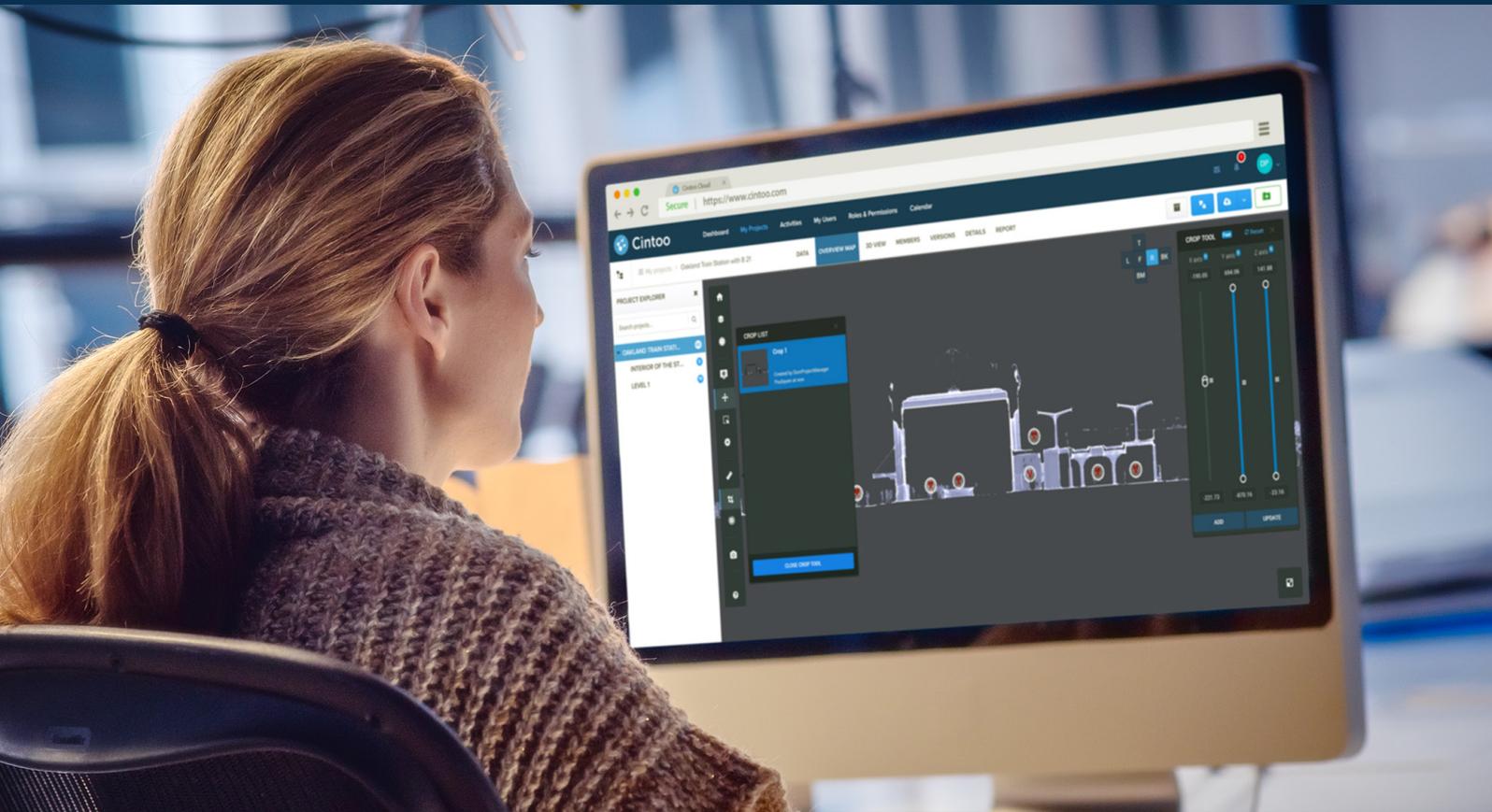


Cintoo Customer Cloud Delivery Options

Choose your own gateway to Cintoo Cloud™



Introduction



Cintoo Cloud™ Reality Data management and collaboration solution is delivered to you via the cloud.

The cloud provides the flexibility, scalability and reliability you need, to simply switch on more computing power, storage or new services as you require them, so Cintoo Cloud™ can grow with you.

Security in the cloud is also recognized as better than on-premises, with broad security certification and accreditation, data encryption and strong data center physical security, all providing a more secure way to manage your business' IT infrastructure.

Different organizations have different cloud requirements, and these are often determined by your IT strategy, existing infrastructure and security policies. Cintoo provides flexibility around cloud options, relying on Microsoft Azure and Amazon Web Services (AWS), the two largest providers of cloud services globally.

A data center 'region' is a collection of one or more data centers interconnected by a low-latency, high-bandwidth network, and is usually within a discrete market or 'geography', typically containing two or more regions, that preserves data residency and compliance boundaries. This allow organizations with specific data-residency and compliance needs to keep their data and applications close.

We also provide three different cloud service delivery options to choose from, when creating each one of your projects on Cintoo Cloud™:

1. **Data Anywhere**
2. **Choose Your Own Data Center Region**
3. **Hybrid (Private/Public) Cloud**

A description of each one of these options, and their key advantages and disadvantages are outlined in the following pages.

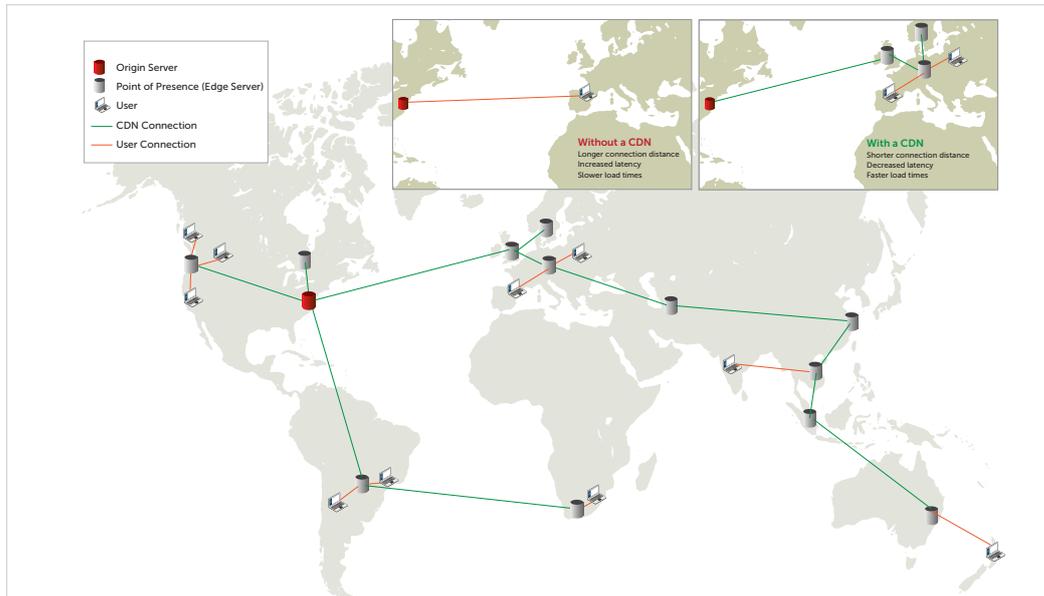
Project Data Versus Project Metadata

Overview

Cintoo Cloud™ divides your terrestrial laser scan projects' data into two distinct types:

- **The Project Metadata** is all the data that concerns your users, members or viewers (email addresses for example) and the project-based annotations and measurements. This is all stored in Cintoo Cloud™ server hosted by Microsoft Azure in Europe.
- **The Project Data** is your organization's data from your laser scans (Reality Capture data or Reality Data), the associated documents, reports (such as the ones generated from your measurements for example), imported IFC models, etc. This document outlines the 3 different types of cloud storage and delivery options that Cintoo has made available for the Project Data, based on your project requirement and size, data strategy, security and existing IT infrastructure parameters. The selection between the 3 options is per project. So, you may have one project with option 1, the next one with option 2, etc.

Option 1: Data Anywhere



The **Data Anywhere** option is the most common cloud option when creating a Cintoo Cloud™ project. This is Cintoo's default setting when creating a new project. Leveraging the Content Delivery Network (CDN) solution provided by both AWS and Microsoft Azure, Cintoo Cloud™ automatically chooses the data region where your Project Metadata and Project Data are stored in the cloud on your behalf¹. Although your data is uploaded to this data center, the data is available as high-bandwidth content through any of 50+ different Points of Presence (POP) around the globe. Remote users can then quickly access and collaborate on your project, regardless of their geographic location.

When users access your Cintoo Cloud™ project, data is streamed from the server that is geographically closest to them. By receiving content from the nearest data center in the CDN, users may be served content from servers in the same continent or country as them, instead of from the other side of the world. This improves latency, and means content loads faster. It also increases the quality of the user experience, through streaming heavy mesh-based Reality Data and faster downloads.

Advantages

- The Data Anywhere option provides your organization with global coverage and the option for massive scalability in minutes.
- The Data Anywhere option offers maximum performance and improved user experience for distant users, especially those located far from the data center hosting the Cintoo Web application and data. These users might otherwise suffer higher latency.
- The Data Anywhere option is the best method for organizations with users across multiple locations to access your project.
- With the Data Anywhere option, the data is always backed up in a second data center location, providing a disaster recovery strategy in case of outages.
- Distribution of user requests and serving of content directly from edge servers so that less traffic is sent to the origin server.

¹ The location for the Cintoo Data Anywhere default data center option is currently Microsoft Azure in Amsterdam, Holland.

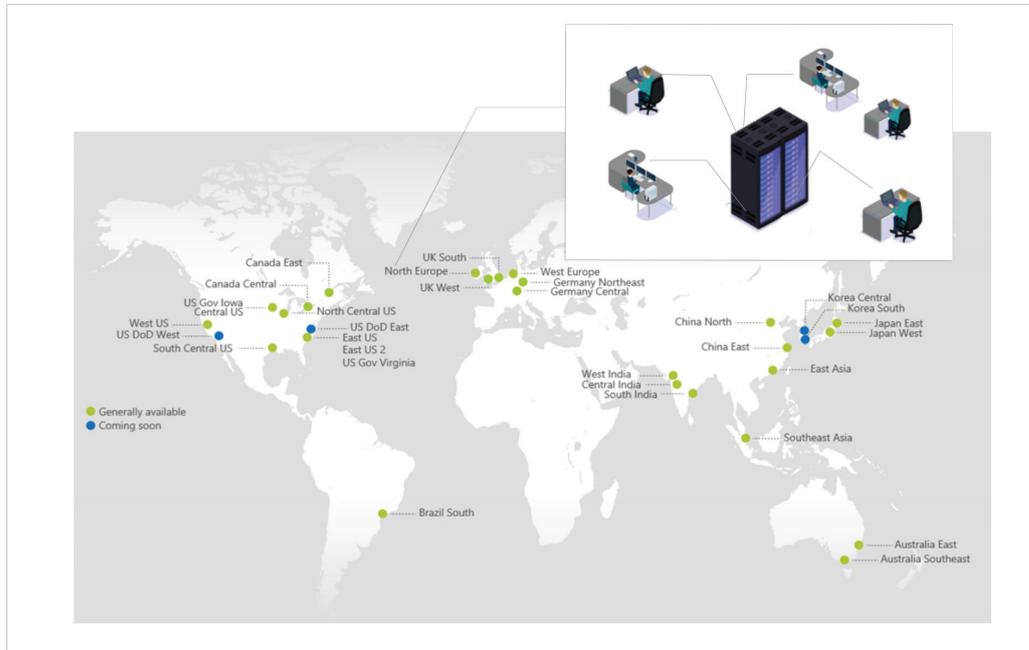
Security Assessment

Both the Microsoft Azure and AWS CDNs implement extra security measures, helping to keep your data safe and secure. However, if your organization has policies around data residency, sovereignty, compliance, and resiliency being honored within geographical boundaries, the Data Anywhere option that leverages the CDNs may not be the right solution, as your data will be distributed across numerous locations internationally using this approach.

Option 2: Choose Your Own Datacenter Region

Azure datacenters internationally

(source: <https://buildazure.com/2017/09/22/azure-regions-and-availability-zones/>)



When you create a project in Cintoo Cloud™, you can choose your cloud service provider between Amazon Web Services and Microsoft Azure and have the option to choose the physical location where you want your Project Data stored from a list of different data center regions. Note that the Project Metadata remains hosted on the Microsoft Azure data center selected by Cintoo to host the Web app.

[Click here](#) for a list of all current Azure datacenter regions

[Click here](#) for a list of all current Amazon Web Services datacenter regions

Note that all the regions listed on these web sites may not be available when selecting the region in the “Create Project” window of Cintoo Cloud™. If the region that you really need for your project is not available in Cintoo Cloud™, please contact the Cintoo team at support@cintoo.com to add it to the list.

Advantages

- High performance, providing the best project/file connectivity and minimal latency if your workforce (or customer base) are clustered around a specific city or region.
- Your data’s residency and sovereignty are protected within geographic boundaries of the region you choose (and the data laws enforced in that region).
- With this option, the data is always backed up in a second data center location in the same region, providing a disaster recovery strategy in case of outages.

Security Assessment

By choosing your own data center region, your data stays stored in the one data region that you choose (and the laws and legislations in place for the data region). Your data will be replicated (to ensure high availability and provide a back-up to protect against outages and failures) in another data center within the same region.

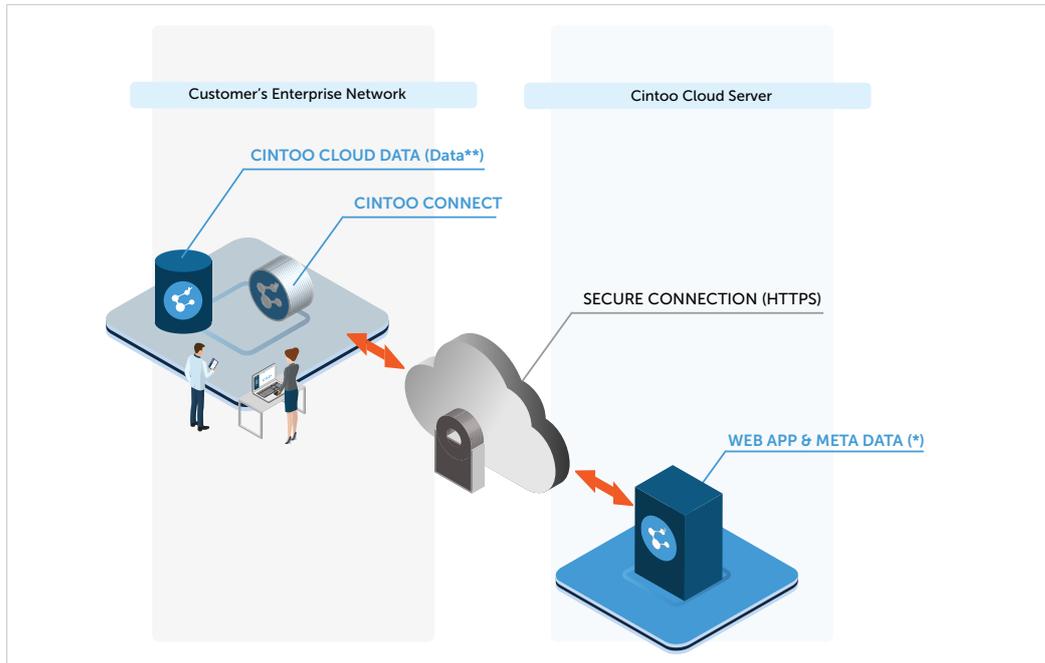
This option ensures that your data will not be replicated in data centers in other countries or regions without your knowledge. It means that your organization will be less vulnerable to potential data sovereignty or compliance issues that can arise when using the Data Anywhere option.

Government Approved Datacenters

By using both Amazon Web Services (AWS) and Microsoft Azure as cloud providers, several government-approved data centers can be selected among the list of data center regions. These data centers meet the US government's strict regulatory, security and compliance requirements and are designed to host sensitive workloads in the cloud. Both Azure and AWS offer government cloud services, delivered via isolated data center regions to manage this sensitive data. These data centers meet United States International Traffic in Arms Regulations (ITAR) and the Federal Risk and Authorization Management Program (FedRAMP) regulation requirements.

Cintoo recommends choosing a government-approved data center for US government agencies, government contractors, private and public commercial entities, educational institutions, nonprofits, and research organizations that work with the government and meet requirements for access.

Option 3: Hybrid (Private/Public) Cloud



The **Hybrid Cloud** option is for organizations with proprietary data, when you need to ensure that the Project Data is stored on your organization's own network or if you have a sophisticated cloud infrastructure already in place. Cintoo can provide access to the Cintoo Connect application within your own cloud environment, enabling your users to access and collaborate on Project Data directly in your cloud. All the Project Data remains stored on your private cloud network, with Cintoo Cloud™ streaming this data via a protocol system. Note that Project Metadata remains hosted on the Microsoft Azure data center selected by Cintoo to host the Web app.

Advantages

- Access to Cintoo Cloud™ projects, large files and data is rapid.
- Your Project Data is stored on your own cloud, behind your firewall and are accessible only to your organization. Hybrid Clouds are better suited for processing or storing sensitive data.
- Compliance, reporting and resiliency requirements are more easily met, as your project data is hosted within your own cloud instance.



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