

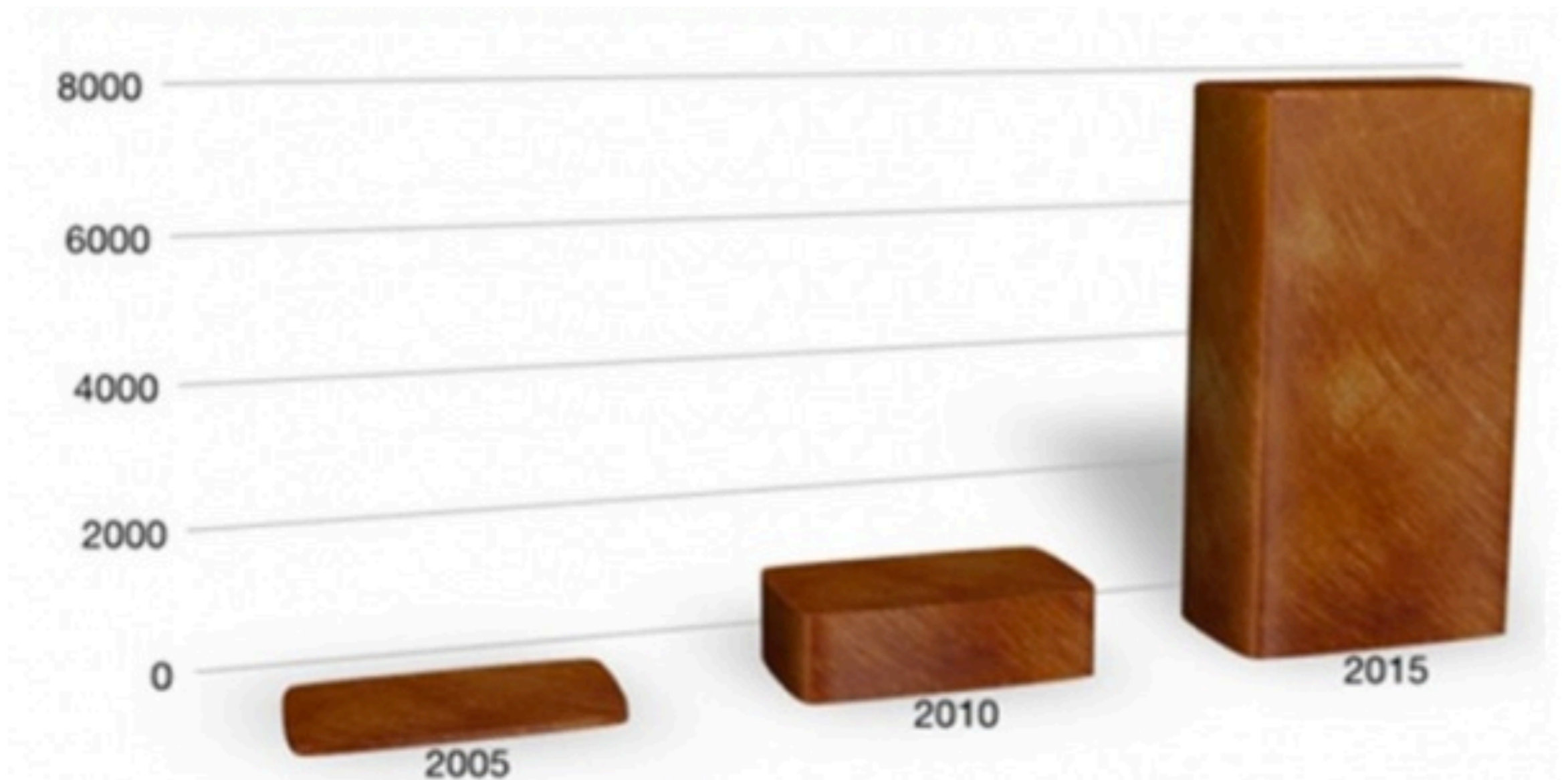
Erlang Solutions Ltd.

# Scaling systems with Erlang



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# storage growth



Source: IDC's Digital Universe Study, sponsored by EMC, June 2011

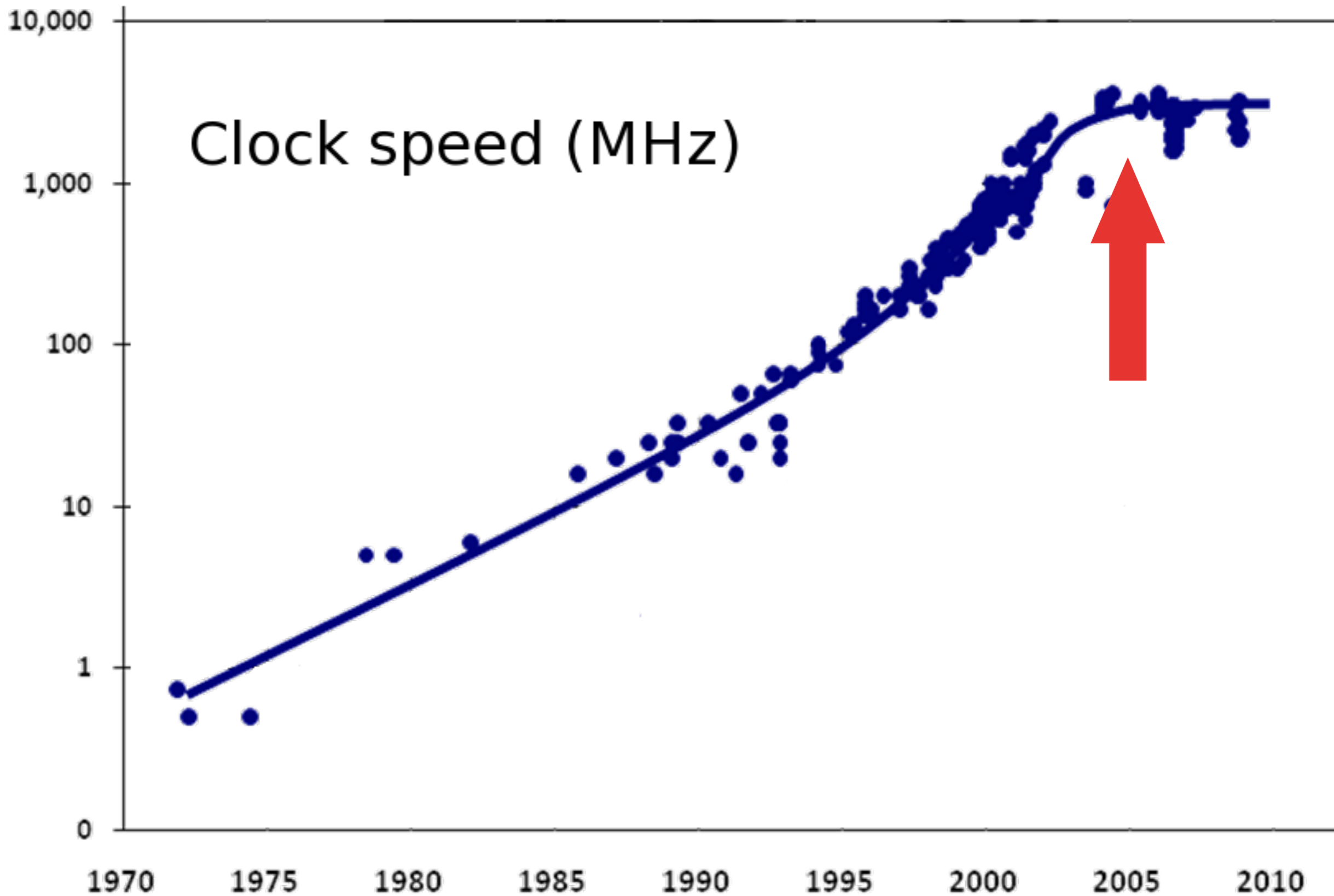
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# 1.8 ZB in 2011

= 1,800,000,000,000,000,000,000 bytes



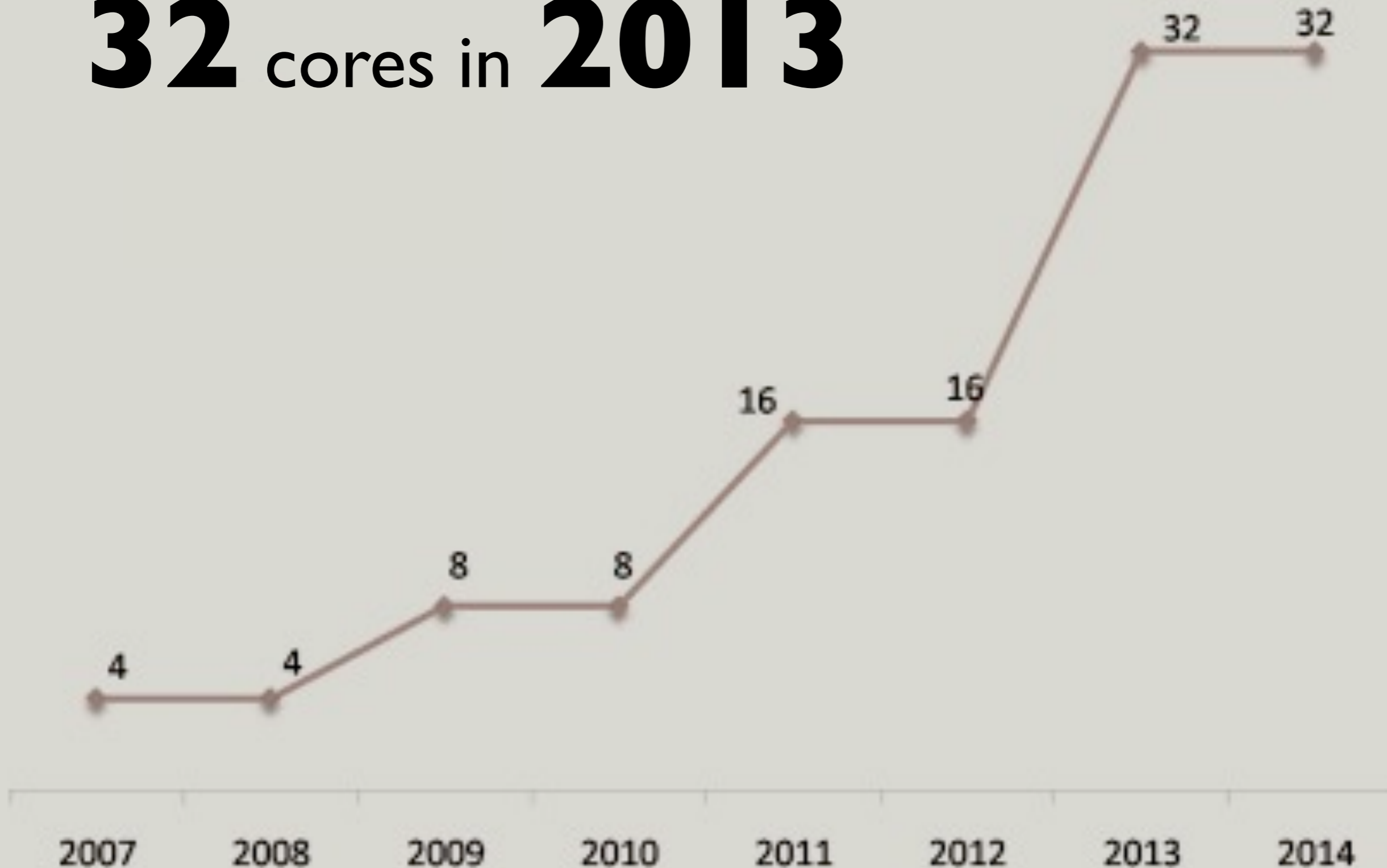


Source: [www.gotw.ca/publications/concurrency-ddj.htm](http://www.gotw.ca/publications/concurrency-ddj.htm)



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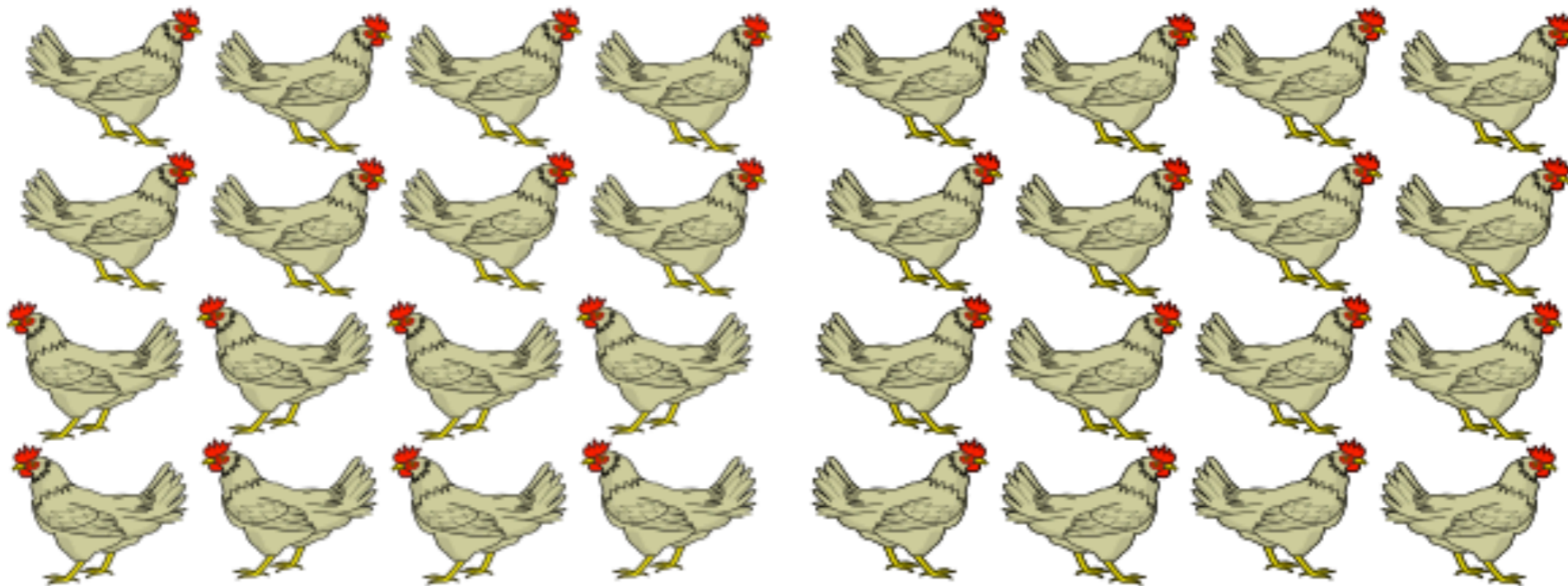
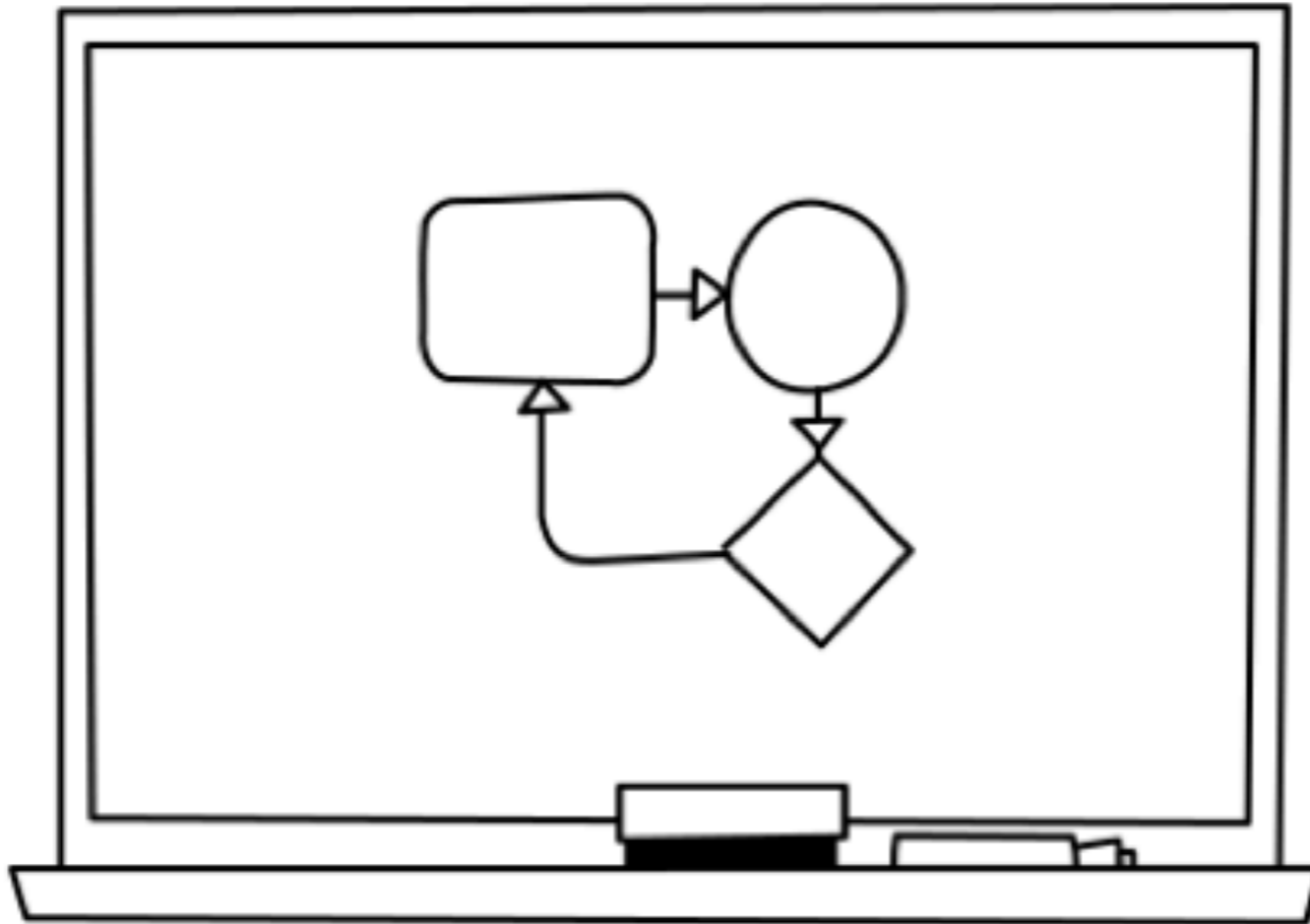
# 32 cores in 2013



Source: Dr. Dobb's (<http://drdobbs.com/>)



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software world  
facing a  
**paradigm  
shift**



# destructive assignment (imperative programming)

**$X = X + 1$**

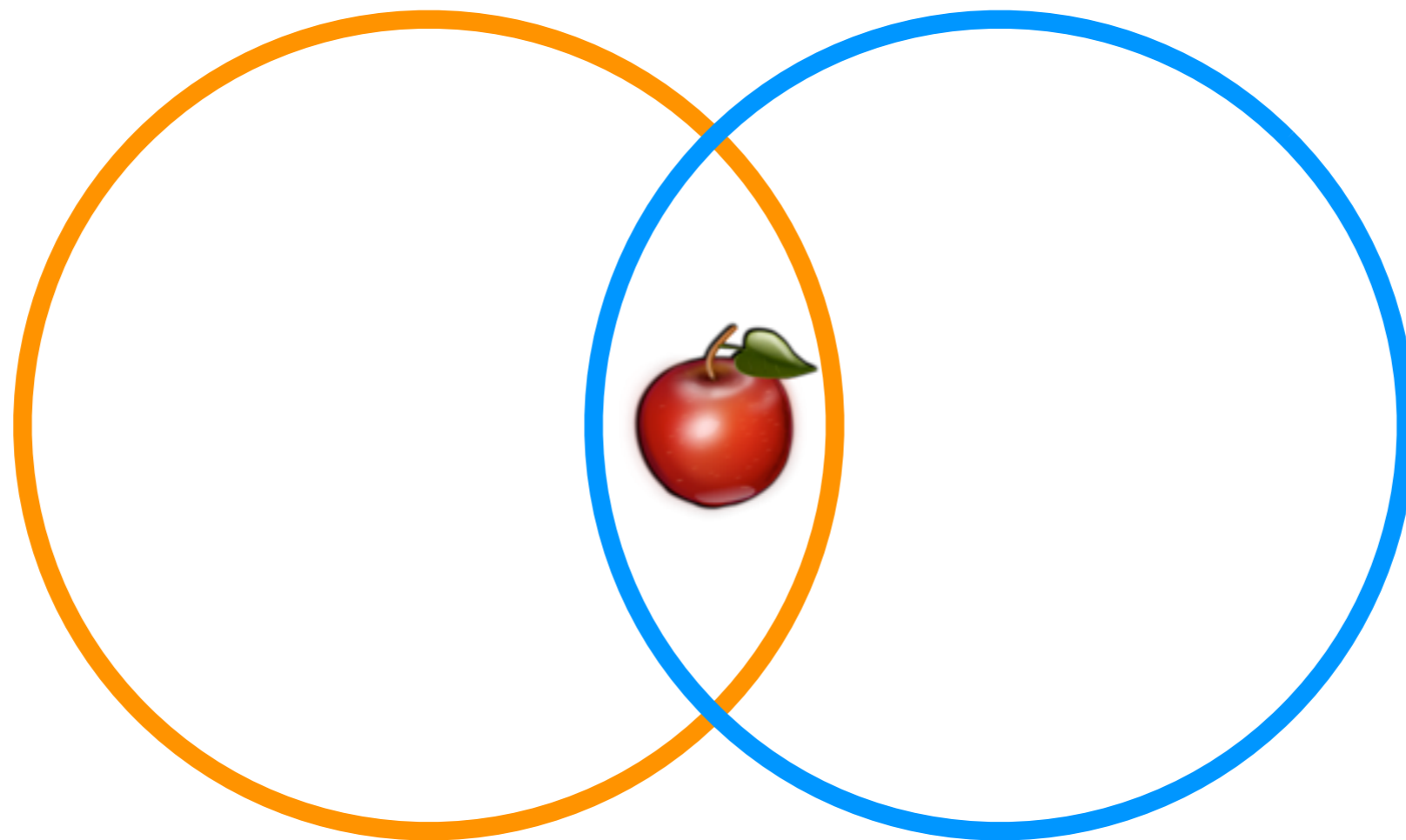
**$(0 = 1) ?$**



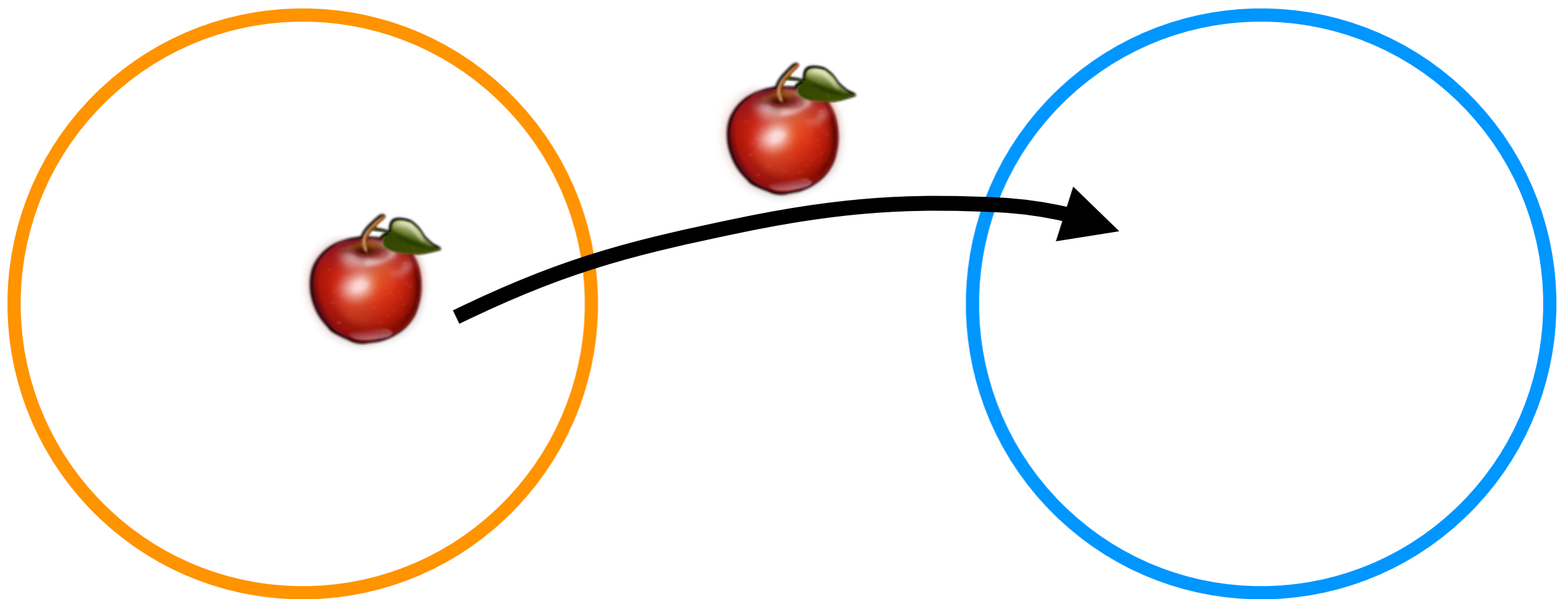
# non destructive assignment (functional programming)

$$Y = X + 1$$

# concurrency with **shared memory**

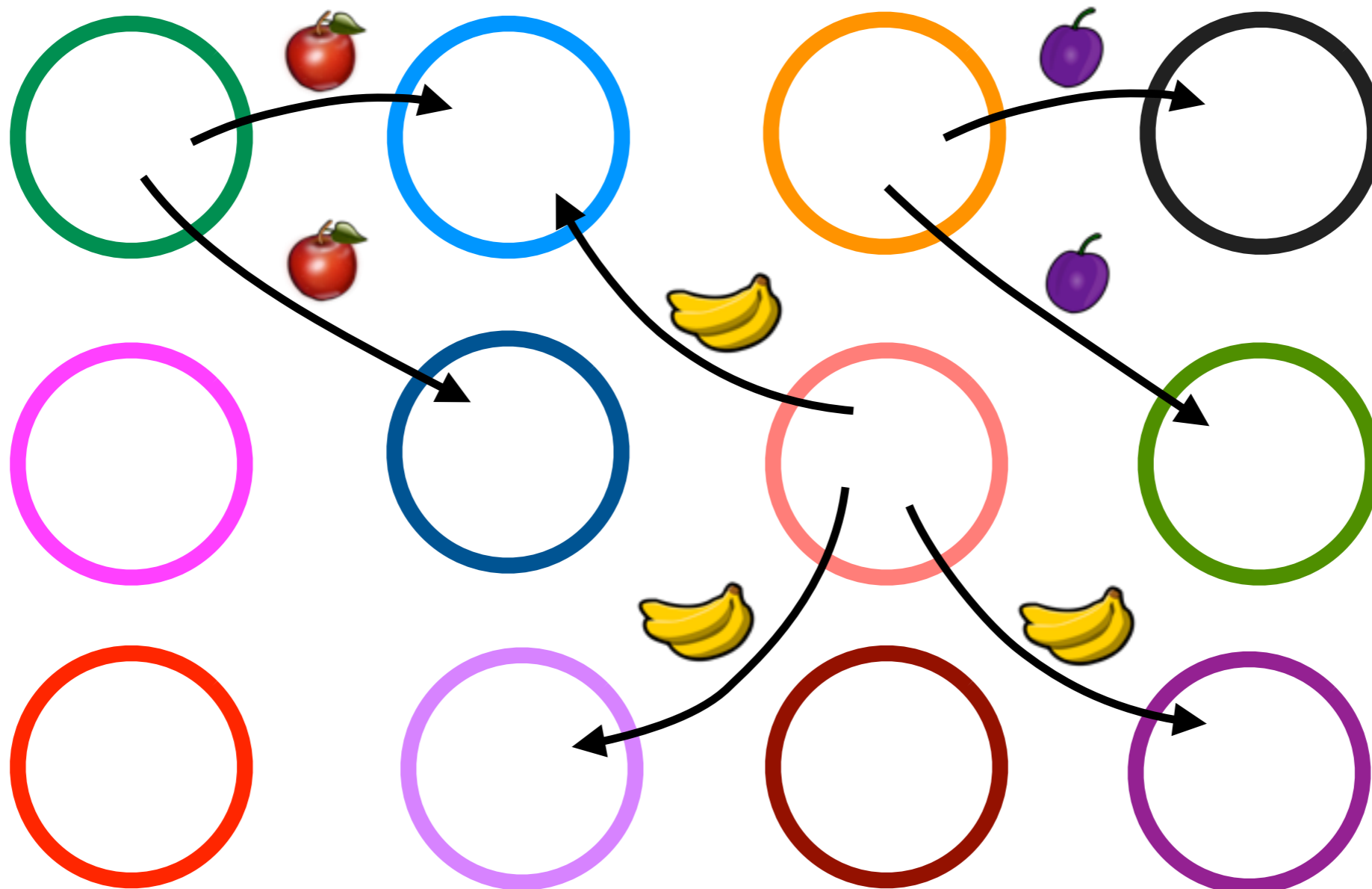


# concurrency with **message passing**

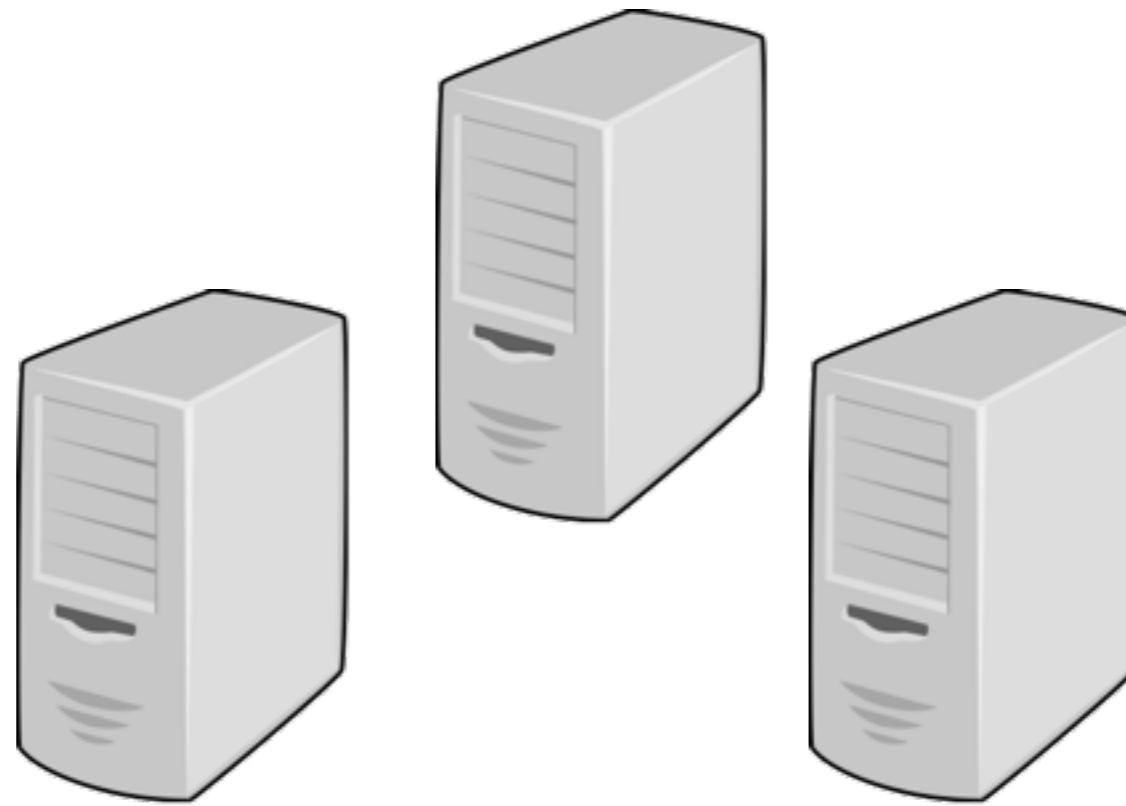


# highly concurrent

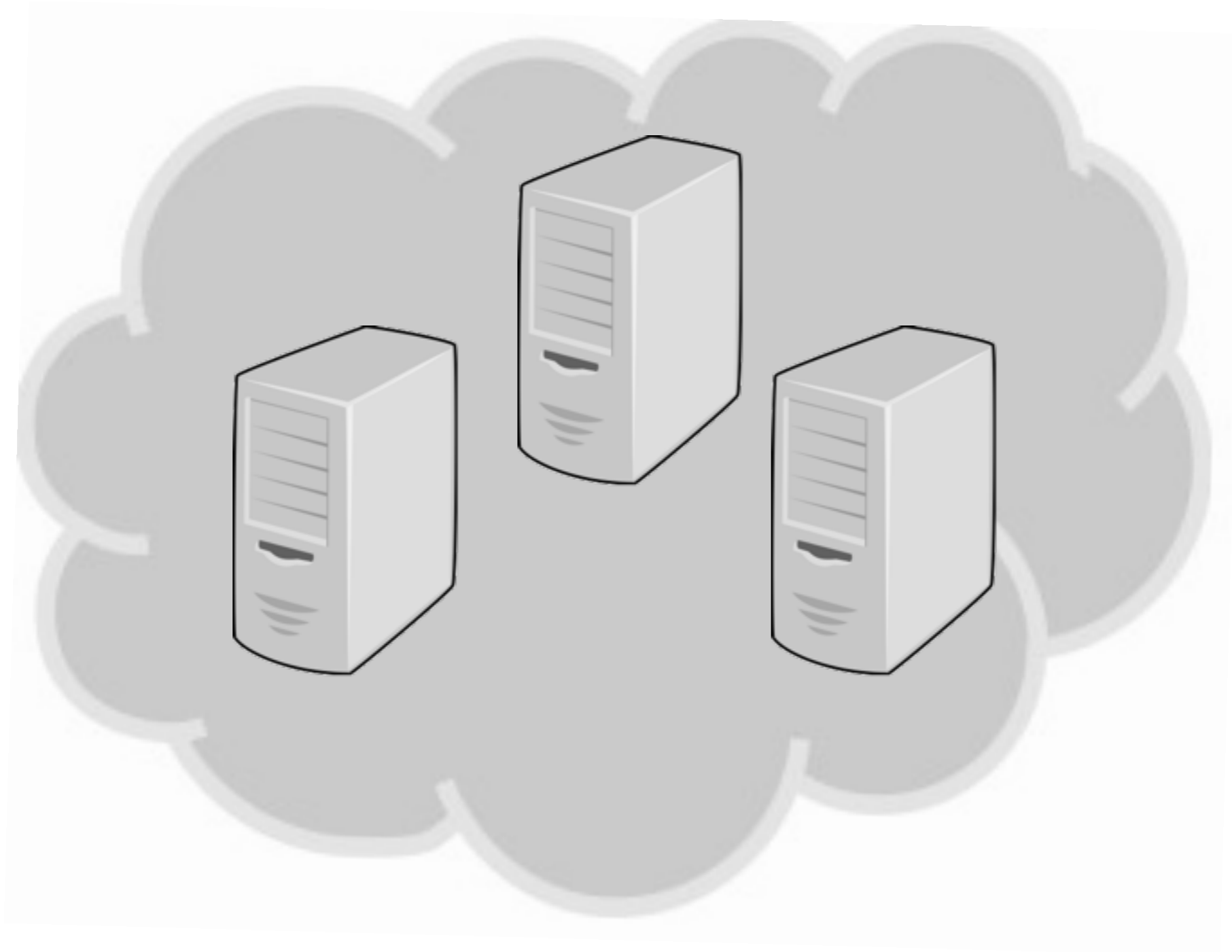
(thousands of parallel activities)



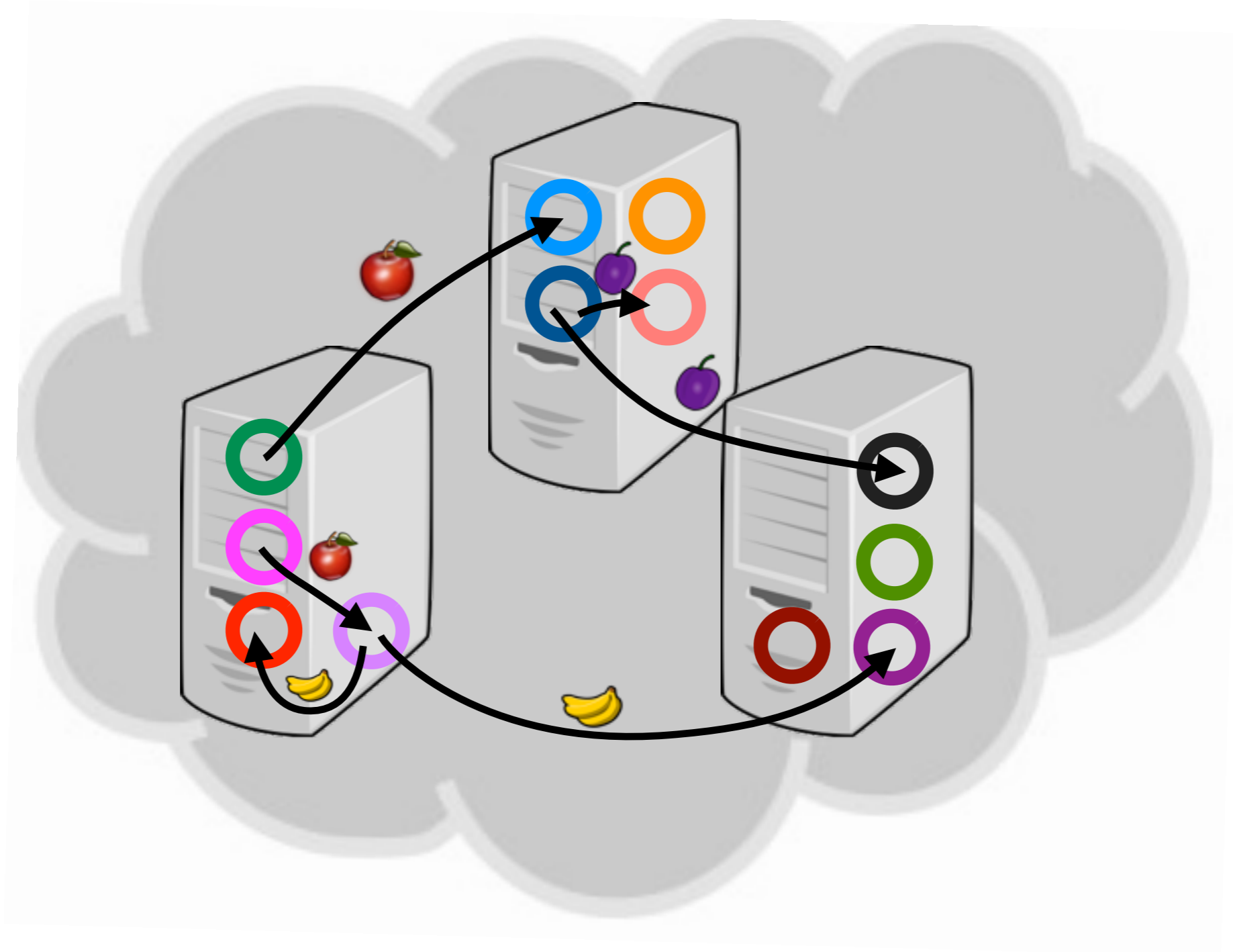
# cluster of computers



# cluster seen as one system



# cluster seen as one system



**"The [multi-core] revolution comes,  
you will be better prepared if you  
know Erlang"**

*Kresten Krab Thorup  
at GOTO Copenhagen 2011*





# Erlang - programming language

## **Very light-weight processes**

You can spawn millions of them

## **Very fast message passing**

no need for shared memory

## **Total separation between processes**

good for error handling



# Erlang - programming language

## **Functional language**

concise code

## **Transparent distribution**

good for distributed systems

## **Compose sequential and concurrent code**

practical



# Erlang - examples

## **distributed map/reduce**

Nokia disco project

## **distributed databases**

Riak (v1.0 released yesterday)

## **instant messaging**

ejabberd - distributed XMPP server



# Erlang workshop

If you want to learn more about erlang  
join us for the Erlang workshop

Tomorrow, Sunday, at 11 am  
i-klass (ул. Лаврская, 16)



Дякую !