# Introduction

- Reading
  - Papers
- Questions about project #1


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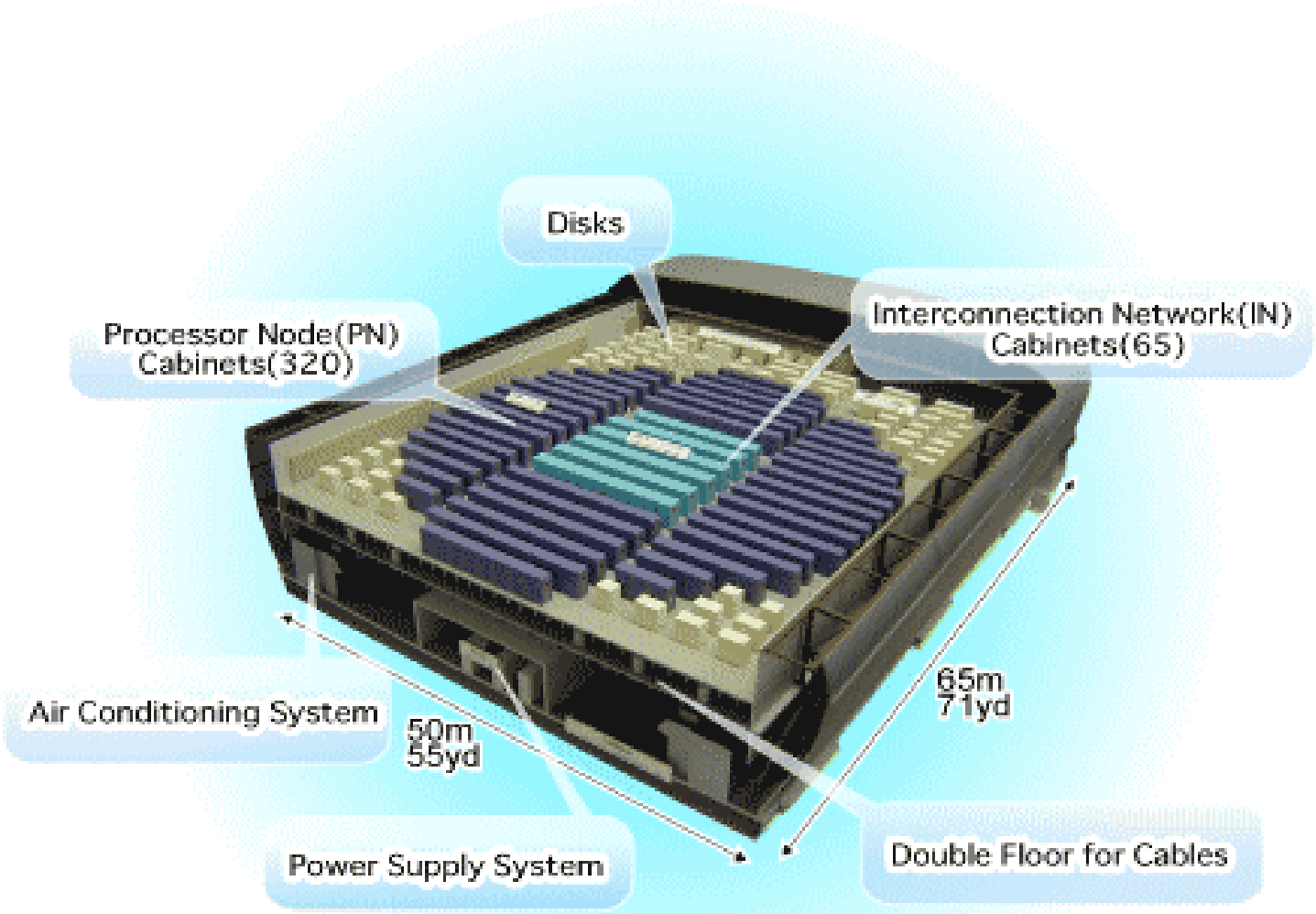
# Earth Simulator – The Building





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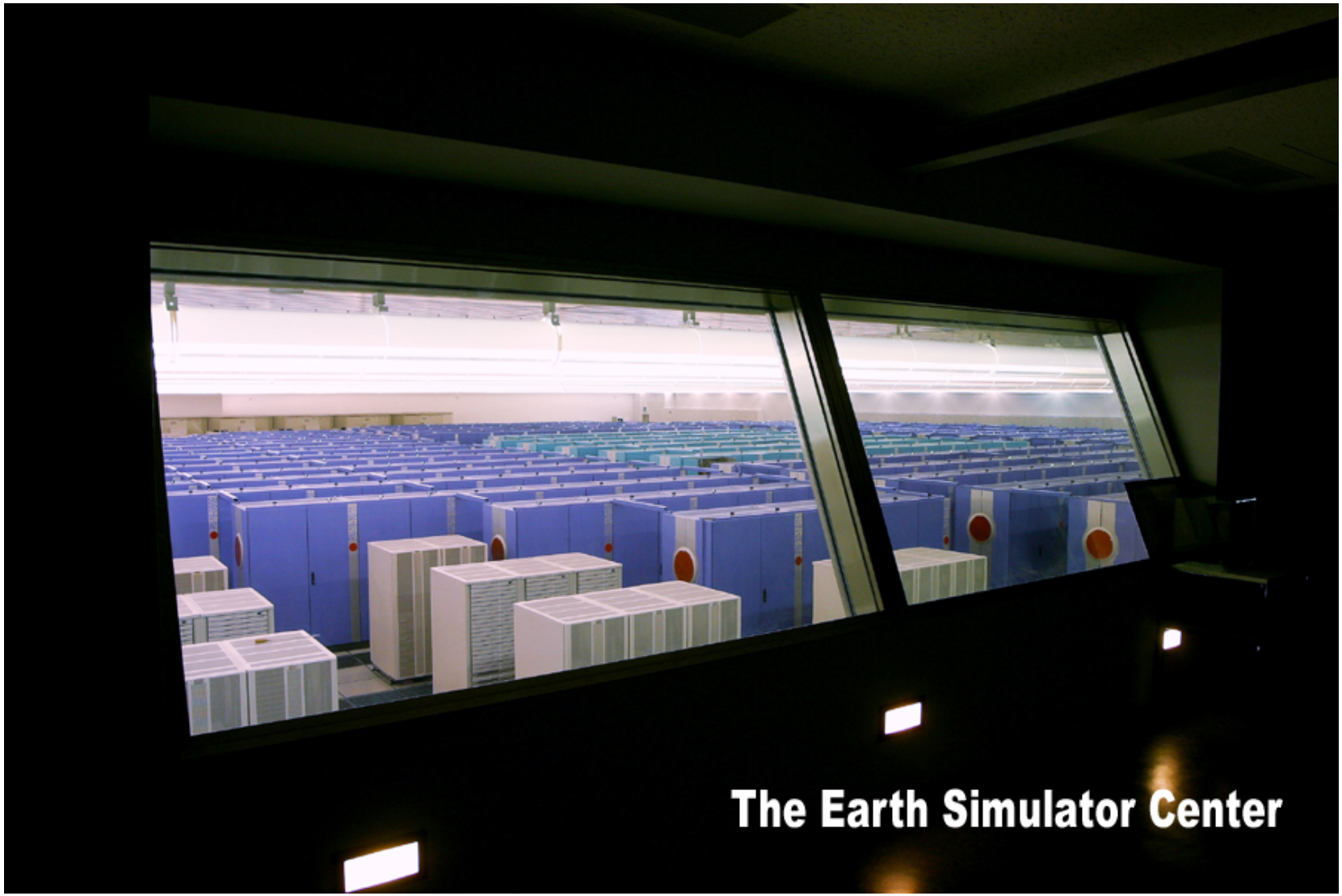
# Earth Simulator





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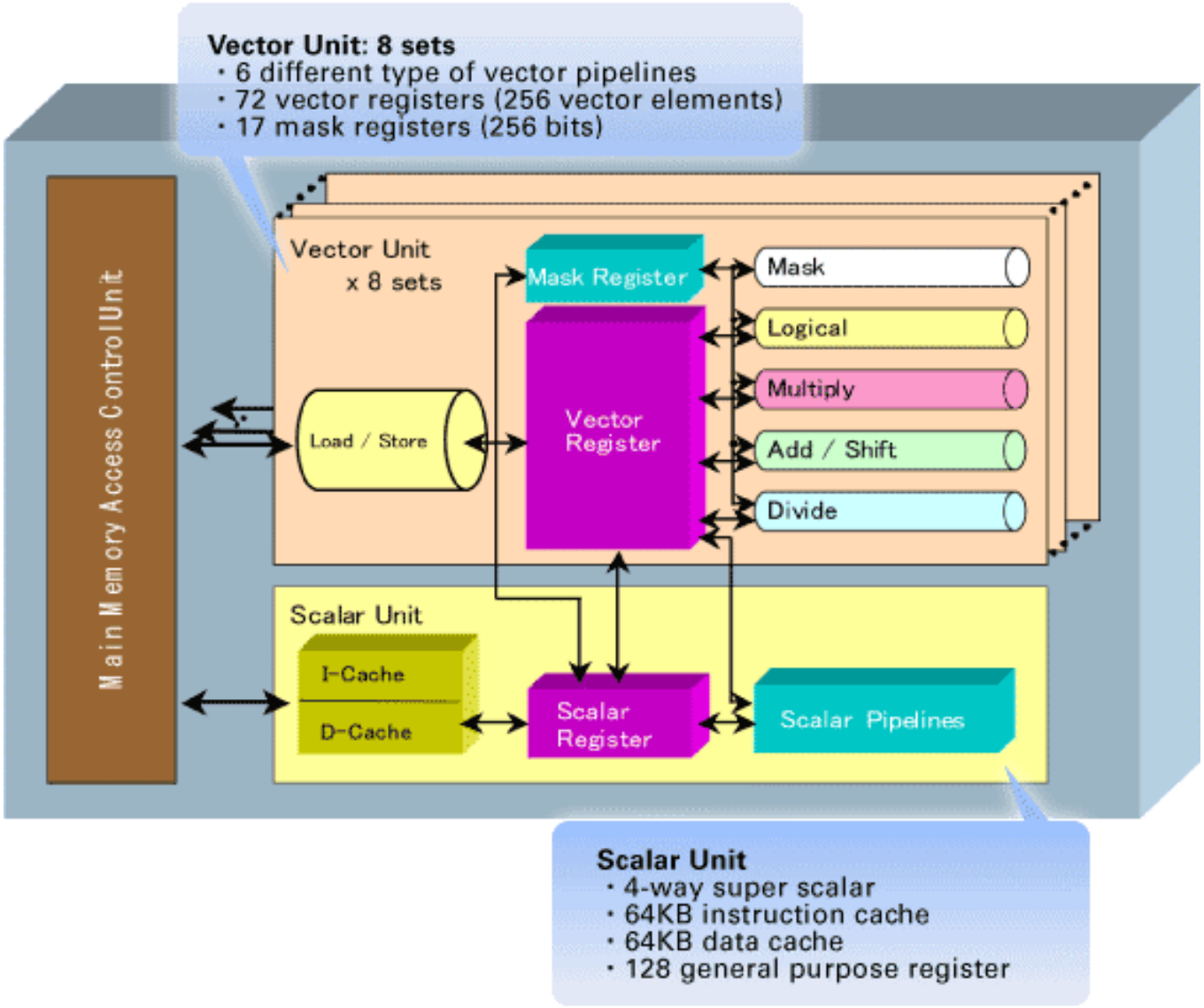
# Earth Simulator - Processor





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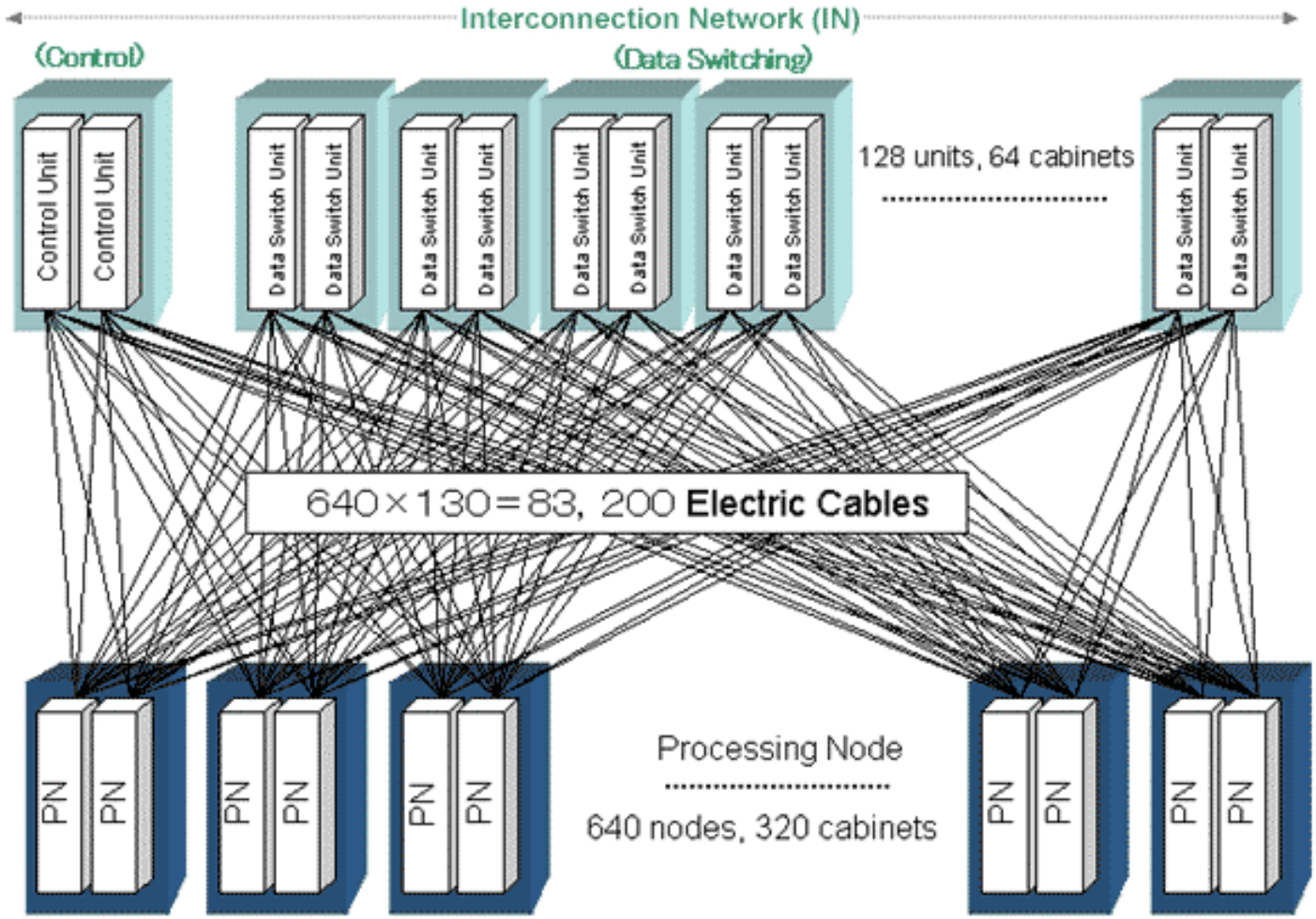
# Earth Simulator

## Interconnection Network





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# IMPACT-3D

- HPF Code
  - Uses data distribution in one dimension
- Vector Code
  - Uses inner most array dimension
- Achieves 14.9 Tflops (45% of peak)
- Got 39% of peak using traditional HPF
  - 45 lines of directives
  - 1,334 lines of executable code


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# Sisal

- Functional Language
- Uses Do-access style parallelism
  - Has software for remote access to global variables

```
type OneDim = array [ real 1;
type TwoDim = array [ OneDim 1;
function generate( n : integer
                   returns TwoDim, TwoDim )
for i in 1, n cross j in 1, n
      t1 := real(i) * real(j);
      t2 := real(i) / rea:L(j)
   returns array of tl
           array of t2
   end for
end function % generate
```


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# Sisal Performance Study

- Very Few Nodes
- No Absolute Performance
- No Comparison with other languages


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