# str2double (557459 calls, 40.567 sec)

*Generated 26-Sep-2014 11:49:16 using cpu time.*
function in file C:\Program Files\MATLAB\R2012b\toolbox\matlab\strfun\str2double.m
Copy to new window for comparing multiple runs

Refresh

Show parent functions  Show busy lines  Show child functions
Show Code Analyzer results  Show file coverage  Show function listing

**Parents** (calling functions)

| Function Name | Function Type | Calls |
|---|---|---|
| mlImport | function | 557453 |
| stringread | function | 6 |

**Lines where the most time was spent**

| Line Number | Code | Calls | Total Time | % Time |
|---|---|---|---|---|
| 35 | `[a,count,errmsg,nextindex] = s...` | 557459 | 22.534 s | 55.5% |
| 32 | `if ischar(s)` | 557459 | 4.709 s | 11.6% |
| 36 | `if count == 1 && isemp...` | 557459 | 3.891 s | 9.6% |
| 38 | `return;` | 557144 | 2.470 s | 6.1% |
| 37 | `x = a;` | 557144 | 1.542 s | 3.8% |
| All other lines | | | 5.419 s | 13.4% |
| Totals | | | 40.567 s | 100% |

**Children** (called functions)
No children

**Code Analyzer results**
No Code Analyzer messages.

**Coverage results**
Show coverage for parent directory

| Time Plot |
| --- |
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| | |
|---|---|
| Total lines in function | 215 |
| Non-code lines (comments, blank lines) | 61 |
| Code lines (lines that can run) | 154 |
| Code lines that did run | 30 |
| Code lines that did not run | 124 |
| Coverage (did run/can run) | 19.48 % |

**Function listing**

Color highlight code according to time

```
time    calls  line
                 1 function x = str2double(s)
                 2 %STR2DOUBLE Convert string to double precision va
                 3 %   X = STR2DOUBLE(S) converts the string S, whic
                 4 %   ASCII character representation of a real or c
                 5 %   to MATLAB's double representation.  The strin
                 6 %   a comma (thousands separator), a decimal poin
                 7 %   an 'e' preceding a power of 10 scale factor,
                 8 %   a complex unit.
                 9 %
                10 %   If the string S does not represent a valid sc
                11 %   returns NaN.
                12 %
                13 %   X = STR2DOUBLE(C) converts the strings in the
                14 %   to double.  The matrix X returned will be the
                15 %   be returned for any cell which is not a strin
                16 %   scalar value. NaN will be returned for indivi
                17 %   cell arrays.
                18 %
                19 %   Examples
                20 %      str2double('123.45e7')
                21 %      str2double('123 + 45i')
                22 %      str2double('3.14159')
                23 %      str2double('2.7i - 3.14')
                24 %      str2double({'2.71' '3.1415'})
                25 %      str2double('1,200.34')
                26 %
                27 %   See also STR2NUM, NUM2STR, HEX2NUM, CHAR.
                28
                29 %   Copyright 1984-2007 The MathWorks, Inc.
                30 %   $Revision: 1.10.4.10 $  $Date: 2011/12/16 16:
                31
4.71   557459    32 if ischar(s)
                33
```

```
                    34      % Try to read simple case of something like 5
 22.53    557459    35      [a,count,errmsg,nextindex] = sscanf(s,'%f',1)
  3.89    557459    36      if count == 1 && isempty(errmsg) && nextindex
  1.54    557144    37          x = a;
  2.47    557144    38          return;
                    39      end
                    40
           315      41      s = deblank(s);
                    42      % Remove any commas so that numbers formatted
                    43      % handled.
           315      44      s(s == ',')= [];
           315      45      lenS = numel(s); %get len again since it has
                    46
                    47      % Try to get 123, 123i, 123i + 45, or 123i -
  0.03      315      48      [a,count,errmsg,nextindex] = sscanf(s,'%f %1[
                    49      % simlest case is a double
  0.02      315      50      if count == 1 && isempty(errmsg) && nextindex
                    51          x = a;
                    52          return;
                    53      end
                    54      % now deal with complex
           315      55      if isempty(errmsg) && nextindex > lenS
                    56         if count==2
                    57              x = a(1)*1i;
                    58          elseif count==4
                    59              sign = (a(3)=='+')*2 - 1;
                    60              x = a(1)*1i + sign*a(4);
                    61          else
                    62              x = NaN;
                    63          end
                    64          return
                    65      end
                    66
                    67      % Try to get 123 + 23i or 123 - 23i
  0.03      315      68      [a,count,errmsg,nextindex] = sscanf(s,'%f %1[
           315      69      if isempty(errmsg) && nextindex > lenS
                    70          if count==4
                    71              sign = (a(2)=='+')*2 - 1;
                    72              x = a(1) + sign*a(3)*1i;
                    73          else
                    74              x = NaN;
                    75          end
                    76          return
                    77      end
                    78
                    79      % Try to get i, i + 45, or i - 45
  0.06      315      80      [a,count,errmsg,nextindex] = sscanf(s,'%1[ij]
           315      81      if isempty(errmsg) && nextindex > lenS
                    82          if count==1
```

```
                83              x = 1i;
                84          elseif count==3
                85              sign = (a(2)=='+')*2 - 1;
                86              x = 1i + sign*a(3);
                87          else
                88              x = NaN;
                89          end
                90          return
                91      end
                92
                93      % Try to get 123 + i or 123 - i
0.02       315   94      [a,count,errmsg,nextindex] = sscanf(s,'%f %1[
           315   95      if isempty(errmsg) && nextindex > lenS
                96          if count==1
                97              x = a(1);
                98          elseif count==3
                99              sign = (a(2)=='+')*2 - 1;
               100              x = a(1) + sign*1i;
               101          else
               102              x = NaN;
               103          end
               104          return
               105      end
               106
               107      % Try to get -i, -i + 45, or -i - 45
0.03       315  108      [a,count,errmsg,nextindex] = sscanf(s,'%1[+-]
           315  109      if isempty(errmsg) && nextindex > lenS
               110          if count==2
               111              sign = (a(1)=='+')*2 - 1;
               112              x = sign*1i;
               113          elseif count==4
               114              sign1 = (a(1)=='+')*2 - 1;
               115              sign2 = (a(3)=='+')*2 - 1;
               116              x = sign1*1i + sign2*a(4);
               117          else
               118              x = NaN;
               119          end
               120          return
               121      end
               122
               123      % Try to get 123 + 23*i or 123 - 23*i
0.03       315  124      [a,count,errmsg,nextindex] = sscanf(s,'%f %1[
           315  125      if isempty(errmsg) && nextindex > lenS
               126          if count==5
               127              sign = (a(2)=='+')*2 - 1;
               128              x = a(1) + sign*a(3)*1i;
               129          else
               130              x = NaN;
               131          end
```

```
                132          return
                133      end
                134
                135      % Try to get 123*i, 123*i + 45, or 123*i - 45
0.02       315  136      [a,count,errmsg,nextindex] = sscanf(s,'%f %1[
0.02       315  137      if isempty(errmsg) && nextindex > lenS
                138          if count==1
                139              x = a;
                140          elseif count==3
                141              x = a(1)*1i;
                142          elseif count==5
                143              sign = (a(4)=='+')*2 - 1;
                144              x = a(1)*1i + sign*a(5);
                145          else
                146              x = NaN;
                147          end
                148          return
                149      end
                150
                151      % Try to get i*123 + 45 or i*123 - 45
0.02       315  152      [a,count,errmsg,nextindex] = sscanf(s,'%1[ij]
           315  153      if isempty(errmsg) && nextindex > lenS
                154          if count==1
                155              x = 1i;
                156          elseif count==3
                157              x = 1i*a(3);
                158          elseif count==5
                159              sign = (a(4)=='+')*2 - 1;
                160              x = 1i*a(3) + sign*a(5);
                161          else
                162              x = NaN;
                163          end
                164          return
                165      end
                166
                167      % Try to get -i*123 + 45 or -i*123 - 45
0.02       315  168      [a,count,errmsg,nextindex] = sscanf(s,'%1[+-]
           315  169      if isempty(errmsg) && nextindex > lenS
                170          if count==2
                171              sign = (a(1)=='+')*2 - 1;
                172              x = sign*1i;
                173          elseif count==4
                174              sign = (a(1)=='+')*2 - 1;
                175              x = sign*1i*a(4);
                176          elseif count==6
                177              sign1 = (a(1)=='+')*2 - 1;
                178              sign2 = (a(5)=='+')*2 - 1;
                179              x = sign1*1i*a(4) + sign2*a(6);
                180          else
```

```
                181             x = NaN;
                182         end
                183         return
                184     end
                185
                186     % Try to get 123 + i*45 or 123 - i*45
0.05       315  187     [a,count,errmsg,nextindex] = sscanf(s,'%f %1[
           315  188     if isempty(errmsg) && nextindex > lenS
                189         if count==5
                190             sign = (a(2)=='+')*2 - 1;
                191             x = a(1) + sign*1i*a(5);
                192         else
                193             x = NaN;
                194         end
                195         return
                196     end
                197
                198     % None of the above cases, but s still is a c
0.02       315  199     x = NaN;
                200
                201 elseif ~isempty(s) && iscellstr(s)
                202     x = cellfun(@str2double, s);
                203 elseif iscell(s)
                204  x = [];
                205     for k=numel(s):-1:1,
                206   if iscell(s{k})
                207    x(k) = NaN;
                208   else
                209    x(k) = str2double(s{k});
                210   end
                211     end
                212     x = reshape(x,size(s));
                213 else
                214     x = NaN;
                215 end
```