

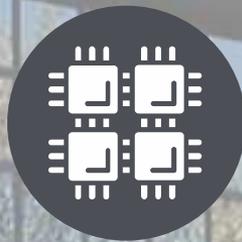
Welcome to Ohio, “The Broadband State”



Pankaj Shah
Executive Director
Ohio Supercomputer Center & OARnet

Statewide Technology Infrastructure

OH·TECH



How We Empower Ohio Innovation



Financial Services



Food Processing & Agribusiness



Automotive



Advanced Manufacturing



Energy



Aerospace & Aviation



Biohealth



Polymers & Chemicals



Information Technology & Services



OARnet



Ohio Supercomputer Center

Big Pipes and High Throughput

2240+

Miles of 100 Gb/sec network backbone

13

Trillion Megabytes annual data transfer

600+

Connected public k-12 school districts

88

Connected colleges and universities

314

Connected Higher Ed Regional Campuses & Sites



OARnet

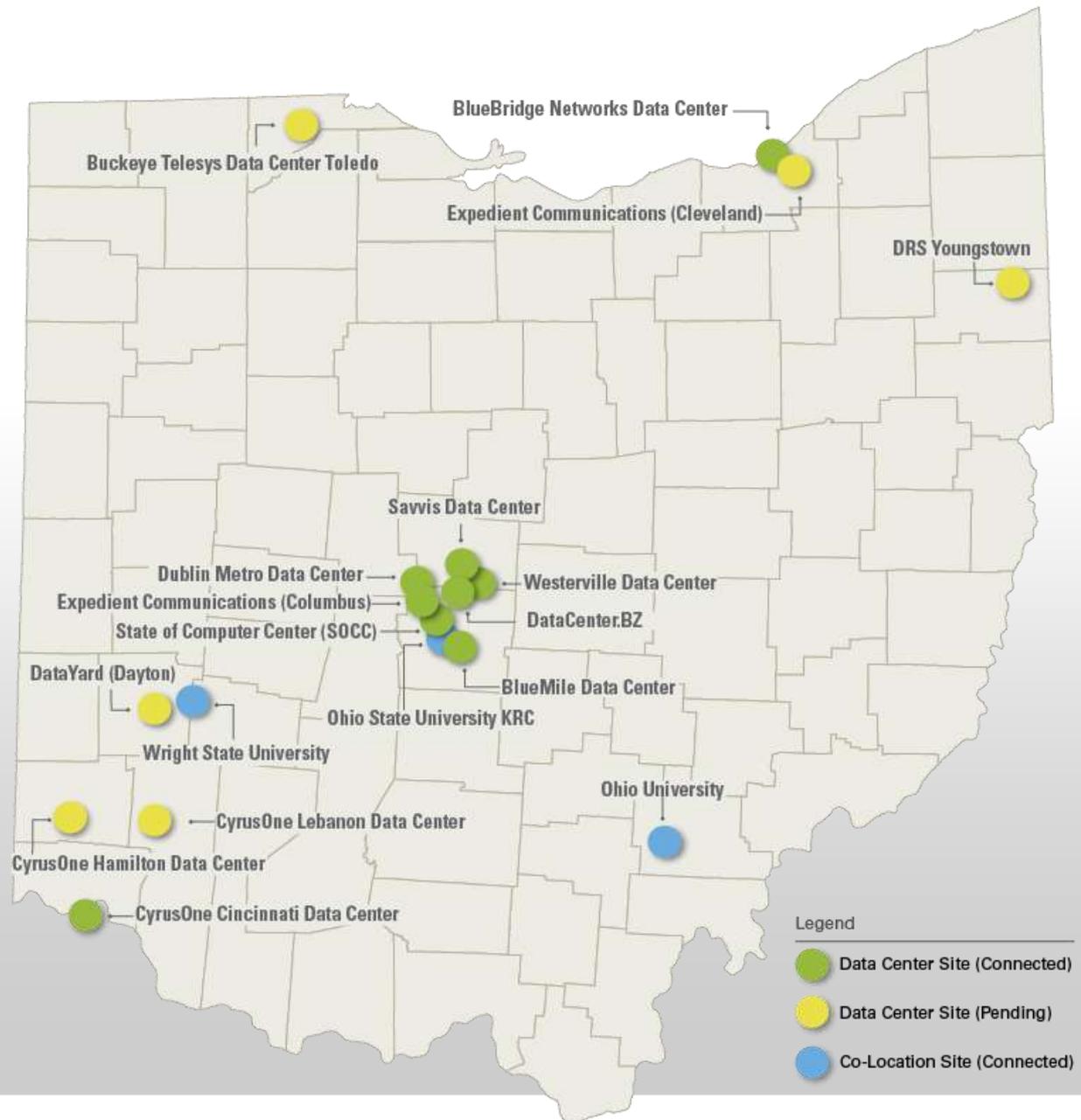
OARnet: 2,240+ miles of high-speed fiber backbone



LEGEND

- 88 Higher Education Campuses & 314 Higher Education Regional Campuses & Sites
- 32 K-12 Education Centers
- 21 Local Government Agencies
- 140 State of Ohio Sites
- 9 Medical Centers & Research Institutions
- 25 Broadcast Education Media Stations & Services
- OARnet Backbone PoP Locations
- OARnet Backbone

Data Center Co-location Sites

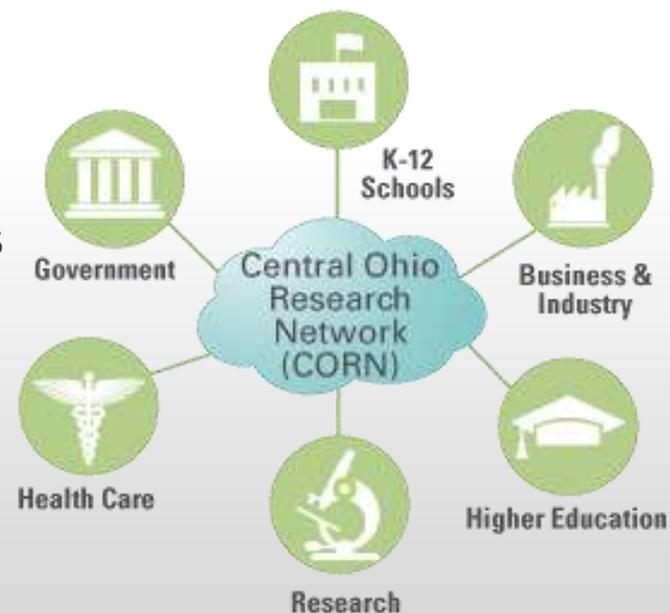


Central Ohio Research Network (CORN)

In 2005, Dublin and OARnet formed a partnership to:

- Optimize the City's investment in their fiber future by providing OARnet fiber for research and education network
- Promote collaborations in support of critical educational, scientific and industrial capacities and research

OARnet responsible for connecting schools, research universities, medium and smaller universities and colleges, government agencies, university related healthcare facilities, and corporations with research ties to Universities



Key results from this collaboration include: connectivity to Battelle Research Institute, Ohio University Healthcare Facility, expansion to K-12 schools, and Ohio State University Stoneridge Healthcare facility

OSC Provides HPC Modeling & Simulation Resources

Computational Hardware: 16,000+ compute cores capable of 350 Teraflops of peak performance

Massive Storage: 2+ Petabytes of disk drives and tape backup directly connected to the compute systems

Broadband Networking: 2,200+ miles of 100 Gbps fiber optic network spanning the state of Ohio

Software: 100+ different software packages, including some state-wide and aggregate licensing programs

Expertise: 15+ PhDs on staff and connections to thousands more at Ohio academic organizations

WE DON'T DO I.T.! WE'VE DONE "CLOUD COMPUTING" SINCE 1987.

Industrial Collaboration Examples



Product
Research

Injection-Molded
Lenses



Greenlight
Optics



TOTAL SIM USA

Prototyping
Fan Designs

Carbon Nanofiber
Manufacturing



Welding
Simulation

Optimizing Plastic
Containers

kineticvision



LG Fuel
Cell Systems

Fuel Cell
Modeling

Dissipating Thermal
Energy



ALTASIM
TECHNOLOGIES
REALIZING TOMORROW'S TECHNOLOGY

Why use HPC Modeling and Simulation?

Technical Reasons:

- Things may be too small to see and measure, or
- Systems that are too large and remote, or
- Processes can be too fast or be too complex, or
- Experimenting would cause harm we wish to avoid.

Business Reasons:

- Faster product development cycles
- Reduces costs of physical prototypes / testing
- Leverages advanced expertise and insight
- Better product design and performance
- P&G estimates M&S ROI of \$7 for every \$1 invested

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