

## Limits — Limits and memory utilization

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## Description

Mata imposes limits, but those limits are of little importance compared with the memory requirements. Mata stores matrices in memory and requests the memory for them from the operating system.

## Summary

Limits:

	Minimum	Maximum
Scalars, vectors, matrices		
rows	0	$2^{48} - 1$
columns	0	$2^{48} - 1$
String elements, length	0	2,147,483,647

Size approximations:

	Memory requirements
real matrices	$oh + r*c*8$
complex matrices	$oh + r*c*16$
pointer matrices	$oh + r*c*8$
string matrices	$oh + r*c*8 + total\_length\_of\_strings$

where  $r$  and  $c$  represent the number of rows and columns and where  $oh$  is overhead and is approximately 64 bytes

## Remarks and examples

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Mata requests (and returns) memory from the operating system as it needs it, and if the operating system cannot provide it, Mata issues the following error:

```
: x = foo(A, B)
      <istmt>: 3499 foo() not found
r(3499);
```

Stata's `set min_memory` and `set max_memory` values (see [\[D\] memory](#)) play no role in Mata or, at least, they play no direct role.

### Also see

[M-3] **mata memory** — Report on Mata's memory usage

[M-5] **mindouble()** — Minimum and maximum nonmissing value

[M-1] **Intro** — Introduction and advice

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