Innovation Works™

Technology from the European Molecular Biology Laboratory

EMBLEM
TECHNOLOGY TRANSFER

Embassy Cloud@EMBL-EBI

Challenge

Managing and analysing Big Data has become an enormous challenge in the life sciences. Many genomics research projects generate extremely large datasets that require complex but infrequent analyses. Ever-larger datasets are becoming available in the public domain and simply downloading them locally for subsequent analysis is becoming increasingly difficult.

At the European Bioinformatics Institute (EMBL-EBI), we host and manage the world's largest collection of life science data, currently amounting to 46PB. Many of our users are reporting difficulty in securing the resources locally that they need to replicate our public data sets and services for their own intensive data analysis. As a consequence, we have been approached by users who would like to bring their own workflows, applications and data close to ours in order to analyse them privately and securely alongside each other. Frequently, this will take place in collaboration with several users within their own organisation or with geographically distributed third parties.

We have therefore established the EMBL-EBI Embassy Cloud to enable collaborators or 'tenants' to bring their data analysis activities to the immediate vicinity of our public and managed data sets. The Embassy Cloud is the first-of-its-kind and unique in today's life science landscape: Instead of maintaining local copies of EMBL-EBI's data sets on their organisation's own IT infrastructure for integration and analysis - shipping our data to your compute- the Embassy Cloud enables tenants to bring their analysis to EMBL-EBI's data sets within their own secure virtual machine environment - shipping your compute to our data. Tenants obtain direct access through our internal network to datasets and services hosted at EMBL-EBI and to the institute's powerful computing resources and expertise. This shared, high-performance workspace allows tenants to analyse their data alongside public offerings, using their own, individual computing approaches, regardless of geographical location and without the need for their own significant capital investments in hardware and subsequent operational costs.

We have pioneered the Embassy Cloud with select few academic institutes and with industrial users from large pharma over the last 2 years and are now opening the Embassy Cloud to further tenants.

Embassy Cloud @ EMBL-EBI

Each tenant's Embassy Cloud is a secure, private virtual datacenter hosted within our VMware installation with an allocation of CPU, RAM and storage resources to each tenant. Each tenant is able to specify the internal and external network configuration of their virtual datacentre with simple firewall and VPN functions. The tenant takes on full programmatic control and integration of its virtual datacentre and each tenant organization is solely in charge of their own systems administration inside their Embassy.

The Embassy is hosted within the same UK datacenter where EMBL-EBI's data are hosted and yet it is logically outside the EMBL-EBI's LANs. Traffic to the EMBL-EBI public resources from the Embassy only traverses EMBL-EBI internal networks. EMBL-EBI's staff does not have access to the virtual machines run by a tenant.

Tenants may access the EMBL-EBI catalogue of VM images or create and upload their own. Tenants may also be granted access to specific internal EMBL-EBI resources or have specific EMBL-EBI databases mirrored into their Embassy Cloud (e.g. Ensembl).

The basic version of the EMBL-EBI Embassy Cloud consists of 10GHz CPU, 64GB RAM and 1TB HDD storage. Upscales are available (see below).

Access

Embassy Clouds are typically set up for a minimum term of 12 months. The first step is for you to provide us with some initial scientific plans and approximate resource requirement (such as CPU, RAM and storage) by email to embassycloud@ebi.ac.uk. Once we have received these we will contact you and discuss your requirements in more details to produce a final specification for your Embassy Cloud including a full break down of costs and a copy of our standard terms and conditions. When these have been agreed our Embassy Cloud experts will work together with your IT team to schedule the provision of your Embassy Cloud.

Contact

To obtain further information, please contact:

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To submit a request, please send an email to: embassycloud@ebi.ac.uk.