Intel keynote Red Hat Open Tour   redhat

How Intel helps Red Hat cloud builders globally and locally?

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Welcome!

- Intel Corporation (NASDAQ: INTC)
  - Founded in 1968 (Robert Noyce and Gordon Moore)
  - Revenues in 2021 around $75B, 110000 employees

- Our businesses
  - Microprocessors, FPGAs, xPU accelerators
  - Equipment (NICs, servers, PCs, cameras)
  - Software (almost completely open source)
  - Foundry services (Intel manufactures your CPU)

- Our organization
  - CCG Client Computing Group
  - DCAI Datacenter & AI Group
  - IOTG IoT Group
  - Mobileye (automotive and MaaS services)
  - Intel Labs (i.e. quantum computing, neuromorphic computing)
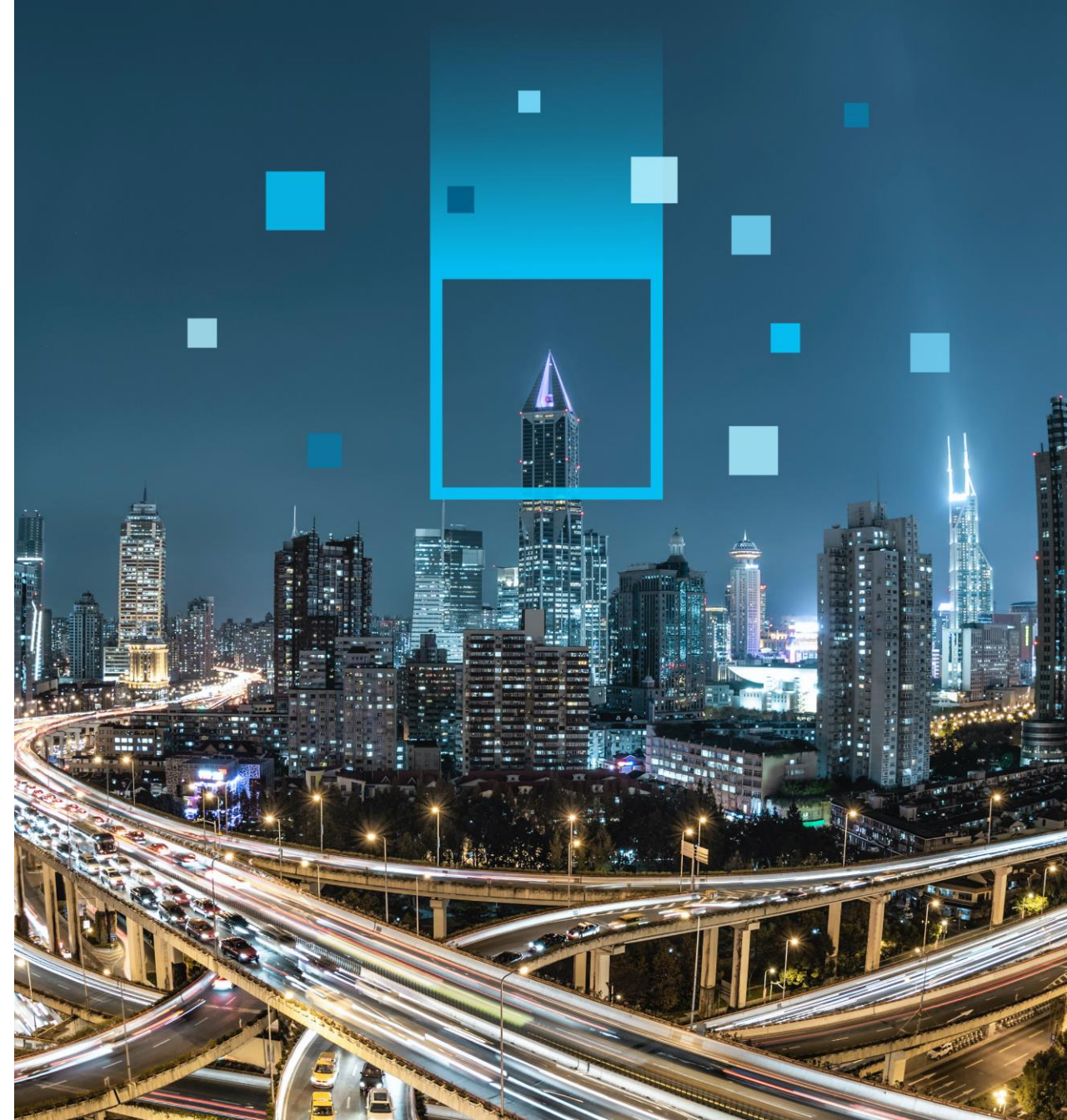
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Why is this topic important – meaning of open source now and in the future

What have we already done on the background for you – Intel & Red Hat global view
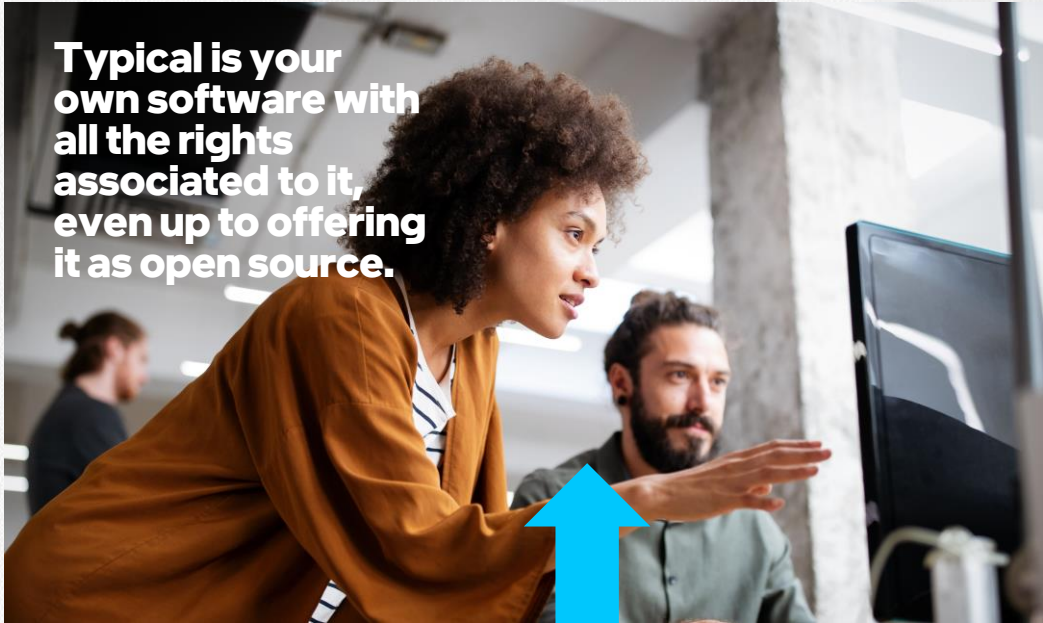
What we can do specifically for you – example, pro bono cloud strategy service

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Open source

Do you have "layers" and "sides"?

- At the same time with adoption of cloud, companies and public sector organizations have started to develop (code) their own systems

- However, it is typical to have selected tools and target environments whose providers have commercial interests and closed source licensing mechanisms

- Hence, in an oversimplified view, there is a two-layer cake as far as open and closed source software is concerned

- **So we are tempted to ask:** why you don't switch to Red Hat open source on both of your "layers" or "sides"?

Typical is your own software with all the rights associated to it, even up to offering it as open source.

Also typical is that you choose closed source tools and closed source clouds as the target. Why?

Once again: the benefits

- **Life cycle** There are IT projects in the media all the time that might have benefited from you deciding on the life cycle yourself, not the providers

- **Elasticity** While the cloud may have enabled the elasticity of compute and storage capacity, it has not done so (generally) for software licenses

- **Affordability** Taking advantage of low-cost, even free technology can enable new use cases, services and business models.

- **Contract terms**, closed source software may be subject to contractual restrictions that may apply to your industry, for example healthcare, in the case of open source you decide for yourself

- **The power of the crowd** behind open source
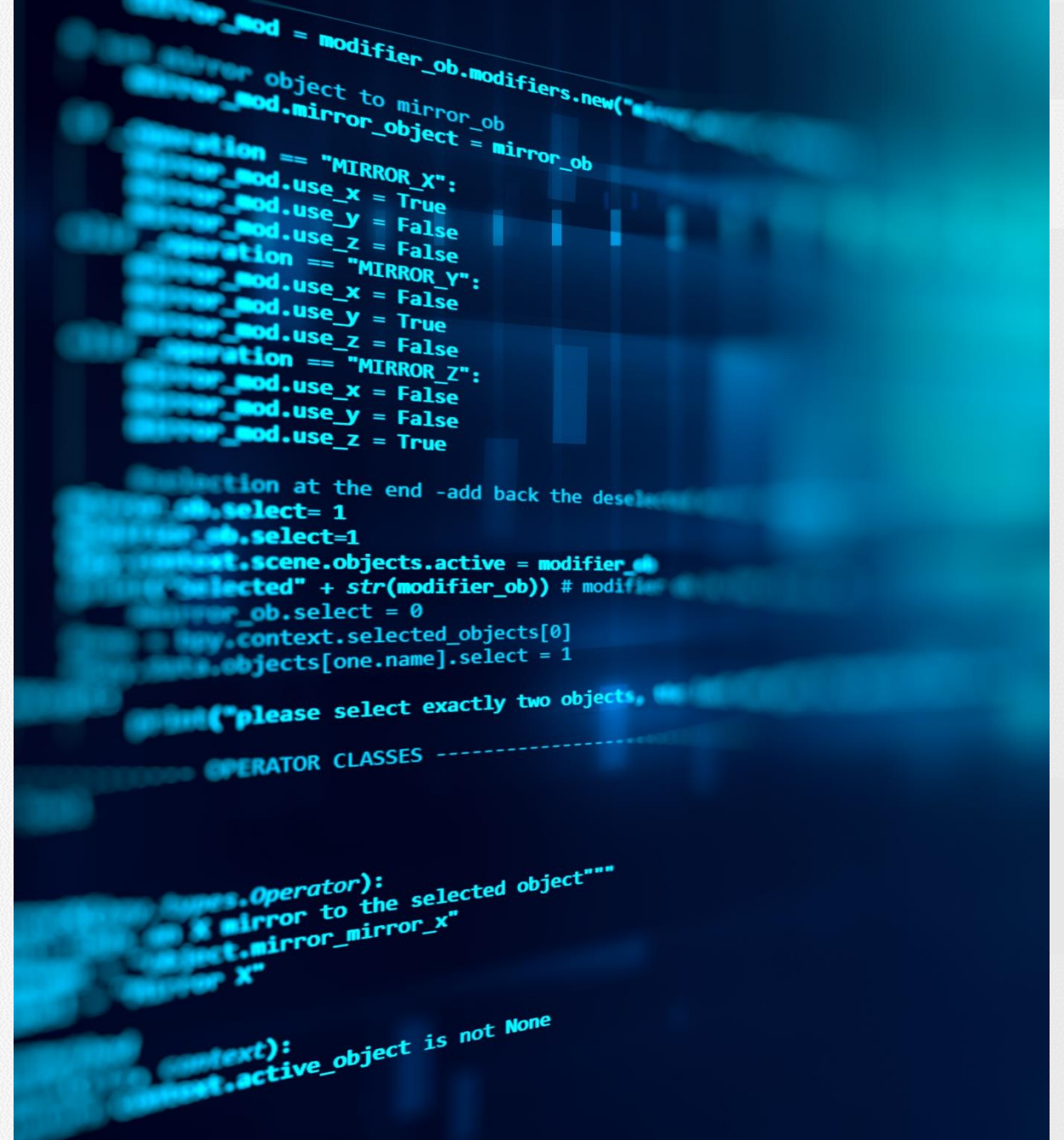
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Is there a caveat emptor?

- **With great power comes great responsibility** If you use open source software, you have a responsibility yourself, the life cycle of a component always ends at some point, even the community cannot support everything indefinitely

- Increasingly, **you use software within your products and services**, in which case the freedom offered by the open source are hard currency

- Observe the development that hyperscalers have started to endorse **their versions** of open source software, choose wisely

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Looks good going forward

- Systems are built from containers, microservices, APIs, your chances of utilizing community-created software **are getting better and better**

- **AI and edge computing** can bring with them use cases where, for example, volume changes up or down, having open source is a big benefit in such cases

- So far, there are **only very few isolated signs** that commonly used open source software would be under threat of patenting – however, it is worth understanding your responsibilities within the "indemnity" clauses within contracts

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What does Intel offer to developers? As open source?

- During the years, it has been often Intel has provided most contributions to **Linux kernel**

- We have supported the community on the other groundwork as well – **security** with SGX enclaves technology and work on Hyperledger Avalon (blockchain)

- We are now particularly vested in **Linux graphics** as Intel's own GPU accelerators are coming to market

- **AI** - optimized frameworks and kits for Intel processors, for TensorFlow, MXNet, Caffe, Theano, Chainer, …

- For **computer vision** specifically, OpenVINO toolkit for decreasing the size of the model, increasing frame rates

- And finally, there is a **whole open source programming model oneAPI**, under which brand we offer AI tools, data tools and migration tools, off closed source paradigms such as CUDA

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Intel Embree open source raytracing library has an Academy Award for contributing to the movie making process.

redhat

Intel has worked together with Red Hat for 25 years to contribute to the software making process

How do we help you on the global level?

- Our goal is to implement an **open hybrid multi cloud** together and we verify it through common 5G, AI and Intelligent Edge solutions

- An important part of that is **testing and predefining** what you would need during the system's life cycle
    - **Day 0** from the customer's point of view through measurements and recommended configurations made together
    - **Day 1** supporting installation and provisioning, documentation as a solution model, also when the environment is public cloud
    - **Day 2** the everyday - even if they are implemented for you by the server manufacturer and/or service provider

- We have selected few **target verticals and joint partners** which we then support also commercially

- Externally visible work includes e.g. **OpenShift Platform Plus and OpenShift Container Platform reference architectures**, on recommended OEM server models

powered by INTEL run on Red Hat

Public Cloud Providers

aws | Azure | Google Cloud | IBM Cloud

System Integrators

accenture | Atos | NTT Data | Tech Mahindra
Capgemini | wipro | World Wide Technology

Software Vendors

SAP Global Partner | CLOUDERA | SAS | NetApp

Certified Cloud & Service Provider

EQUINIX | Open Telekom Cloud | ukcloud | KDDI France

OEMs certified for Red Hat solutions

Hewlett Packard Enterprise | DELL | CISCO | Lenovo | SUPERMICRO

How do we help you on the global level?

- Most of the testing and architecture work is around standard **Intel Xeon server CPUs and NICs**

- For the telecom area, testing also based on Xeon D (lower-end IoT/edge processors, 4-20 cores)

- For **OpenShift Data Science & Open Data Hub**, "Operators" have been created, e.g. For Intel's OpenVINO and oneAPI AI Toolkit

- Integrations in progress for Intel's **recent acquisitions** (Habana AI GPUs in AWS, Granulate i.e. instance optimization in public cloud, cnvrg.io MLOps environment support)

- **Redhat OCP and Intel 3rd Gen Xeon "Ice Lake" is an excellent combination** - even the inexpensive Xeon Silver products have performance improvements of tens of percent compared to the previous generation

Intel Xeon processors have encryption and AI acceleration built-in

AVX-512 instruction set is used e.g. when handling the TLS protocol. DL Boost, on the other hand, speeds up AI processing. In these workloads, the Xeon's performance advantages are often significant.
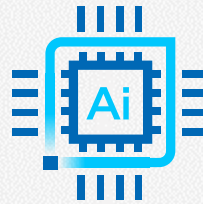
Helping you on the grassroots level

Pro bono strategy assistance	Games and challenges	Samples, lab access, other dialog
Intel offers free of charge, but still well defined strategy definition sprints, for AI, data, edge, and ICT sustainability.	For AI, we have a fully gamified exercise, "AI Card Game". The game provides a maturity assessment.	Remote access to both global DevZone cloud resources and UK/SWE xSP server tech labs.

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Single
integrated
cloud plan

pro bono cloud strategy

Don't climb the mountain alone.

Single Integrated Cloud Plan

Rise of public cloud only environments, FinOps-led

Repatriation, sovereign clouds, European cloud

Industry & vertical clouds by hyperscalers

Line of business disruption, servitization

Single Integrated Cloud Plan

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CHOOSE YOUR SCOPE AND ACCENT

1 Repatriation of systems	2 Cost & perf. Optimization	3 Metaverse planning	4 Sovereign cloud planning	5 Servitization assistance	6 Your defined scope
Feasibility, technical reqs, what a project would look like	By optimizing your VM/PaaS fleet, starting FinOps	What would initial metaverse presence mean for you?	Formal require-ments and actions for data, mgmt. of it	Descriptions, GTM and business plans for your service	Plan and document what you want to achieve with cloud

SELECT DELIVERABLES FROM THIS MENU

Strategy public-ation and video	Future of Cloud FoC seminar	Cloud Financials 101 training	Cloud Gover-nance Model	Gaia-X Strategy Pack	"The Cloud Game"
Including narrative, multiyear roadmap, Q&A and survey results.	Tailored to you, for an "all hands" meeting for SMEs and stakeholders	½ day training on basics of money, consuming and offering cloud	API, security, backup, ecosystem, DR mgmt, rules template for you	Your plan for data sharing in the European data cloud context	Gamified maturity assessment in a remote 2 h team to team meeting.

The Cloud Game

- About 2 hours game physica event or as a remote session

- A minimum of 3 people from the customer organization are included

- The end result is a normalized numerical maturity assessment on a scale of 1-5

- The gameplay is about answering the questions on the cards, simply yes or no

- 5 suites – Cloud Safety, Cloud Governance, Cloud Adoption, Cloud Technology and Trivia

- The Intel team has the opportunity to challenge some of the answers, you might lose the point

- Through trivia questions, the customer team can win a little money for charity through the game

Assess your
The Cloud Game
cloud maturity