



# Condor Week 2008

## Grid Computing at Micron: Then and Now

7/14/10

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- ❖ About Micron and our Grid
- ❖ Then and Now
- ❖ Cool apps
- ❖ Take-aways

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## DRAM – Flash – Imagers



Consumer Memory Upgrades >



NAND Flash Memory Products >



Aptina

### Micron Around the World



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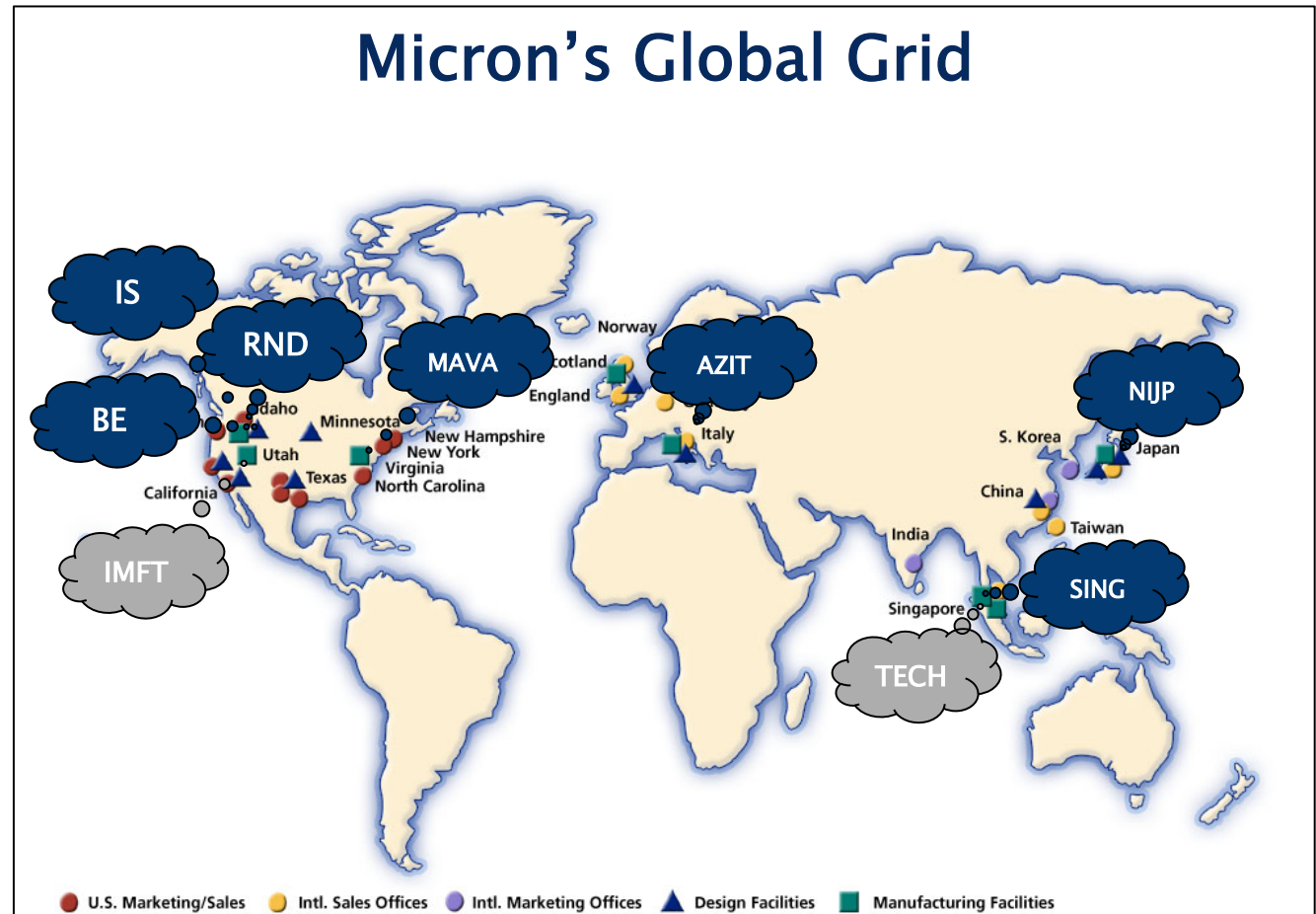
## Condor

2 JV Pools  
7 Micron Pools

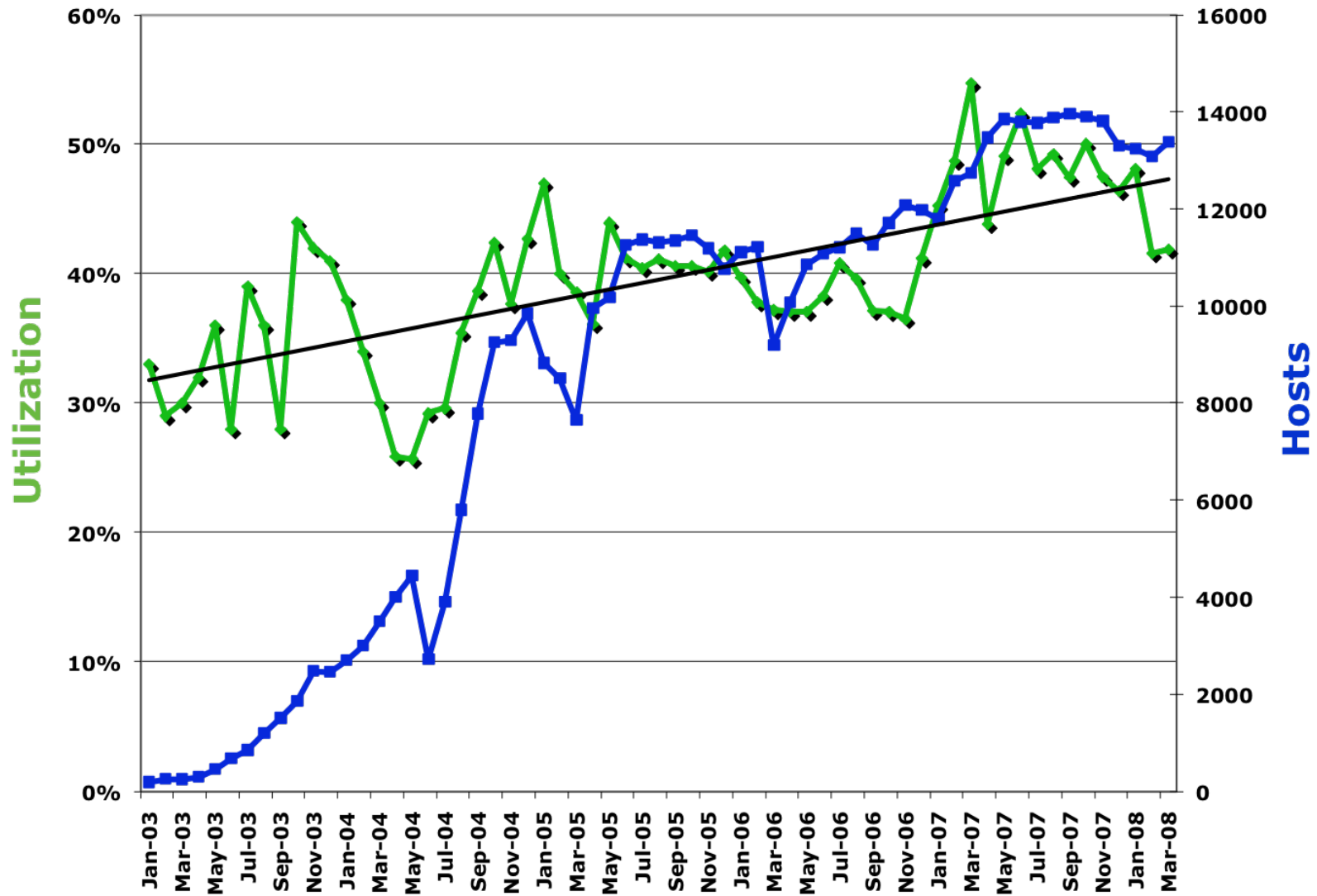
14k Slots  
6.9+ Tflops

Monthly  
~20 apps  
>75 users  
1.2M Hours

Central Governance  
Distributed Mgmt



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## Condor Global Status

[Global Power](#)

[Condor Home](#)

04/29/2008 09:15:08

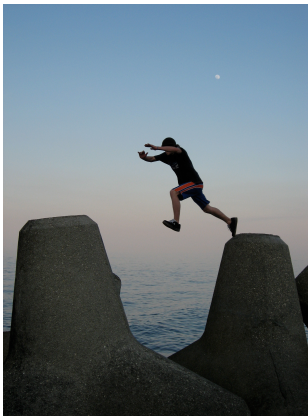
## Global Pool Status

Pool	Administrator	Count				Percent		
		Procs=	Owner	Condor	Idle	Owner	Condor	Idle <sup>1</sup>
<a href="#">condor-azit.azit</a>	<a href="#">condor_azit_admin</a>	1034	508	<b>143</b>	382	49%	14%	<b>37%</b>
<a href="#">condor-backend</a>	<a href="#">condor_backend_admin</a>	2956	1561	<b>696</b>	699	53%	24%	<b>24%</b>
<a href="#">condor-devl</a>	<a href="#">condor_devl_admin</a>	466	208	0	258	45%	0%	<b>55%</b>
<a href="#">condor-is</a>	<a href="#">condor_is_admin</a>	2979	1447	<b>1015</b>	517	49%	34%	<b>17%</b>
<a href="#">condor-lehi.lehi</a>	<a href="#">condor_lehi_admin</a>	926	538	<b>39</b>	349	58%	4%	<b>38%</b>
<a href="#">condor-mava.mava</a>	<a href="#">condor_mava_admin</a>	1373	751	0	622	55%	0%	<b>45%</b>
<a href="#">condor-nijp.nijp</a>	<a href="#">condor_nijp_admin</a>	547	70	<b>179</b>	298	13%	33%	<b>54%</b>
<a href="#">condor-rnd</a>	<a href="#">condor_rnd_admin</a>	1732	1024	<b>407</b>	301	59%	23%	<b>17%</b>
<a href="#">condor-sing.sing</a>	<a href="#">condor_sing_admin</a>	1161	338	<b>214</b>	609	29%	18%	<b>52%</b>
<a href="#">condor-sing-backend.sing</a>	<a href="#">condor_sing_admin</a>	3	2	0	1	67%	0%	<b>33%</b>
<b>All Pools</b>	<a href="#">condor_global_admin</a>	<b>13177</b>	<b>6447</b>	<b>2693</b>	<b>4036</b>	<b>49%</b>	<b>20%</b>	<b>31%</b>

<sup>1</sup> **Green** <=33% < **Yellow** <=66% > **Red** : Processor Idle % Goal is 33% or less

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It's sooo BIG



Just DO IT!

Year	Topic
2002	Condor at Micron (first blood)
2003	Condor at Micron (still bloody)
2004	General Purpose Grid
2005	Semiconductor Mfg w/Condor
2006	Follow the Moon with GAs
2006 (EU)	Follow the Moon with GAs
2007	Not ☹️ (but we did 2 in '06)
2008	The Grid is Dead. The Grid Lives!

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Then (2002)	Now (2008)
Two Boise pools.	Nine global pools.
Buddy, can ya spare a host?	Corporate mandated participation!
One app.	Over 20 apps.
Chomping at the bit for the next release!	Oh, the next release is out?
Condor for Windows SUCKS!	Condor for Windows ROCKS!
Roll your own CM HA, config mgmt, GUI host/job/user mgmt.	CM HA comes w/Condor, OS & Commercial offerings for mgmt.
Looking for employees who 'get Condor'.	Hiring employees who 'get Condor'.
Look, another shinny new thing!	Ah, just run that with Condor.



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## Cool Apps

Push style (out of box Condor)

Manufacturing process control (metrology)

Manufacturing process control (shaping)

(and lots of other 'uncool' apps)

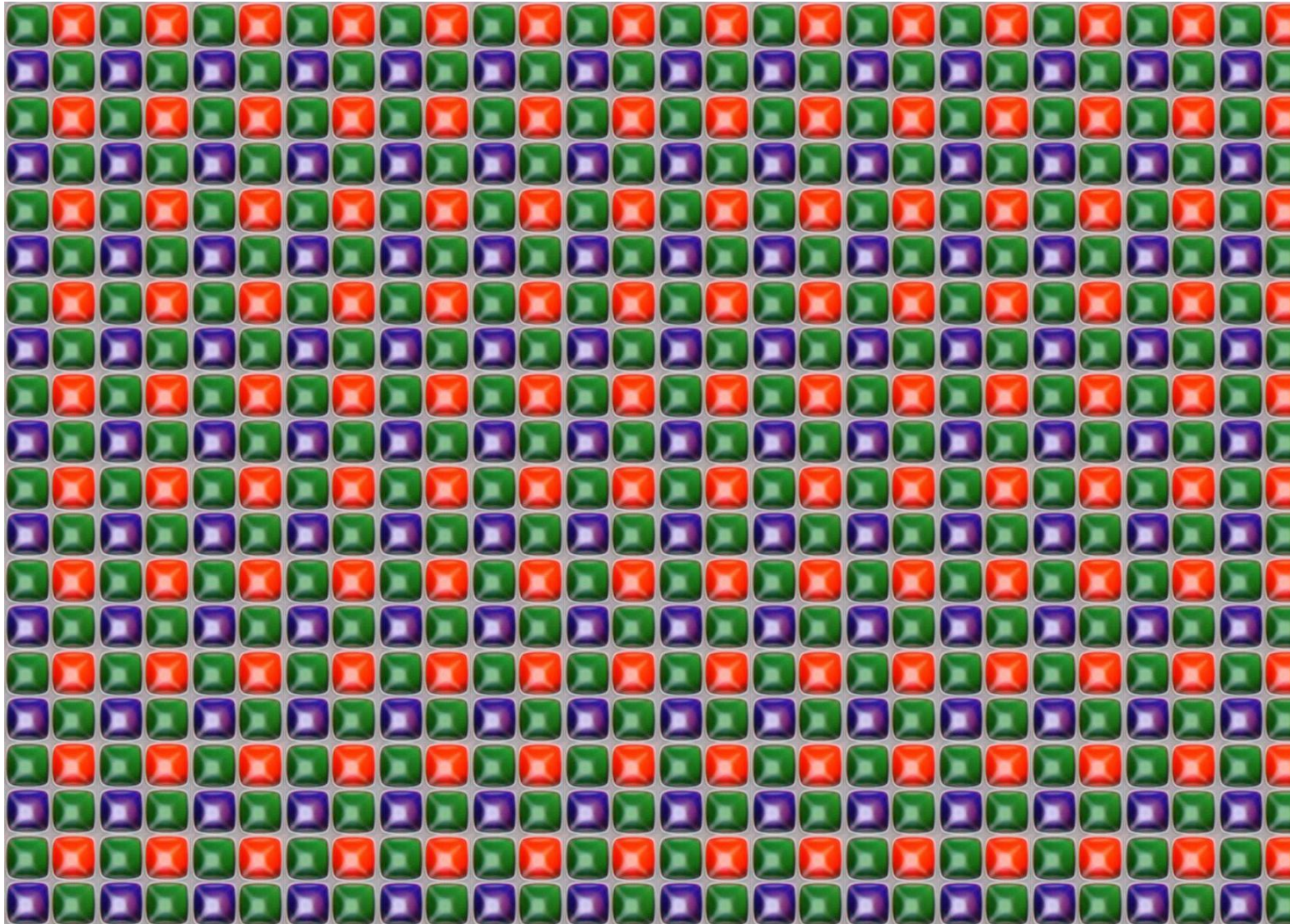
Pull style (Master Workerish)

Image processing

Follow the moon (Flock everywhere)

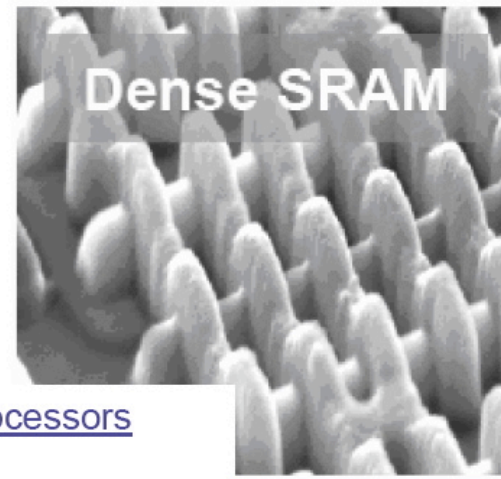
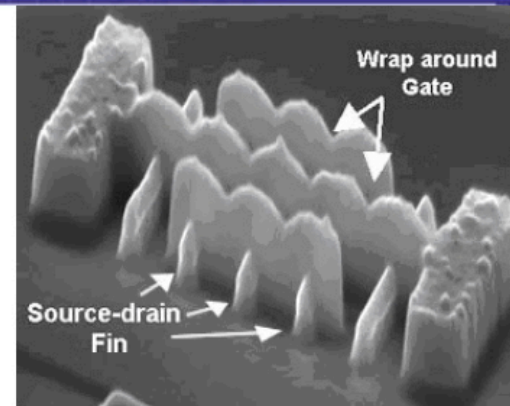
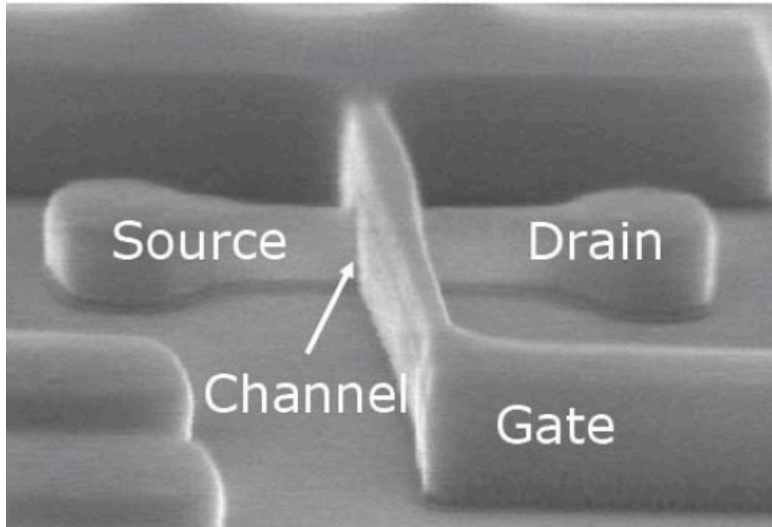
GA-based Optimizers

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## FINFET Gate Transistors



The New Era of Scaling for Energy Efficient Processors  
Mark Bohr , Intel Senior Fellow  
Microprocessor Forum , San Jose, California, May 22, 2007

**NOVA**  
partnering for process control

Nova Confidential Information



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- ❖ Grid 'hype' may have passed, but Grid tools like Condor continue to grow in value delivered to business.
- ❖ Distributed computing can solve many more general problems than you may have been led to believe.
- ❖ The Condor Team is one of the finest SW development groups in the world.

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## Essere!



**Condor**  
*High Throughput Computing*

## Domande?

