



Google Cloud, Unizin Data Platform

April 28, 2021

UDP + GCP

1 What are we talking about?

2 Why did we do it?

3 How does it work?

Unizin Products Services Policies

Unizin Data Platform

Dashboard

Unizin Data Platform

The Unizin Data Platform (UDP) is a data platform product that integrates, aggregates, cleans, models, and stores all teaching and learning data into a data lake.

It generates a unified portrait of learners in the context of their learning environments for science, and research, enabling institutions to build effective data-driven practices at scale.

The Unizin Data Platform (UDP) is a cloud-native, single-tenant architecture solution that integrates data from an Information System (SIS), Learning Management System (LMS), and LMS-integrated tools.

Key concepts

Understand the fundamentals of how the UDP aggregates and normalizes learning data to serve a learning analytics ecosystem. The section describes the key features of the UDP and the ideas that inform its technical design. If you are new to the UDP, we strongly recommend that you begin with the Key concepts section.

1. Platform overview
2. Data categories
3. Data models
4. Loading schemas
5. Keymap

Data standards

The UDP supports two data standards: (1) IMS Global Caliper, (2) Unizin Common Data Model (UCDM). The two data standards are complementary and enable the UDP to consolidate all teaching and learning data together.

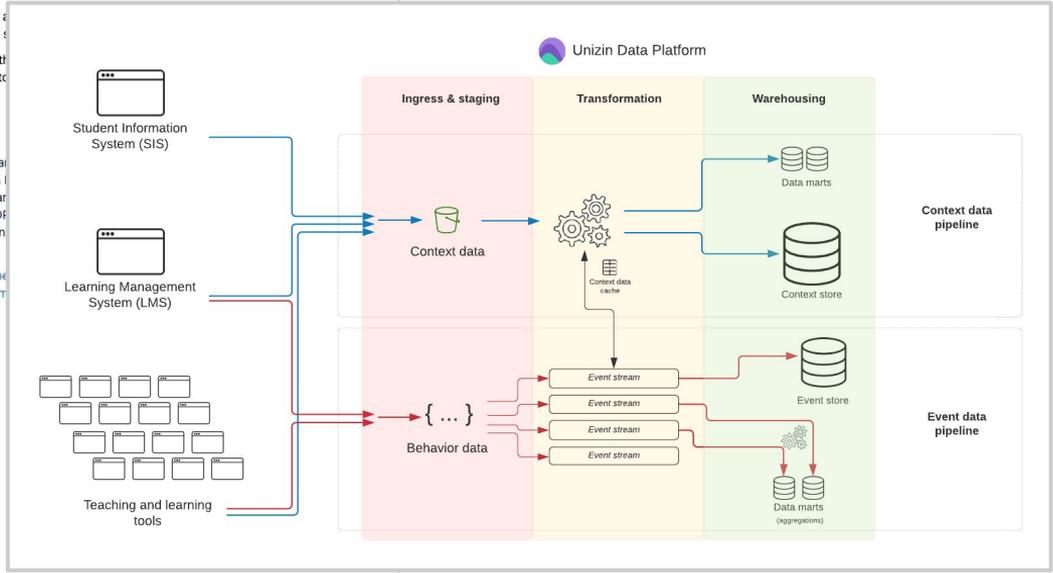
- Support for IMS Global Caliper
- UCDM overview and taxonomy
- UCDM Data dictionary

System overview

The Unizin Data Platform (UDP) is primarily composed of two data pipelines. Each data pipeline creates and maintains the data lakes and data marts that undergird the UDP's data services. There exists one data pipeline for each learning data category integrated by the Unizin Data Platform (context data and behavior data).

1. Context data pipeline
2. Event data pipeline

The UDP is a standards-based integration solution for learning data generated by the SIS, LMS, and teaching tools; and a platform of data services to support the use learning data at scale.



The UDP at Unizin

Unizin is a membership-based, common services provider for HE.

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- Unizin is a consortium of member-institutions dedicated to solving the challenges related to scaling digital education
 - We build software solutions and deliver them as SaaS to members
 - Complemented by a highly-active communities facilitating a range of practices in digital education
 - Strong research component
 - Learning data/analytics is half of our portfolio

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Databricks

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Confluent

Apache Kafka Re-Engineered for the Cloud

Type APIs & services



MongoDB
MongoDB

Set up, MongoDB

Type APIs & services

Datasets for COVID-19 research



Hospital General Information
U.S. Department of Health & Human Services
List of hospitals registered with Medicare

Type Datasets



Global Health
The World Bank
Global health

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Internal Data
United States
World population through time

Type Datasets

Virtual machines



Unizin Data Platform

Version: 1.1
Unizin

Learning data integration and warehousing platform for higher ed

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Overview

The UDP is a standards-based, learning data integration, warehousing, and data services solution. It enables institutions to consolidate their learning data ecosystem and support the use of learning data and analytics at scale. The UDP integrates data generated by the Learning Management System (LMS), Student Information System (SIS), and learning tools integrated into the LMS via the IMS Global LTI standard. The UDP enforces the use of two data interoperability standards: IMS Global Caliper and the Unizin Common Data Model.

[Learn more](#)

About Unizin

Unizin is a leading technology consortium serving higher education.

About Kubernetes apps

[Google Kubernetes Engine](#) is a managed, production-ready environment for deploying containerized applications. Kubernetes apps are prepackaged applications that can be deployed to Google Kubernetes Engine in minutes.

Additional details

Type: [Kubernetes apps](#)

Last updated: 3/17/21

Deployment Environment: [GKE](#)

Category: [Big data](#), [Education](#)

Version: 1.1

Tag: 1.1

Repository path: [marketplace.gcr.io/unizin-public/unizin-data-platform](#)

Container images: [1.1](#), [batch-ingest:1.1](#), [caliper-enricher:1.1](#), [ubbagent:1.1](#)

Why did we do it?

Vision

Unizin and Google Cloud share the view that institutions must leverage and innovate with learning data to serve students well.

We also believe that:

- Data is owned by institutions only if they can control/use it
- Without data standards, we'll never scale
- Vendors must adopt data standards/service paradigms to serve institutions well

Technology & business model

We see too little innovation and competition in the learning analytics and student success market.

Factors: high barriers to entry, low standards adoption, monolithic technology models, and multi-year enterprise contracts.

An alternative: decouple and commodify key elements of the tech stack; enable cloud-first strategy; and, offer rational pricing/business models consistent with cloud solutions.

Complementarity

There is strong complementarity between the role of the UDP and [Google Cloud's Student Success Services](#).

The UDP brings data into an institution's cloud environment, where it becomes available to a range of data/analytics-driven student success solutions.

How does it work?

It's like installing an app from an app store... almost.

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- Deploy the UDP in your GCP infrastructure (not SaaS)
 - Operational and service responsibility lies with institution
 - Monthly FTE-based pricing model
 - UDP as point-solution in a broader GCP engagement
 - No Unizin membership required



Thank you

unizin.org