The first INDIGO-DataCloud software release is out!

An unmatched open modular suite of software components for Data and Cloud computing is now available for resource providers and researchers from all disciplines, all around Europe

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The **INDIGO-DataCloud** project is pleased to announce the general availability of its first public software release, codenamed MidnightBlue.

This release comes after an initial phase of requirement gathering which involved several European scientific collaborations in areas as diverse as structural biology, earth sciences, physics, bioinformatics, cultural heritage, astrophysics, life sciences and climatology. This resulted in the development of many software components addressing existing technical gaps linked to easy and optimal usage of distributed data and compute resources. These components are now released into a consistent and modular suite, offered as a contribution towards the definition and implementation of an efficient European Open Science Cloud.

The first INDIGO-DataCloud release provides open source components for:
- Data center solutions, allowing data and compute resource centers to increase efficiency and services for customers.
- Data solutions, offering advanced access to distributed data.
- Automated solutions, allowing users to easily specify and deploy complex data and compute resource requirements.
- User-level solutions, integrating scientific applications in programmable front-ends and in mobile applications.

**Key technical highlights:**

**The Data Center.** INDIGO is providing many new features/services for resource centers:
- Improved scheduling for allocation of resources by the popular open source Cloud platforms, OpenStack and OpenNebula. This provides both better scheduling algorithms and support for spot-instances.
- Support for improved IaaS resource orchestration capabilities using standards orchestration engines through the use of the TOSCA standard, for both OpenStack and OpenNebula.
- Improved QoS capabilities of storage resources for better support of high-level storage requirements, such as flexible allocation of disk or tape storage space and support for data life cycle.
- Improved and transparent support for Docker containers. This includes for example the introduction of native container support in OpenNebula.

**The Data Services.** INDIGO provides a complete set of data-related features that includes:
- Distributed Data Federation through several protocols, in order to support both legacy application and advanced standard interfaces such as CDMI or just simple web interfaces.
- The possibility to federate diverse storage technologies (such as Posix, Object Storage, CEPH, etc) in
a seamless way, letting users exploit data and storage resources wherever they are available.

**Automated Solutions. INDIGO provides a rich set of high-level automated functionalities.**

Some of the most innovative are:

- Improved capabilities in the geographical exploitation of Cloud resources. End users need not know where resources are located, because the INDIGO PaaS layer hides the complexity of both scheduling and brokering.
- Standard interface to access PaaS services. INDIGO uses the TOSCA standard to hide the difference on the different way of implementing services at the PaaS level.
- Support for data requirements in Cloud resource allocations: computational resources can be requested and allocated where data is stored.
- Integrated use of resources coming from both public and private Cloud infrastructures.
- Deployment, monitoring and automatic scalability of existing applications.
- Integrated support for high-performance Big Data analytics.
- Support for dynamic and elastic clusters of resources. HTCondor, Torque and Mesos cluster are supported.

**High-level user oriented services. Researchers and data managers are able to access resources through:**

- Toolkits (libraries) allowing usage of the INDIGO platform from Scientific Gateways and desktop applications.
- An open source Mobile Application Toolkit for the iOS and Android platforms, serving as the base for the development of Mobile Apps.
- User-friendly front ends for building programmable, general-purpose multi-domain Science Gateways.

All the INDIGO components are integrated into a comprehensive Authentication and Authorization Architecture, with support for user authentication through multiple methods (SAML, OpenID Connect and X.509), support for distributed authorization policies and a Token Translation Service, creating credentials for services that do not natively support OpenID Connect.

**The INDIGO-DataCloud software is released under the Apache 2.0 software license and can be deployed on both public and private Cloud infrastructures. Release notes, installation and configuration guides, documentation and support procedures are here.** The software can be downloaded from http://repo.indigo-datacloud.eu.

**Stay tuned.** Updates and new releases of the INDIGO services are expected to come in the forthcoming months. If you want to be notified when a new release is out, register here. The first scientific applications and use cases adopting this first INDIGO release are expected starting from September 2016.

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**About:** [https://www.indigo-datacloud.eu](https://www.indigo-datacloud.eu)

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