

SC21 ARCHITECTURE BOF

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KEVIN D STRROUP

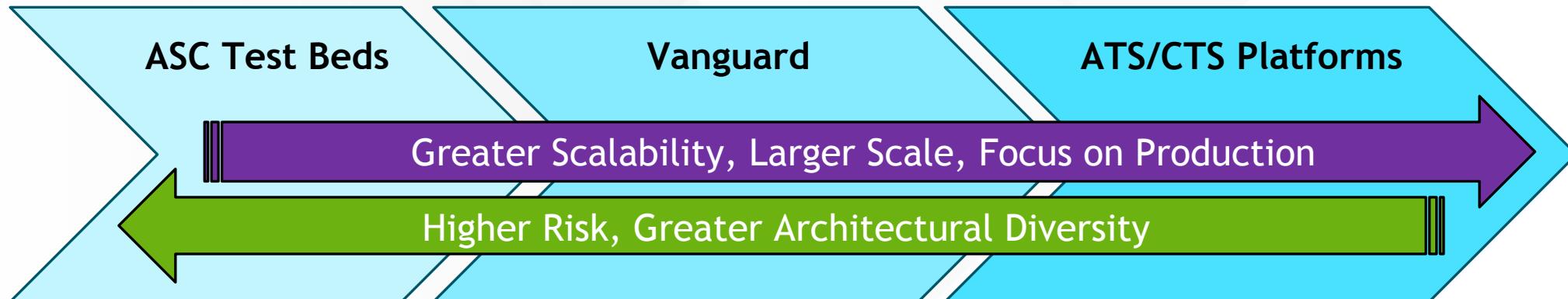
VANGUARD



STRATEGY: CHOOSING A TECHNOLOGY TARGET - WHAT IS THE RIGHT AMOUNT OF RISK?

“Eagles may soar, but weasels don't get sucked into jet engines.” Steven Wright (comedian)

- We might not know until after the fact
- Balance timing with technology environment, budget and other factors
- Most importantly, what is the right risk reward balance for the program (testbeds vs. Vanguard)
- Make the best decision we can given the current environment
 - Don't be afraid to adapt, re-evaluate if necessary – technology and circumstances change quickly





CURRENT AND FUTURE TRENDS TO INVESTIGATE

- Containers, container orchestration, container workflows, workflow orchestration, HPC as a service – pick your buzz phrase
- Heterogeneous platforms including novel accelerators – FPGA, ML accelerators, dataflow and reconfigurable accelerators
- SPACK – for packages as well as containers
- AI/ML role in future production mission space
- Diverging / converging HPC admin stacks – Cray (Pearl/Pecos, Rhine/Redwood, Shasta), HPCM, Ctrl-IQ, Warewulf, Bright – you think we would have gotten this right by now?
- Automated management & configuration across divergent / heterogeneous systems & architectures (Ansible, Chef, Puppet, etc...)