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TECH TALK:

Oracle Resources for Researchers

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10:30 AM US EDT

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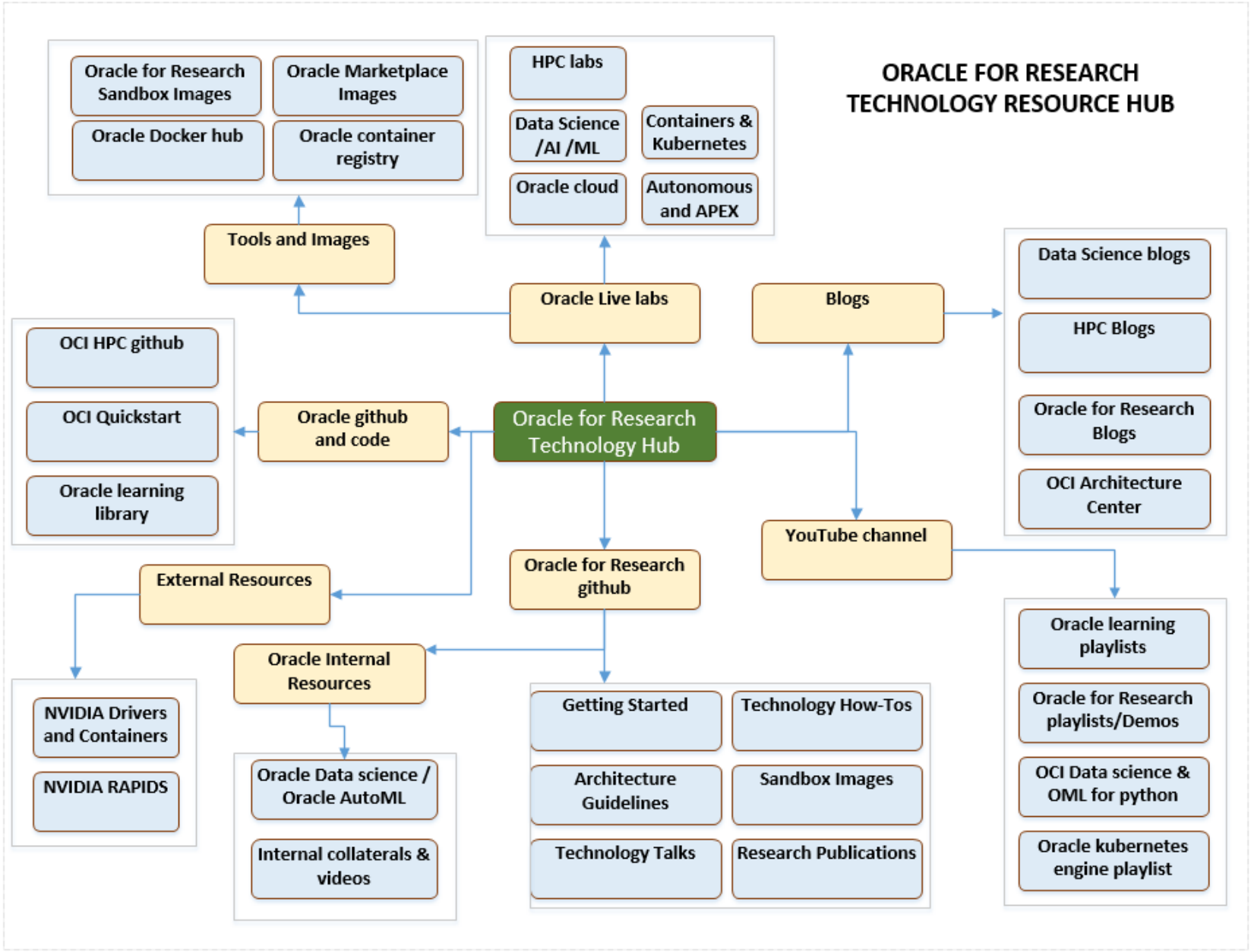
TECH TALK HOUSEKEEPING

- Today's webinar is being recorded. We will share the link to the recording with you via email after the event. The recording will also be made available to the Oracle for Research community.
- We invite your comments and questions, both about the tech topic being discussed and about the series more generally. Questions may be submitted using the Q&A box on your screen or you may ask questions directly using your microphone. When not asking a question, please mute your microphone.
- Questions may be asked during the presentation and we will also have a Q & A time at the end of the presentation when you can ask questions directly and engage in discussion.
- At Oracle for Research, we believe that research and innovation happen best when a diverse and thoughtful community is free to engage in respectful, compassionate, and open dialog. To that end, when asking a question or providing feedback, we ask that all participants be respectful, collaborative, and constructive.

Agenda

Recap and Asks from researchers	1. Q & A on Intro demos, How-to and 2. Resources available to researchers from Oracle 3. How can I quickly navigate and get what I need?
Research Hub	1. Oracle for Research Github 2. Oracle for Research Technology Blogs 3. Technology Live labs for Research 4. HPC / OCI Github 5. Marketplace and Research Sandbox Images 6. Data science and HPC Blogs 7. Oracle Architecture center 8. Oracle Quickstart and learning libraries for research 9. Oracle for Research youTube 10. NVIDIA resources 11. Performance benchmarks
Demos	1. OFR Github 2. Using OFR Images 3. Using Live labs

Researcher Technology Resource Hub



Technology areas and Tools

High Performance Computing	❖ Oracle HPC RDMA Cluster ❖ HPC Lustre , BeeGFS Parallel and BeeOND file system ❖ OCI HPC File system (HFS) ❖ Genome analysis toolkit (GATK) ❖ Oracle Linux 7 HPC Cluster networking ❖ Folding at Home GPU Image ❖ OL7 HPC Image w DRBD, Corosync and Pacemaker
AI / Machine learning	❖ All-in-One GPU Image for Data Science ❖ Kinetica in-memory GPU accelerated database ❖ NVIDIA GPU cloud machine image ❖ Qubole data service (QDS) ❖ Data science analytics monitoring & evaluation ❖ Driverless AI ❖ NVIDIA Quadro virtual workstation ❖ Julia AI HPC GPU Image
Oracle Cloud	❖ NFS Cluster with Active passive High availability ❖ Varnish enterprise 6 for Oracle cloud ❖ Oracle secure global desktop ❖ Oracle Graph server and client ❖ CIS OL7 and Ubuntu benchmarked, hardened and secure images
Research sandbox	❖ Research Gateway ❖ Kubernetes IaaS on GPU ❖ Machine learning GPU/CPU Sandbox ❖ Molecular dynamics Images

Research Areas and Tools

Life sciences

Genome sequencing
Drug discovery
Molecular dynamics
Protein folding
RNA Sequencing

- Nanoscale molecular dynamics (NAMD)
- GROMACS
- Genome analysis toolkit (GATK)
- LAMMPS
- AmberTools
- Autodock Vina
- LS-Dyna
- Folding@Home
- GridMarkets
- Illumina
- Kinetica
- NVIDIA Parabricks
- Schrodinger
- SolidWorks
- Star-CCM+

Engineering and Visualization

- Paraview
- Ansys
- ABAQUS
- Blender
- BRL-CAD
- Code_aster
- foxBMS
- Simscale

Data science / AI / ML

- Machine learning : PyTorch / scikit-learn / TensorFlow /
- Deep learning : Horovod / Caffe / MXNet / Keras / TensorFlow / Theano
- RapidMiner / H2O.ai Driverless AI
- NVIDIA RAPIDS / SAS Grid
- Oracle ML / R Oracle

Other areas

- Document/Text summarization models
- ARCGIS Pro Imaging model
- Social media / sentiment analysis models

Live labs

HPC	❖ Provision HPC cluster from Oracle marketplace Image ❖ NAMD – Scalable Molecular dynamics ❖ GROMACS deployment through Resource manager ❖ Low latency networking with LS-Dyna ❖ Multi-physics simulation with STAR-CCM ❖ In-memory database implementations
Data science/ AI	❖ Machine learning on Autonomous database ❖ OCI Platform – Autonomous driven and AI Infused ❖ Getting started with Computer Vision in Pytorch ❖ Speed up data science with Accelerated data science SDK ❖ Objects segmentation solution with computer vision ❖ Real time recommendation engine using property graph and analysis ❖ Machine learning algorithms on Oracle ADB
Oracle Cloud tenancy	❖ Oracle Cloud core services ❖ Identity and access management ❖ OCI Command line interface playground ❖ OCI Block volumes and file storage services ❖ Deploying infrastructure using Terraform
Container & Spatial	❖ Introduction to Oracle spatial ❖ Containerized development on Autonomous
Autonomous & APEX	❖ Low code development with Autonomous DB and APEX ❖ Extending APEX applications with autonomous database

Other Resources

Blogs	❖ Oracle for Research Blogs ❖ Oracle Cloud HPC ❖ Oracle AI/ ML and data science blogs ❖ Oracle Cloud performance solutions ❖ Oracle A-Team chronicles blog ❖ OCI Developer Tools and solutions
Github	❖ Oracle for Research github ❖ Oracle quickstart pages ❖ Oracle learning library ❖ Oracle Cloud HPC github ❖ Oracle docker container images ❖ Oracle High performance R on GraalVM ❖ Oracle R docker
YouTube	❖ Oracle for Research Tech Talks ❖ Oracle learning ❖ OCI Data science playlist ❖ Oracle machine learning for python ❖ Oracle Kubernetes engine playlist
Doc links for Research	❖ Important links for Researchers
Performance Benchmarks	❖ GPU benchmarking on NAMD 3.0 alpha ❖ More upcoming ..

Architecture center

- Reference Architectures
- Automate loading data to a data warehouse
- Data science with Oracle Machine Learning
- Deploy the BeeGFS parallel file system
- Deploy scalable file system with Lustre
- Connect your on-premises network using VPN
- Set up interconnect between MS Azure and OCI
- High Performance CDN with Varnish Enterprise
- Deploy a scalable distributed file system using GlusterFS
- Deploy a high-performance storage cluster using IBM Spectrum Scale
- Enable a split-stack architecture spanning Oracle Cloud and other providers using Equinix

- Solution playbooks
- Best practices for Oracle Cloud Infrastructure
- Best practices for designing reliable and resilient cloud topologies
- Set up a Kubernetes cluster for deploying containerized applications
- Interconnecting Oracle Cloud with other cloud providers

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Questions, Answers & Discussion

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Questions? Comments? Feedback?

Contact us!

Website: oracle.com/oracle-for-research/
Github: github.com/OracleforResearch
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Next Tech Talk: Feb 5th 2021