: 11.729567, alt: 50, x: 0.739238, y: 2.144891, z: 11.281062},  
295                 {id: 12, date: '2012-01-01T00:00:13', time: '00:00:13', timestamp: 83290.94137, lat: 2.050158, lon: 11.558451, alt: 50, x: 0.821494, y: 2.327024, z: 11.696627}],  
296             proxy: {  
297                 type: 'ajax',  
298                 url: 'getData.php',  
299                 reader: {  
300                     type: 'json'  
301                 }  
302             }  
303         }  
304     );  
305  
306     rw.items.push(store);  
307  
308     rw.show();  
309  
310     var button = Ext.create  
311         ('Ext.Button',  
312         {  
313             text: 'Get Data',  
314             margin: '4 4 4 4',  
315             disabled: true ,  
316             handler: function()  
317             {  
318                 loadMask.show(),  
319                 setTimeout(  
320                     function()  
321                     {  
322                         store.load();  
323                     },  
324                     1000  
325                 );  
326             }  
327         }  
328     );  
329  
330     rw.items.push(button);  
331  
332     rw.show();  
333  
334     var button = Ext.create  
335         ('Ext.Button',  
336         {  
337             text: 'Get Data',  
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1271         ('Ext.Button',  
1272         {  
1273             text: 'Get Data',  
1274             margin: '
```

```
[root@webber23 tmp]# ll
total 464
-rw-r--r--. 1 root root 445464 Oct 12 18:13 ExtUtils-MakeMaker-7.10.tar.gz
drwxr-xr-x. 4 guest guest 4096 Aug 7 03:52 Proc-Daemon-0.21
-rw-r--r--. 1 root root 22758 Oct 12 18:10 Proc-Daemon-0.21.tar.gz
[root@webber23 tmp]# tar zxvf ExtUtils-MakeMaker-7.10.tar.gz
ExtUtils-MakeMaker-7.10/
ExtUtils-MakeMaker-7.10/my/
ExtUtils-MakeMaker-7.10/my/bundles.pm
ExtUtils-MakeMaker-7.10/bin/
ExtUtils-MakeMaker-7.10/bin/instmodsh
ExtUtils-MakeMaker-7.10/bundled/
ExtUtils-MakeMaker-7.10/bundled/CPAN-Meta/
ExtUtils-MakeMaker-7.10/bundled/CPAN-Meta/CPAN/
ExtUtils-MakeMaker-7.10/bundled/CPAN-Meta/CPAN/Meta.pm
ExtUtils-MakeMaker-7.10/bundled/CPAN-Meta/CPAN/Meta/
ExtUtils-MakeMaker-7.10/bundled/CPAN-Meta/CPAN/Meta/Prereqs.pm
ExtUtils-MakeMaker-7.10/bundled/CPAN-Meta/CPAN/Meta/Spec.pm
ExtUtils-MakeMaker-7.10/bundled/CPAN-Meta/CPAN/Meta/Converter.pm
ExtUtils-MakeMaker-7.10/bundled/CPAN-Meta/CPAN/Meta/Validator.pm
ExtUtils-MakeMaker-7.10/bundled/CPAN-Meta/CPAN/Meta/Feature.pm
```

```
[root@webber23 tmp]# cd ExtUtils-MakeMaker-7.10/
[root@webber23 ExtUtils-MakeMaker-7.10]# perl Makefile.PL
Using included version of CPAN::Meta (2.120351) because it is not already installed.
Using included version of Parse::CPAN::Meta (1.4405) because it is not already installed.
Using included version of CPAN::Meta::YAML (0.008) because it is not already installed.
Using included version of ExtUtils::Manifest (1.65) because it is not already installed.
Using included version of JSON::PP (2.27203) because it is not already installed.
Using included version of ExtUtils::Install (1.54) because it is not already installed.
Using included version of CPAN::Meta::Requirements (2.127) because it is not already installed.
Checking if your kit is complete...
Looks good
Generating a Unix-style Makefile
Writing Makefile for ExtUtils::MakeMaker
Writing MYMETA.yml and MYMETA.json
[root@webber23 ExtUtils-MakeMaker-7.10]#
```

```
[root@werbber23 ExtUtils-Makemaker-7.10] make
...
...
[root@werbber23 ExtUtils-Makemaker-7.10] make install
...
...
```

<http://search.cpan.org/~akreal/Proc-Daemon-0.21/lib/Proc/Daemon.pod>

```
[root@webber23 tmp]# pwd
/tmp
[root@webber23 tmp]# tar [root@webber23 Proc-Daemon-0.21]# pwd
Proc-Daemon-0.21          /tmp/Proc-Daemon-0.21
Proc-Daemon-0.21/Changes   [root@webber23 Proc-Daemon-0.21]# perl Makefile.PL
Proc-Daemon-0.21/LICENSE  Checking if your kit is complete...
Proc-Daemon-0.21/META.yml Looks good
Proc-Daemon-0.21/MANIFEST Generating a Unix-style Makefile
Proc-Daemon-0.21/README.txt Writing Makefile for Proc::Daemon
Proc-Daemon-0.21/Makefile  Writing MYMETA.yml and MYMETA.json
Proc-Daemon-0.21/t         [root@webber23 Proc-Daemon-0.21]# make
Proc-Daemon-0.21/t         cp lib/Proc/Daemon.pm blib/lib/Proc/Daemon.pm
Proc-Daemon-0.21/t/03_tar  cp lib/Proc/Daemon.pod blib/lib/Proc/Daemon.pod
Proc-Daemon-0.21/t/02_te   Manifying 1 pod document
Proc-Daemon-0.21/t/01_lo   [root@webber23 Proc-Daemon-0.21]# make install
Proc-Daemon-0.21/lib/Pro   Manifying 1 pod document
Proc-Daemon-0.21/lib/Pro   Installing /usr/local/share/perl5/Proc/Daemon.pm
Proc-Daemon-0.21/lib/Pro   Installing /usr/local/share/perl5/Proc/Daemon.pod
[root@webber23 tmp]#      Installing /usr/local/share/man/man3/Proc::Daemon.3pm
                           Appending installation info to /usr/lib64/perl5/perllocal.pod
[root@webber23 Proc-Daemon-0.21]#
```

<http://search.cpan.org/~jwb/Proc-ProcessTable-0.53/ProcessTable.pm>

```
[root@webber23 tmp]# pwd
/tmp
[root@webber23 tmp]# ll
total 540
drwxr-xr-x. 9 guest guest    4096 Oct 12 18:16 ExtUtils-MakeMaker-7.10
-rw-r--r--. 1 root   root  445464 Oct 12 18:13 ExtUtils-MakeMaker-7.10.tar.gz
drwxr-xr-x. 5 guest guest    4096 Oct 12 18:18 Proc-Daemon-0.21
-rw-r--r--. 1 root   root   22758 Oct 12 18:10 Proc-Daemon-0.21.tar.gz
-rw-r--r--. 1 root   root  71060 Oct 12 18:20 Proc-ProcessTable-0.53.tar.gz
[root@webber23 tmp]#
```

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wireless_4.html wireless_4.js wireless_4.pl commonStuff.pm decodeForm.pm udpReceiveData.pl udpReceiveData.pm wireless.css

/raid2/users/menasce/public_html/dottorato/esercizi/wireless/jsFiles/wireless_4.js byte 1 of 6450 L: 1 C: 1

```
32 var ajaxR = function(theAction)
33 {
34     var URL = 'http://127.0.0.1:8080/cgi-bin/status';
35     var on = 'on';
36     var ion = 'ion';
37     var ID = 'ID';
38
39     var rText = response.responseText;
40     if (rText.match(/STATUS: running/))
41     {
42         WL.thisProcess.success(WL.thisProcess,
43             function(response)
44             {
45                 var rText = response.responseText;
46                 if (rText.match(/STATUS: running/))
47                 {
48                     WL.statusIcon = 'icon-started';
49                     serverB.setIconCls(WL.statusIcon);
50                     serverB.setText('Stop');
51                     getDataB.setDisabled(false);
52                 }
53                 else if (rText.match(/STATUS: stopped/))
54                 {
55                     WL.statusIcon = 'icon-stopped';
56                     serverB.setIconCls(WL.statusIcon);
57                     serverB.setText('Start');
58                     getDataB.setDisabled(true);
59                 }
60             failure: function(response)
61             {
62                 var rText = response.responseText;
63                 Ext.Msg.alert('FATAL',
64                             'The server is not responding');
65             }
66         );
67     );
}
```

Queste sono infatti **call-back functions** che vengono chiamate in un momento impreciso, quando arriva la risposta dal server.

Solo quando il server ha risposto e correttamente, l'aspetto dei bottoni viene aggiornato. Se il server era fermo, ora è partito e il bottone diventa '**Stop**'.

Diventa invece '**Start**' se è appena stato fermato....

Torniamo alla funzione **ajaxR**, che viene usata dal bottone '**Server control**' per emettere la richiesta ajax al server...

Ricordiamo, con **AJAX** tutto avviene in modo **ASINCRONO!**

```
121
122 var store = Ext.create
123 (
124     'Ext.data.Store',
125     {
126         model : 'ourDataModel',
127         autoload: false,
128         proxy : {
129             type : 'ajax',
130             url : WL.nodeName
131             reader: {
132                 type : 'xm
133                 record: 'da
134             }
135         }
136         listeners: {
137             load: function()
138             {
139                 loadMask.hide();
140                 if( store.getCount() == 0 )
141                 {
142                     Ext.Msg.alert(
143                         'WARNING',
144                         'No data available'
145                     );
146                 }
147             }
148         }
149     }
150 );
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165 var grid = Ext.create
166 (
167     'Ext.grid.Panel',
168     {
169         store : store,
170         columns : cols
171     }
172 );
```

Ricordiamo che un **grid panel**, per rappresentare i dati, si appoggia ad uno **store** per la loro gestione



Di nuovo, tutto il sistema si regge sul concetto di asincronicità, che rende ovviamente l'analisi del codice e la ricerca di errori molto complessa.

Occorre quindi una richiesta ajax, periodica, che chieda alla macchina remota lo stato corrente del *daemon*.

```
217 var checker = setInterval  
218     (  
219         function()  
220         {  
221             ajaxR('Check') ;  
222         },  
223         1000  
224     ) ;  
  
42 success: function(response)  
43 {  
44     var rText = response.responseText ;  
45     if ( rText.match(/STATUS: running/) )  
46     {  
47         WL.statusIcon = 'icon-started' ;  
48         serverB.setIconCls(WL.statusIcon) ;  
49         serverB.setText ('Stop') ;  
50         getDataB.setDisabled(false) ;  
51     }  
52     else if( rText.match(/STATUS: stopped/) )  
53     {  
54         WL.statusIcon = 'icon-stopped' ;  
55         serverB.setIconCls(WL.statusIcon) ;  
56         serverB.setText ('Start') ;  
57         getDataB.setDisabled(true) ;  
58     }  
59 },
```

set

A seconda dello stato del *daemon*, la funzione **call-back** di **ajaxR** riceverà in una stringa contenente uno dei due mil possibili messaggi di risposta:

- STATUS: running
- STATUS: stopped

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wireless.css wireless_4.html wireless_4.js commonStuff.pm decodeForm.pm getData_4.pl getServerStatus.pl udpReceiveData.pl udpReceiveData.pm *wireless_4.pl /user/gr1/e831/menasce/public_html/esercizi/wireless/perlFiles/wireless_4.pl 1477 bytes L: --- C: ---

```
1 #!/usr/bin/perl
2 #
3 # Author: D. Menasce
4 # This script forks a detached daemon and stores the
5 # resulting PID in a file (shm.txt). The daemon listens
6 # on a specified port for UDP packets and upon receipt
7 # saves the circular buffer it contains into a shared
8 # memory. If the memory does not exist it is created.
9 #=====
10 use commonStuff ←
11 use decodeForm ;
12 use udpReceiveData ;
13 use Cwd ;
14 use Proc::Daemon ;
15 use File::Spec::Functions ;
16
17 print("Content-type: text/html
18
19             &CS::initiali
20 my %fd      = &decodeForm::parserform() ;
21
22 my $pf      = catfile('/tmp', 'pidfile.pid');
23 my $daemon   = Proc::Daemon->new(
24
25
26
27 my $pid      = $daemon->Status($pf);
28
29 if( $fd{'action'} eq 'Start' )
30 {
31 if ( !$pid)
32 {
33 $daemon->Init();
34 print("STATUS: running\n") ;
35 &udpReceiveData::startReceiving($daemon->Status($pf)) ;
36 }
```

Analizziamo ora lo script in **perl**, *server-side*, dedicato a gestire la funzionalità del *daemon*. Suo compito sarà triplice:

- Farlo partire se attualmente fermo.
- Fermarlo se attualmente corrente.
- Verificare lo stato e comunicarlo all'utente

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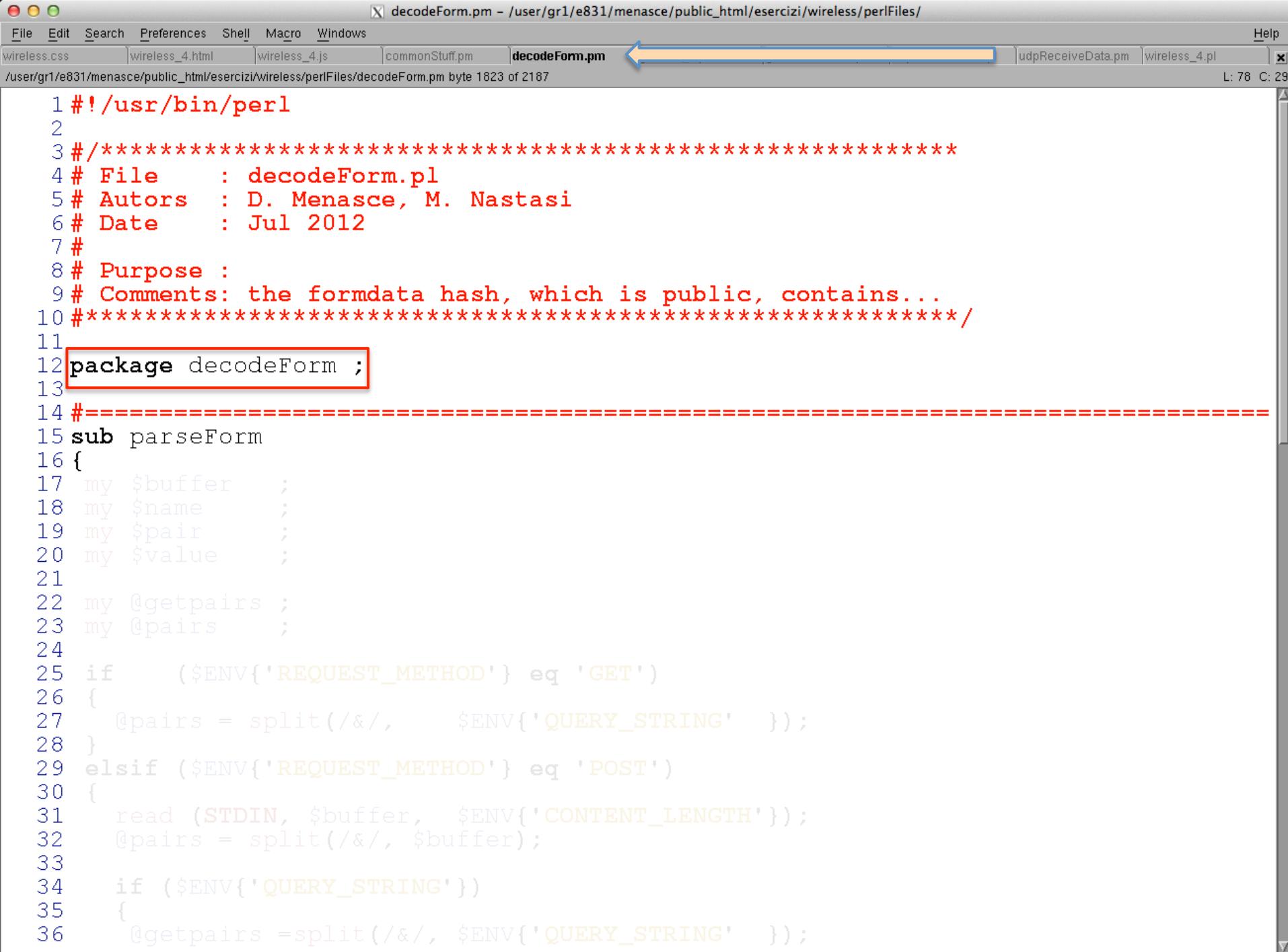
wireless.css wireless_4.html wireless_4.js commonStuff.pm decodeForm.pm getData_4.pl getServerStatus.pl udpReceiveData.pl udpReceiveData.pm wireless_4.pl /user/gr1/e831/menasce/public_html/esercizi/wireless/perlFiles/commonStuff.pm byte 0 of 1078 L: 1 C: 0

```
1 #!/usr/bin/perl -w
2 #
3 # Author: D. Menasce
4 # Common stuff needed in many places of the project, sort of an 'include' file
5 #
6 use strict ;
7 use warnings;
8
9 use IO::Socket ;
10 use File::Spec::Functions;
11
12 package CS;
13
14 #=====
15 sub initialize()
16 {
17     use IPC::SysV qw(IPC_PRIVATE IPC_RMID S_IRUSR IPC_CREAT S_IWUSR);
18     use IPC::SharedMem ;
19
20     eval 'sub IPC_CREAT {0001000}' unless defined &IPC_CREAT;
21     eval 'sub IPC_RMID {0}'      unless defined &IPC_RMID ;
22
23     $CS::dbg      = 0 ;
24     $CS::maxlen   = 22*1000 ;
25     $CS::portno   = 5555 ;
26     $CS::key      = 12345 ;
27     $CS::size     = 200000 ;
28     $CS::loops    = 20 ;
29     $CS::log      = "/tmp/log.txt" ;
30     $CS::shm      = "/tmp/shm.txt" ;
31     @CS::dataArray = () ;
32 }
33
34 #=====
35 return 1 ;
36
```

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wireless.css wireless_4.html wireless_4.js commonStuff.pm decodeForm.pm getData_4.pl getServerStatus.pl udpReceiveData.pl udpReceiveData.pm *wireless_4.pl /user/gr1/e831/menasce/public_html/esercizi/wireless/perlFiles/wireless_4.pl 1477 bytes L: --- C: ---

```
1 #!/usr/bin/perl
2 #
3 # Author: D. Menasce
4 # This script forks a detached daemon and stores the
5 # resulting PID in a file (shm.txt). The daemon listens
6 # on a specified port for UDP packets and upon receipt
7 # saves the circular buffer it contains into a shared
8 # memory. If the memory does not exist it is created.
9 #=====
10 use commonStuff ←
11 use decodeForm ;
12 use udpReceiveData ;
13 use Cwd ;
14 use Proc::Daemon ;
15 use File::Spec::Functions ;
16
17 print("Content-type: text/html\n\n") ;
18
19         &CS::initialize() ; ←
20 my %fd      = &decodeForm::parseForm() ;
21
22 my $pf      = catfile('/tmp', 'pidfile.pid');
23 my $daemon   = Proc::Daemon->new(
24                                     pid_file => $pf,
25                                     work_dir => getcwd()
26                                     );
27 my $pid      = $daemon->Status($pf);
28
29 if( $fd{'action'} eq 'Start' )
30 {
31     if( !$pid)
32     {
33         $daemon->Init();
34         print("STATUS: running\n") ;
35         &udpReceiveData::startReceiving($daemon->Status($pf)) ;
36     }
}
```



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wireless.css wireless_4.html wireless_4.js commonStuff.pm decodeForm.pm getData_4.pl getServerStatus.pl udpReceiveData.pl udpReceiveData.pm wireless_4.pl /user/gr1/e831/menasce/public_html/esercizi/wireless/perlFiles/decodeForm.pm 2187 bytes L: --- C: ---

```
15 sub parseForm
16 {
17     my $buffer ;
18     my $name ;
19     my $pair ;
20     my $value ;
21
22     my @getpairs ;
23     my @pairs ;
24
25     if      ($ENV{'REQUEST_METHOD'} eq 'GET')
26     {
27         @pairs = split(/&/,      $ENV{'QUERY_STRING' } );
28     }
29     elsif   ($ENV{'REQUEST_METHOD'} eq 'POST')
30     {
31         read (STDIN, $buffer,  $ENV{'CONTENT_LENGTH'});
32         @pairs = split(/&/, $buffer);
33
34         if ($ENV{'QUERY_STRING'})
35         {
36             @getpairs =split(/&/, $ENV{'QUERY_STRING' } );
37             push(@pairs,@getpairs);
38         }
39     }
40     else
41     {
42         print <<EOB ;
43
44 FATAL: parseForm() in the decodeForm.pm package issued an 'Unknown Request Method'
45
46         this is because the REQUEST_METHOD was not set to GET or POST for the curr
47
48 EOB
49 }
50
```

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wireless.css wireless_4.html wireless_4.js commonStuff.pm decodeForm.pm getData_4.pl getServerStatus.pl udpReceiveData.pl udpReceiveData.pm *wireless_4.pl /user/gr1/e831/menasce/public_html/esercizi/wireless/perlFiles/wireless_4.pl 1477 bytes L: --- C: ---

```

1 #!/usr/bin/perl
2 #
3 # Author: D. Menasce
4 # This script forks a detached daemon and
5 # resulting PID in a file (shm.txt). The c
6 # on a specified port for UDP packets and
7 # saves the circular buffer it contains into a shared
8 # memory. If the memory does not exist it is created.
9 #=====
10 use commonStuff ;
11 use decodeForm ;
12 use udpReceiveData ;
13 use Cwd ;
14 use Proc::Daemon ;
15 use File::Spec::Functions ;
16
17 print("Content-type: text/html\n\n") ;
18
19             &CS::initialize() ;
20 my %fd      = &decodeForm::parseForm() ;
21
22 my $pf      = catfile('/tmp', 'pidfile.pid') ;
23 my $daemon   = Proc::Daemon->new(
24                                         pid_file => $pf,
25                                         work_dir => getcwd()
26                                         );
27 my $pid      = $daemon->Status($pf) ;
28
29 if( $fd{'action'} eq 'Start' )
30 {
31     if( !$pid )
32     {
33         $daemon->Init();
34         print("STATUS: running\n") ;
35         &udpReceiveData::startReceiving($daemon->Status($pf)) ;
36     }
37 }

```

Il file **/tmp/pidfile.pid** viene usato come storage per contenere il PID del processo deputato a ricevere pacchetti UDP in rete

Il costruttore crea un oggetto di tipo **deamon**, assegnandogli un identificatore (preso dal file **pidfile.pid**) e una zona di lavoro. Il programma a questo punto **prepara** un **deamon** (che in seguito diverrà tale tramite opportuno **fork**).

La prima volta il file non esiste e quindi **\$pf** punterà a **null**.

Il metodo **Status**, dato l'identificatore di un particolare **daemon** restituisce **null** se il demone è inattivo, il suo **PID** altrimenti.

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wireless.css wireless_4.html wireless_4.js commonStuff.pm decodeForm.pm getData_4.pl getServerStatus.pl udpReceiveData.pl udpReceiveData.pm wireless_4.pl /user/gr1/e831/menasce/public_html/esercizi/wireless/perlFiles/wireless_4.pl byte 1476 of 1476 L: 63 C: 0

```
28
29 if( $fd{'action'} eq 'Start' )
30 {
31     if ( !$pid )
32     {
33         $daemon->Init();
34         print("STATUS: running\n");
35         &udpReceiveData::startReceiving($daemon->Status($pf));
36     }
37 }
38
39 if( $fd{'action'} eq 'Stop' )
40 {
41     if ( $pid )
42     {
43         if ( $daemon->Kill_Daemon($pf) )
44         {
45             if( !open(SH, "/tmp/shm.txt" ) ) {print("Cannot open /tmp/shm.txt\n");}
46             my $shmId = <SH>;
47             close(SH);
48             chomp($shmId);
49             system("ipcrm -m $shmId");
50         }
51     }
52 }
53
54 if( $fd{'action'} eq 'Check' )
55 {
56     if ( $pid )
57     {
58         print("STATUS: running\n");
59     } else {
60         print("STATUS: stopped\n");
61     }
62 }
63 }
```

Vediamo ora cosa fa il programma che attende pacchetti UDP spediti dal telefonino e, appena ricevuti li immette in un *buffer circolare* che viene periodicamente aggiornato in una *shared memory*.

Qui si chiede l'interruzione forzata (**kill -9**) del processo *daemon* attivo: per poter cancellare la *shared memory* ad esso associata (creata dal demone stesso all'avvio), si usa il comando di shell **ipcrm** che richiede un **id** (recuperato dal file temporaneo nel quale il demone si è registrato)

File Edit Search Preferences Shell Macro Windows Help

wireless.css wireless_4.html wireless_4.js commonStuff.pm decodeForm.pm getData_4.pl getServerStatus.pl udpReceiveData.pl **udpReceiveData.pm** wireless_4.pl /user/gr1/e831/menasce/public_html/esercizi/wireless/perlFiles/ L: --- C: ---

```
27 #=====
28 sub startReceiving
29 {
30     my $key = shift ;
31
32     &CS::initialize() ;
33
34     if( $key == "" ) { $key = $CS::key; }
35
36     my $shmId = &openShm($key) ;
37
38     if(!open(SH, ">$CS::shm")) { print("Cannot open $CS::shm\n"); }
39     print SH "$shmId";
40     close(SH) ;
41
42     my $sock = IO::Socket::INET->new(
43                                         LocalPort => $CS::portno,
44                                         Proto      => 'udp'
45                                         ) or die "Cannot open socket: $@";
46
47     my $event    = 0 ;
48     my $newmsg   = '' ;
49
50     while ($sock->recv($newmsg, $CS:: maxlen))
51     {
52         my($time,$dev,$x,$y,$z,@other) = split(/, \s+/, $newmsg) ;
53         &data($shmId, "$event $time $x $y $z") ;
54         $event++ ;
55     }
56 }
57
58 #=====
59 sub data <-->
60 {
61     my $shmId = shift ;
62     my $v      = shift ;
```

Lasciamo i dettagli implementativi come esercizi al lettore. Consideriamo un punto soltanto in particolare, la scrittura del buffer circolare in una *shared memory*:

File Edit Search Preferences Shell Macro Windows Help

wireless.css wireless_4.html wireless_4.js commonStuff.pm decodeForm.pm getData_4.pl getServerStatus.pl udpReceiveData.pl **udpReceiveData.pm** wireless_4.pl /user/gr1/e831/menasce/public_html/esercizi/wireless/perlFiles/ L: --- C: ---

```
51 {
52     my ($time,$dev,$x,$y,$z,@other) = split(/, \s+/, $newmsg) ;
53     &data($shmId, "$event $time $x $y $z") ;
54     $event++ ;
55 }
56 }
57
58 #=====
59 sub data
60 {
61     my $shmId = shift ;
62     my $v      = shift ;
63
64     my $l = scalar @CS::dataArray ;
65     if($l >$CS::loops)
66     {
67         shift @CS::dataArray ;
68         push @CS::dataArray, $v ;
69     }
70     else
71     {
72         push @CS::dataArray, $v ;
73     }
74
75     my $message = "" ;
76     foreach $line (@CS::dataArray)
77     {
78         $message .= "$line\n" ;
79         shmwrite( $shmId, $message, 0, $CS::size ) or die "Can't shmwrite: $!";
80         print("Writing into $shmId, $message\n") ;
81     }
82 }
83
84 #=====
85 return 1 ;
86
```

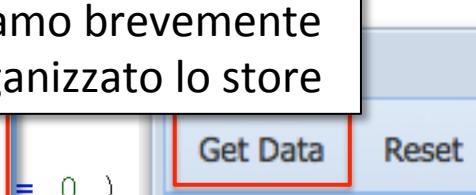
Costruzione di un buffer circolare....

Perfetto, abbiamo visto come gestire la creazione di un job asincrono (un *daemon*) perennemente in attesa di ricevere pacchetti UDP e come questo, una volta attivo, alimenti costantemente una *shared memory* (strutturata internamente come un *buffer circolare*) contenente i dati trasmessi dal telefonino.

Vediamo ora come recuperare i dati dalla *shared memory* e rappresentarli all'interno di una opportuna maschera del browser (come fosse un foglio Excel).

```
135
136     listeners: {
137         load: function()
138     }
139
140     var getDataB = Ext.create
141     (
142         'Ext.Button',
143         {
144             text      : 'Get Data',
145             margin   : '4 4 4 4',
146             disabled: true
147         },
148         {
149             handler : function()
150             {
151                 loadMask.show
152                 setTimeout(
153                     function()
154                     {
155                         // ...
156                     }
157                 )
158             }
159         }
160     );
161 }
```

Rammentiamo brevemente come è organizzato lo store



```
G',  
ords received ' +  
erver'  
sition(250,200,true);
```

Invochiamo un'operazione di caricamento dello **store** eseguito una sola volta: se volessimo un flusso continuo utilizzeremmo **setInterval** (ciclico)

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wireless.css wireless_4.html wireless_4.js commonStuff.pm decodeForm.pm **getData_4.pl** getServerStatus.pl udpReceiveData.pl udpReceiveData.pm wireless_4.pl /user/gr1/e831/menasce/public_html/esercizi/wireless/perlFiles/getData_4.pl 1831 bytes L: --- C: ---

```
1 #!/usr/bin/perl
2 #
3 # Author: D. Menasce
4 # This script reads data from the shared memory and writes a payload
5 # of the data in XML format on STDOUT
6 #-----
7 use commonStuff;
8 use decodeForm ;
9
10 &header          () ;
11 &CS::initialize() ;
12
13 if(!open(SH, "/tmp/pidfile.pid")) {print("Cannot open /tmp/pidfile.pid\n");}
14 my $key = <SH> ;
15 chomp($key) ;
16 close(SH) ;
17 my $id = 0 ;
18 $shmid = shmget( $key, $CS::size, 0777 ) or die "Cannot access shared memory: $!"
19
20 my $var = '' ;
21 if( $shmid != 0 ) # Read its contents into a string
22 {
23     shmread($shmid, $var, 0, $CS::size) or die "Can't shmread: $!";
24 }
25 else
26 {
27     print <<EOB ;
28     <?xml version="1.0" encoding="UTF-8"?>
29     <!-- There was an error with shm -->
30
31 EOB
32 }
33 my @blocks = split(/\n/, $var) ;
34 my $last   = pop @blocks ; # Remove last, empty, block
35
36 print <<EOB ;
```

Possiamo infine dare un'occhiata allo script **getData_4.pl**, attivato dalla richiesta AJAX emessa dall'utente premendo il tasto “Get data”

File Edit Search Preferences Shell Macro Windows Help

wireless.css wireless_4.html wireless_4.js commonStuff.pm decodeForm.pm **getData_4.pl** getServerStatus.pl udpReceiveData.pl udpReceiveData.pm wireless_4.pl /user/gr1/e831/menasce/public_html/esercizi/wireless/perlFiles/getData_4.pl byte 1775 of 1831 L: 71 C: 61

```
36 print <<EOB ;
37 <?xml version="1.0" encoding="UTF-8"?>
38 <!-- Payload with data, just a comment -->
39 <dataBloks>
40 EOB
41 print("blocks: @blocks\n") ;
42 (my $serial, my $timeStamp, my $x, my $y, my $z)
43 #$dataMode = 'fakeData' ;
44 my $c = 0 ;
45 foreach $block (@blocks)
46 # foreach $block (0 .. 25)
47 {
48     ($serial, $timeStamp, $x, $y, $z) = split(/\s+/
49 if($dataMode eq 'fakeData')
50 {
51     $timeStamp = sprintf("%2f", rand()*10000)
52     $x         = sprintf("%2f", rand()*1
53     $y         = sprintf("%2f", 2 + rand()*0.4 )
54     $z         = sprintf("%2f", 10 + rand()*2 )
55 }
56 $timeStamp *= 10 ; # This is to make the abscis
57 print <<EOB ;
58 <dataBlock>
59 <serial>$c</serial>
60 <timeStamp>$timeStamp</timeStamp>
61 <x>$x</x>
62 <y>$y</y>
63 <z>$z</z>
64 </dataBlock>
65 EOB
66 ${c}++ ;
67 }
68
69 print("</dataBloks>\n") ;
70
71 #=====
```

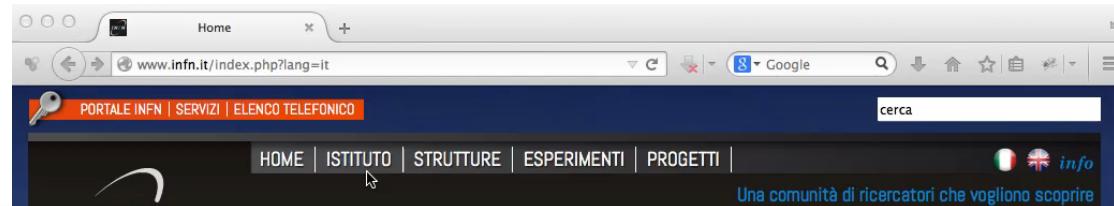
```
<dataBloks>
<dataBlock>
<serial>0</serial>
<timeStamp>87415.9152</timeStamp>
<x>-0.113</x>
<y>-0.098</y>
<z>9.299</z>
</dataBlock>
<dataBlock>
<serial>1</serial>
<timeStamp>87417.5432</timeStamp>
<x>-0.108</x>
<y>-0.103</y>
<z>9.328</z>
</dataBlock>
<dataBlock>
<serial>2</serial>
<timeStamp>87419.2272</timeStamp>
<x>-0.091</x>
<y>-0.110</y>
<z>9.309</z>
</dataBlock>
<dataBlock>
<serial>3</serial>
<timeStamp>87420.8378</timeStamp>
<x>-0.146</x>
<y>-0.120</y>
<z>9.280</z>
</dataBlock>
</dataBloks>
```

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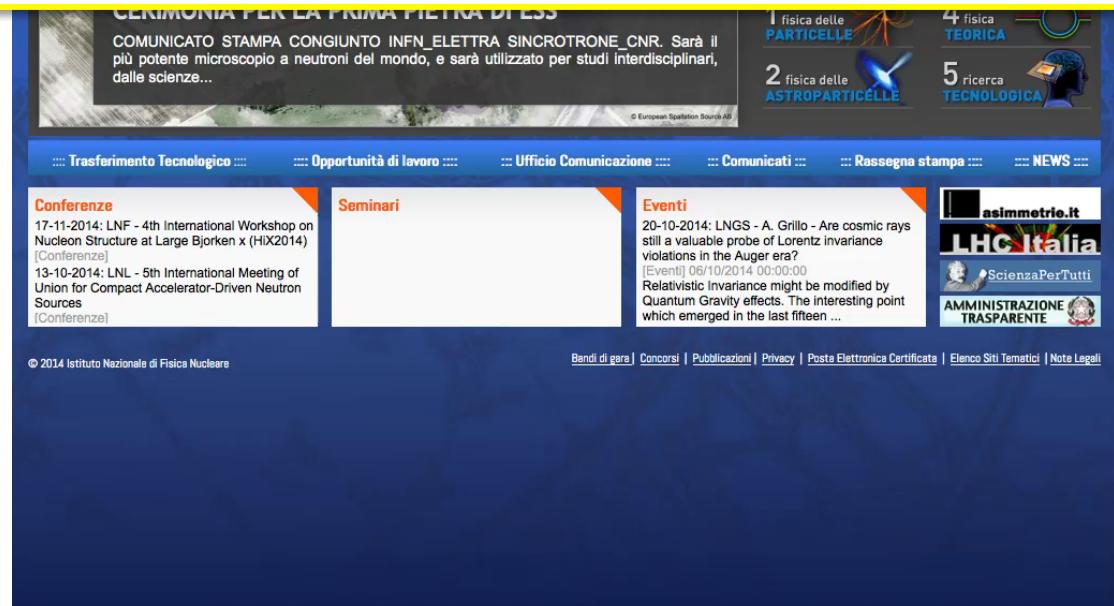
wireless.css wireless_4.html wireless_4.js commonStuff.pm decodeForm.pm getData_4.pl getServerStatus.pl udpReceiveData.pl udpReceiveData.pm wireless_4.pl /user/gr1/e831/menasce/public_html/esercizi/wireless/jsFiles/wireless_4.js 6518 bytes L: --- C: ---

```
236
237 window.onblur = function(e)
238 {
239     if( serverB.getText() == 'Stop' )
240     {
241         Ext.Msg.show(
242         {
243             title : 'The server is still active!',
244             msg   : 'Would you like to stop it ' +
245                     'and leave the current page?',
246             buttons: Ext.Msg.YESNOCANCEL ,
247             icon   : Ext.Msg.QUESTION ,
248             fn     : function(btn)
249             {
250                 if (btn === 'yes')
251                 {
252                     ajaxR('Stop') ;
253                 }
254             }
255         });
256     }
257 }
258 }
259 }
260 }
```

Un'ultima cosa: il *server* che agisce come *daemon*, una volta attivato, rimane eternamente in esecuzione fino a quando non viene fermato esplicitamente dall'utente premendo il bottone “**Stop**”. Poiché un utente può abbandonare la pagina corrente, dimenticandosi di spegnere il *server* (e di cancellare la *shared memory* da esso creata e ad esso permanentemente associata), è utile predisporre un pro-memoria che forzi l'utente a prende una decisione al momento di cambiare pagina.



Passiamo ora alla versione finale dell'esempio, quella in cui sia prevista la rappresentazione grafica, in tempo reale, dei dati trasmessi. Utilizzeremo una classe di oggetti fornita da ExtJs che implementano istogrammi, bar-charts e similari.



The screenshot shows the INFN website homepage. At the top, there is a banner with the text "CERIMONIA PER LA PRIMA PIETRA DI ESS" and "COMUNICATO STAMPA CONGIUNTO INFN_ELETTRA SINCROTRON_CNR. Sarà il più potente microscopio a neutroni del mondo, e sarà utilizzato per studi interdisciplinari, dalle scienze...". Below the banner, there are several navigation links: "Trasferimento Tecnologico", "Opportunità di lavoro", "Ufficio Comunicazione", "Comunicati", "Rassegna stampa", and "NEWS". There are also sections for "Conferenze" (with events like "17-11-2014: LNF - 4th International Workshop on Nucleon Structure at Large Bjorken x (HIX2014) [Conferenze]" and "13-10-2014: LNL - 5th International Meeting of Union for Compact Accelerator-Driven Neutron Sources [Conferenze]"), "Seminari", and "Eventi" (with an event on "20-10-2014: LNGS - A. Grillo - Are cosmic rays still a valuable probe of Lorentz invariance violations in the Auger era? [Eventi] 06/10/2014 00:00:00 Relativistic Invariance might be modified by Quantum Gravity effects. The interesting point which emerged in the last fifteen ..."). On the right side, there are links to "asimmetrie.it", "LHC Italia", "ScienzaPerTutti", and "AMMINISTRAZIONE TRASPARENTE". The footer contains copyright information: "© 2014 Istituto Nazionale di Fisica Nucleare" and links to "Bandi di gara", "Concorsi", "Pubblicazioni", "Privacy", "Posta Elettronica Certificata", "Elenco Siti Tematici", and "Nota Legale".

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wireless.css wireless_5.html wireless_5.js commonStuff.pm decodeForm.pm getData_4.pl getServerStatus.pl udpReceiveData.pl udpReceiveData.pm wireless_4.pl /user/gr1/e831/menasce/public_html/esercizi/wireless/jsFiles/wireless_5.js byte 6342 of 13169 L: 254 C: 31

```
214  
215 var rw = Ext.create  
(  
    'Ext.window.Window',  
    {  
        title : 'Results',  
        height : 390 ,  
        width : 450 ,  
        layout : 'anchor'  
        closable : false ,  
        collapsible: true ,  
        autoScroll : true ,  
        items : grid ,  
        tbar : [  
            getDataB ,  
            graphB ,  
            {  
                text : 'Reset',  
                margin : '4 4 4 4' ,  
                disabled: false ,  
                border : 1 ,  
                anchor : '75%' ,  
                handler : function()  
                {  
                    grid.getStore().removeAll();  
                }  
            }  
        ]  
    }  
).show().setPosition(140,80,true) ;  
  
seri  
size : 7,
```

Results

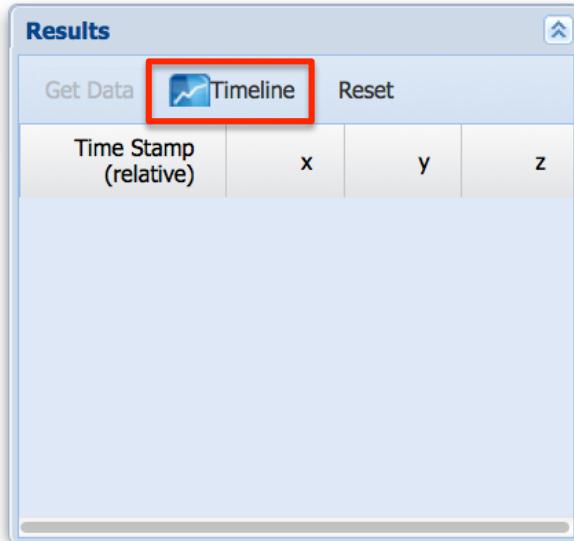
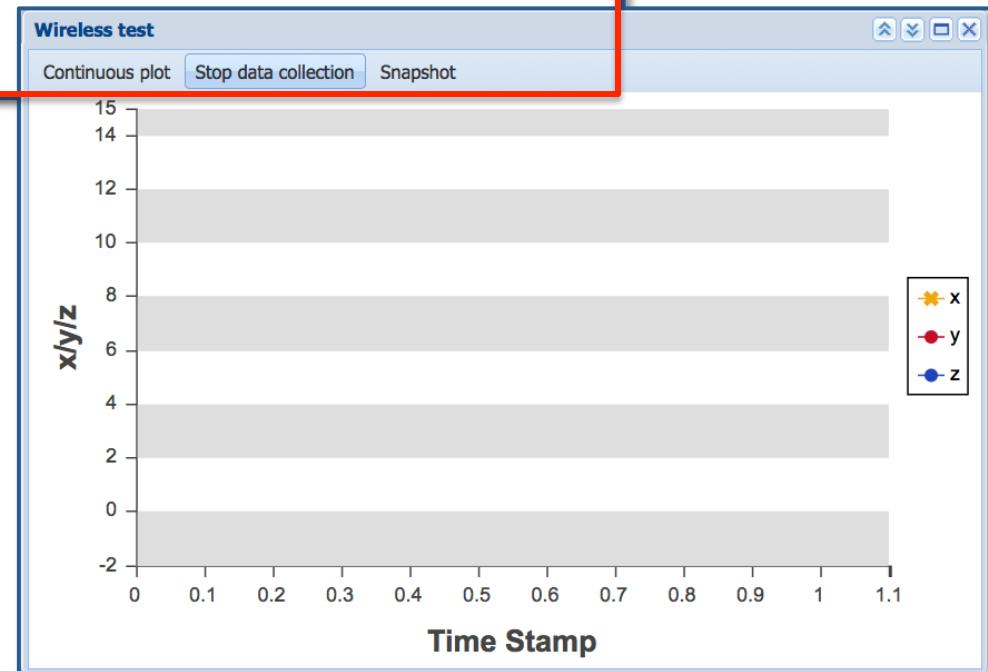
Get Data **Timeline** Reset

Time Stamp (relative)	x	y	z
126426.2146	-0.115	-0.086	9.328
126427.8147	-0.12	-0.103	9.33
126429.4156	-0.117	-0.079	9.313
126431.0182	-0.101	-0.098	9.318
126432.6149	-0.153	-0.065	9.28
126434.2148	-0.12	-0.091	9.347
126435.8463	-0.093	-0.089	9.33
126437.2485	0.120	0.127	0.257

```

94 var graphB = Ext.create
95 (
96     'Ext.Button',
97     {
98         text : 'Timeline',
99         margin : '4 4 4 4' ,
100        iconCls: 'icon-chart',
101        handler: function()
102        {
103            chartWin.show() ;
104            chartWin.setPosition(10,160,true) ;
105            rw.setHeight(75) ;
106        }
107    }
108 );

```



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wireless.css wireless_5.html wireless_5.js commonStuff.pm decodeForm.pm getData_4.pl getServerStatus.pl udpReceiveData.pl udpReceiveData.pm wireless_4.pl /user/gr1/e831/menasce/public_html/esercizi/wireless/jsFiles/wireless_5.js byte 13098 of 13564 L: 478 C: 24

```
435 chartWin = Ext.create
436 (
437     'Ext.window.Window',
438     {
439         title      : 'Wireless test',
440         width     : 580
441         height    : 400
442         minHeight : 400
443         minWidth  : 550
444         maximizable: true
445         closable   : true
446         tools      : chartTools
447         tbar       : chartTBar
448         items      : chartItems,
449         layout     : {type: 'fit'},
450         listeners  : {close: function(){rw.setHeight(390) ;}}
451     }
452 );
453
454 var checker = setInterval
455 (
456     function()
457     {
458         ajaxR('Check') ;
459     },
460     1000
461 );
462
463 var loadMask = new Ext.LoadMask
464 (
465     {
466         msg      : 'P'
467         target  : gr
468         alwaysOnTop: true
469     }
470 );
```

The code defines a window configuration for a 'Wireless test' application. The 'maximizable' property is set to true, which is highlighted with a red box. The resulting window is shown in the screenshot below.

Wireless test

Continuous plot Stop data collection Snapshot

x/y/z

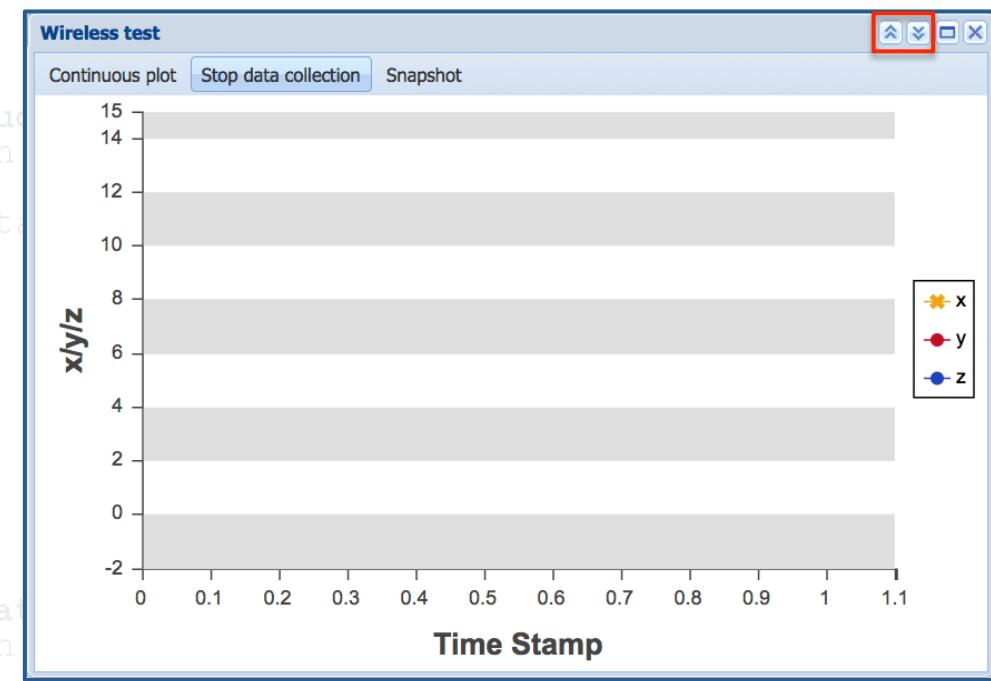
Time Stamp

The screenshot shows a window titled 'Wireless test'. The window has a title bar with standard window controls (minimize, maximize, close). Below the title bar is a toolbar with three buttons: 'Continuous plot', 'Stop data collection', and 'Snapshot'. The main area is a plot with the y-axis labeled 'x/y/z' and the x-axis labeled 'Time Stamp'. The plot displays three horizontal grey bars representing data for 'x', 'y', and 'z' over a timestamp from 0 to 1.1. A legend on the right identifies the series: 'x' (yellow star), 'y' (red circle), and 'z' (blue circle).

```

334
335 var chartTools = [
336   {
337     type : 'up',
338     callback: function()
339     {
340       chartWin.expand() ;
341     }
342   },
343   {
344     type : 'down',
345     callback: function()
346     {
347       chartWin.collapse() ;
348     }
349   }
350 ];
351
352 var chartTBar = [
353   {
354     text : 'Continuous',
355     handler: function()
356     {
357       contData();
358     }
359   },
360   {
361     text : 'Stop data',
362     handler: function()
363     {
364       stopData();
365     }
366   },
367   {
368     text : 'Stop data',
369     handler: function()
370     {

```



File Edit Search Preferences Shell Macro Windows Help

wireless.css wireless_5.html wireless_5.js commonStuff.pm decodeForm.pm getData_4.pl getServerStatus.pl udpReceiveData.pl udpReceiveData.pm wireless_4.pl /user/gr1/e831/menasce/public_html/esercizi/wireless/jsFiles/wireless_5.js 13564 bytes L: --- C: ---

```
352 var chartTBar = [
```

```
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367 {
368   text : 'Stop data collection'
369   handler: function()
370   {
371     clearInterval(timer)
372   }
373 }
374 {
375   xtype : 'button'
376   text : 'Stop data collection'
377   disabled : false
378   handler : function()
379   {
380     clearInterval(timer)
381     chartTBar[0].clear();
382     chartTBar[1].clear();
383     chartTBar[2].clear();
384     chartTBar[3].clear();
385     chartTBar[4].clear();
386     chartTBar[5].clear();
387   }
388 }
```

Wireless test

Continuous plot Stop data collection Snapshot

x/y/z

Time Stamp

File Edit Search Preferences Shell Macro Windows Help

wireless.css wireless_5.html wireless_5.js commonStuff.pm decodeForm.pm getData_4.pl getServerStatus.pl udpReceiveData.pl udpReceiveData.pm wireless_4.pl /user/gr1/e831/menasce/public_html/esercizi/wireless/jsFiles/wireless_5.js byte 12596 of 13406 L: 458 C: 0

```

415 var chartItems = [
416   {
417     xtype      : 'chart'
418     style      : 'background:#edd'
419     itemId    : 'chartCmp'
420     shadow    : true
421     store      : store
422     animate   : true
423     theme     : 'Category1'
424     background: {fill: '#ffffff'}
425     legend    : {position: 'right'}
426     axes      : chartAxes
427     series    : series
428   }
429 ]
430
431 chartWin = Ext.create
432 (
433   'Ext.window.Window',
434   {
435     title      : 'Wireless'
436     width     : 580
437     height    : 400
438     minHeight : 400
439     minWidth  : 550
440     maximizable: true
441     closable   : true
442     tools     : chartTool
443     tbar       : chartTBar
444     items      : chartItem
445     layout     : {type: 'f'}
446     listeners  : {close: f}
447   }
448 );
449
450 var checker = setInterval

```

wireless_5.js - /user/gr1/e831/menasce/public_html/esercizi/wireless/jsFiles/

File Edit Search Preferences Shell Macro Windows Help

wireless.css wireless_5.html wireless_5.js commonStuff.pm decodeForm.pm getData_4.pl getServerStatus.pl udpReceiveData.pl udpReceiveData.pm wireless_4.pl

/user/gr1/e831/menasce/public_html/esercizi/wireless/jsFiles/wireless_5.js 13406 bytes L: --- C: ---

```
391 var chartAxes = [
```

```
392 {
```

```
393   title : 'x/y/z',
394   type : 'Numeric',
395   position : 'left',
396   fields : ['x','y','z'],
397   grid : {
398     odd: {
399       fill : '#dedede',
400       stroke : '#ddd',
401       'stroke-width' : 0.5
402     }
403   },
404   minimum : -2,
405   maximum : 15
406 },
407 {
408   title : 'T',
409   type : 'Numeric',
410   position : 'bottom',
411   fields : ['t'],
412 }
```

```
413 ];
```

```
414 
```

```
415 var chartItems = [
```

```
416 {
417   xtype : 'chart',
418   style : 'background-color: #f0f0f0; border: 1px solid #ccc; padding: 10px;',
419   itemId : 'chart',
420   shadow : true,
421   store : 'store',
422   animate : true,
423   theme : 'Category',
424   background : {fill : '#fff', pos : [0, 0], size : [100, 100]},
425   legend : {
426     axes : [
427       {
428         title : 'x/y/z',
429         type : 'Numeric',
430         position : 'left',
431         fields : ['x','y','z'],
432         grid : {
433           odd: {
434             fill : '#dedede',
435             stroke : '#ddd',
436             'stroke-width' : 0.5
437           }
438         },
439         minimum : -2,
440         maximum : 15
441       },
442       {
443         title : 'T',
444         type : 'Numeric',
445         position : 'bottom',
446         fields : ['t'],
447       }
448     ]
449   }
450 }
```

Wireless test

Continuous plot Stop data collection Snapshot

x/y/z

Time Stamp

x y z

File Edit Search Preferences Shell Macro Windows Help

wireless.css wireless_5.html wireless_5.js commonStuff.pm decodeForm.pm getData_4.pl getServerStatus.pl udpReceiveData.pl udpReceiveData.pm wireless_4.pl /user/gr1/e831/menasce/public_html/esercizi/wireless/jsFiles/wireless_5.js byte 12596 of 13406 L: 458 C: 0

```
415 var chartItems = [
416   {
417     xtype      : 'chart'
418     style      : 'background:#edd'
419     itemId    : 'chartCmp'
420     shadow    : true
421     store      : store
422     animate   : true
423     theme     : 'Category1'
424     background: {fill: '#ffffff'}
425     legend    : {position: 'right'}
426     axes      : chartAxes
427     series    : series
428   }
429 ];
430
431 chartWin = Ext.create
432 (
433   'Ext.window.Window',
434   {
435     title      : 'Wireless'
436     width     : 580
437     height    : 400
438     minHeight : 400
439     minWidth  : 550
440     maximizable: true
441     closable   : true
442     tools      : chartTool
443     tbar       : chartTBar
444     items      : chartItem
445     layout     : {type: 'f'}
446     listeners  : {close: f}
447   }
448 );
449
450 var checker = setInterval
```

Wireless test

Continuous plot Stop data collection Snapshot

x/y/z

Time Stamp

x y z

wireless_5.js - /user/gr1/e831/menasce/public_html/esercizi/wireless/jsFiles/

File Edit Search Preferences Shell Macro Windows Help

wireless.css wireless_5.html wireless_5.js commonStuff.pm decodeForm.pm getData_4.pl getServerStatus.pl udpReceiveData.pl udpReceiveData.pm wireless_4.pl

/user/gr1/e831/menasce/public_html/esercizi/wireless/jsFiles/wireless_5.js 13406 bytes L: --- C: ---

```
245 series = [
246 {
247     type : 'line',
248     highlight : {
249         size : 7,
250         radius: 7
251     },
252     axis : 'left',
253     xField : 'timeStamp',
254     yField : 'x',
255     tips : {
256         trackMouse: true,
257         width : 150 ,
258         height : 45 ,
259         renderer : function(storeItem, item)
260         {
261             s = 'Time: ' + storeItem.get('timeStamp')
262             this.setTitle(s)
263             s = 'x: ' + storeItem.get('x')
264             this.update (s);
265         }
266     },
267     markerConfig: {
268         type : 'cross',
269         size : 4,
270         radius : 4,
271         'stroke-width': 0
272     }
273 },
274 {
275     type : 'line',
276     highlight : {
277         size : 7,
278         radius: 7
279     },
280     axis : 'left',
```

Stessa cosa per le righe corrispondenti alle misure di **y** e di **z**.

```
450 var checker = setInterval
451 (
452     function()
453     {
454         ajaxR('Check') ;
455     }
456
457     148 var store = Ext.create
458     (
459         'Ext.data.Store',
460         {
461             model : 'ourDataModel',
462             autoLoad: false,
463             proxy : {
464                 type : 'ajax',
465                 url : WL.nodeName + WL.scriptArea + 'getData_4.p
466                 reader: {
467                     type : 'xml',
468                     record: 'dataBlock'
469                 }
470             },
471             listeners: {
472                 load: function()
473                 {
474                     loadMask.hide() ;
475                     if( store.getCount() == 0 )
476                     {
477                         Ext.Msg.alert(
478                             'WARNING',
479                             'No records received ' +
480                             'from server'
481                             ) .setPosition(250,200,true);
482                     }
483                 }
484             }
485         }
486     );
487 
```

Fine terza parte