commercetools
Next generation commerce

commercetools Feature Guide:
Work with, not around, your commerce platform.

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Introduction

The world of commerce, like the general software landscape, has seen massive shifts in recent years. Businesses have been racing to innovate in today's extremely crowded and competitive world. [Headless has gone mainstream](#) and the boom of businesses looking to undergo digital transformation has no end in sight. commercetools has also shot up the ranks, going from contender to market leader in the commerce platform space within a matter of three short years.

commercetools is the go-to choice of many enterprises around the world. Our cloud-native, headless commerce platform provides businesses with the building blocks for the post-web era.

Own Your Customer Experience with Modern Commerce

The commercetools platform, like many other modern, best-of-breed enterprise solutions in the CMS, CRM and other spaces, was built for current and future needs in mind. Unlike the lumbering, monolithic software suites of yesterday which are expensive, difficult to work with and poorly scalable, commercetools is nimble, flexible, scalable and highly extensible. You're able to build a customer experience that fits your business' needs perfectly, almost as if you had it custom-built — without the extensive time and financial costs, and giant development teams needed for an actual custom in-house solution.

Functionality for product catalogs, orders, customer profiles, promotions and discounts, plus business administration tooling, and more allows our single platform to cater to enterprise commerce needs. The easy ability to add integrations and extensions from our extensive tech partner network, or even develop your own thanks to our comprehensive extension features and user-friendly documentation, allows commercetools to cover a range of use cases even broader than what its out-of-the-box feature set suggests.

Modern MACH Principles

The core pillars behind the forward-thinking commercetools platform are the MACH principles. MACH, which stands for Microservices, API-first, Cloud-native and Headless, are the four technologies that support a composable enterprise — that is you are able to craft the customer experience to the precise needs of your organization in terms of functionality and scalability, made possible by modular and interchangeable components.

commercetools stands behind support for microservices, powerful APIs, running in the cloud and interchangeable 'headless' front-ends to make it easier for all our customers to build highly-customized, functional and modern experiences.

However, it is not a requirement to use all four MACH principles to enjoy the features of our platform and you are free to create a solution using what works for your organization. For instance, you can opt to consume only APIs and may not use microservices, and still work with the commercetools platform.

Microservices
Microservices are specific functions that can be developed, deployed and managed independently; which results in faster updates and quicker access to new features. These are key to modern architecture, giving them the traits of modularity, scalability and flexibility they're known for, over monolithic systems.

API-first
APIs are what allows communication between programs. They are the threads that tie functionality between your backend and frontend to power your commerce experience. Event-based and direct APIs make it easy for third-party applications to be integrated and can be used as the basis for a microservice architecture.

Cloud-native
Businesses have moved their web operations into the cloud, thanks to platform providers like AWS, GCP and MS Azure. A cloud-native application is built and operated within the cloud environment, with the ability to take advantage of containers, microservices, serverless/function-as-a-service (FaaS) and infrastructure expressed in code. commercetools offers cloud-native tools for subscriptions and extensions.

Cloud-native applications allow for faster development and better scalability by taking advantage of microservices, being API-centric and decoupled from server hardware and operational dependencies. Since updates are deployed seamlessly and in the background, there is no longer the need for you to keep up with versions and deal with disruptive update processes; overall, better maintainability and security is achieved for you.

Headless

Microservices are specific functions that can be developed, deployed and
The term 'headless' commerce refers to the decoupling of the frontend and
backend so it's now possible to update either the content presentation layer
or business functional (commerce) layer without touching the other. This
ensures maximum flexibility and speed so you can react swiftly to market
changes — a news-triggered flash sale, a competitor announcement, weather
conditions that impact your business — within hours, not weeks. You can also
build and deploy innovative shopping experiences across all touchpoints: web,
smartphone, POS, voice, IoT devices, AR/VR, car displays, and many more with
consistent branding and functionality.

MACH Alliance

Being the first to market in 2013 with a headless commerce platform,
commercetools is a founding member of the MACH Alliance, an organization
of enterprise software vendors with solutions for the modern, digitally-
transformed era that support Microservices, are API-first, Cloud-native
and Headless.

Customizing Commerce to Your Needs

commercetools Accelerator

The Accelerator program makes it easy to get a commerce presence online
and ready to take orders in a short timeframe by pairing the powerful
commercetools platform with a frontend solution provided by one of our
participating tech partners. This is advantageous for customers looking to get
started and quickly launch an MVP during their transition over to
modern commerce.

commercetools Integration Marketplace

The Integration Marketplace leverages our wide partner network to be the
one-stop place to discover supported 3rd party integrations and extensions
that allow you to enhance the functionality of the commercetools platform,
and connect it to other solutions within your business ecosystem. Launched
in mid 2020, the Integration Marketplace has over 30 integrations and
extensions, with plans for continued growth in assortment.

Powerful extensibility and customization

To supercharge your ability to customize commerce and make it yours, the
commercetools platform supports a high degree of extensibility, including
custom objects and fields, Custom Applications in the Merchant Center,
extensions, subscriptions, and of course APIs — which themselves are also
extensible.

Core Features

As you'd expect from a commerce platform, commercetools provides functionality for product presentation with high-resolution images, and covers pricing, discounts, shopping cart and checkout, payment, shipping and customer management features. The platform also allows for management of users, stores, channels and more, and has a permissions system that allows you to set up your own roles that are tailored to your business and setup, so only the right eyes get to see the right data.

Language-aware, full-text search is provided so your users can easily find what they want via comprehensive product searches. Easy navigation and faceted filters allow you to scope down results by countries, channels, currencies and more. commercetools also provides marketplace functionality for brands and merchants to make their commerce available to third parties.

When paired with a frontend solution, the commercetools platform allows you to craft the perfect customer experience, using APIs to call upon the above data to be displayed to your shoppers.

Merchant Center
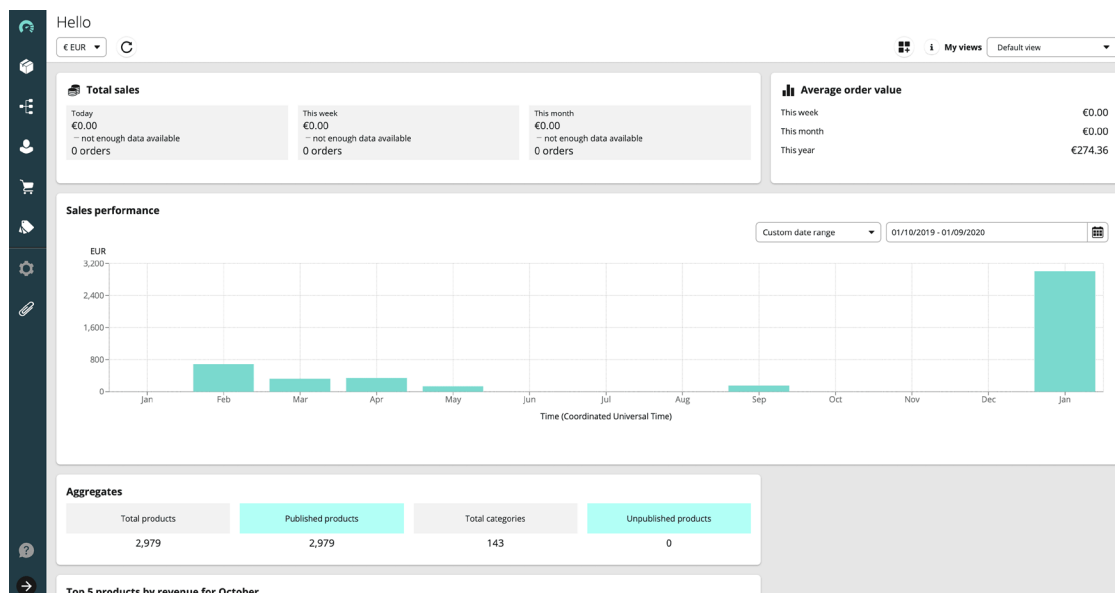
Businesses need to handle their most critical data and processes efficiently while keeping up with changing market conditions. The commercetools Merchant Center is the command center made precisely for that.

WIth its intuitive user interface, you can manage product data and product types, discounts, orders, categories, and customer data for all retail channels with just a few clicks. Additional functions, such as configurable forms and batch processing, help you to quickly and easily complete your daily tasks.

Dashboard

The Dashboard provides a comprehensive overview of your business metrics, all at-a-glance with interactive visualizations. Sales performance across periods of time, average, average order value per store, top products with the highest revenue and number of new customers/carts are just some of the things you can add to view. The Dashboard's layout and cards are highly customizable, and allows the creation and saving of multiple views.

The Dashboard was rewritten from the ground up in 2020 for improved accuracy, performance and configurability.

Products, Orders and Shipping

You can view, sort and manage orders within the Merchant Center, before going into item details, detailed breakdown on order total, taxes and discounts, as well as create new carts and orders. You can also view and process orders, including the management of delivery and parcel options of orders and track shipping status.

Customer Management

The Merchant Center gives you the ability to manage all customer data, including signups, order history and customer groups, with a user-friendly address book style interface.

Store & Channel Management

The Merchant Center also serves as the central hub for modelling the business setup and maintaining retail channels and touchpoints. You can create new channels (different ways you make your products available, such as physical and web stores, on mobile apps, smart appliances and more) and stores (different geographical locations) across borders around the world.

Individual stores can hold their own carts, orders, customers as well as languages and channels. You can then configure permissions to manage who can work with each store and what they can work with.

commercetools facilitates our global customer base by allowing them to maintain different locales, currencies and tax settings to support international business. In this area, you can also manage available delivery/shipping options and define complex shipping logic.

Powerful Discount Handling

Sales and promotional events play a huge role in commerce today and our Merchant Center gives you advanced discount management capabilities across all your retail channels from one place, and includes an overview of all active product discounts across stores.

You can create discounts using individual discount codes and discount code groups that can be applied to specific channels, countries and customer groups. You can set rule-based promotions and configure discount codes to be customer-specific. Discounts can be used not just to slash product prices, but also provide free shipping.

Our innovative and powerful Cart Discount Rule Builder lets you create dynamic discount rules and multibuy discount logic. This allows you to get incredibly creative with how promotions work and allows you to incentivize purchasing of specific products, or combinations or quantity of products.

Projects and Organizations
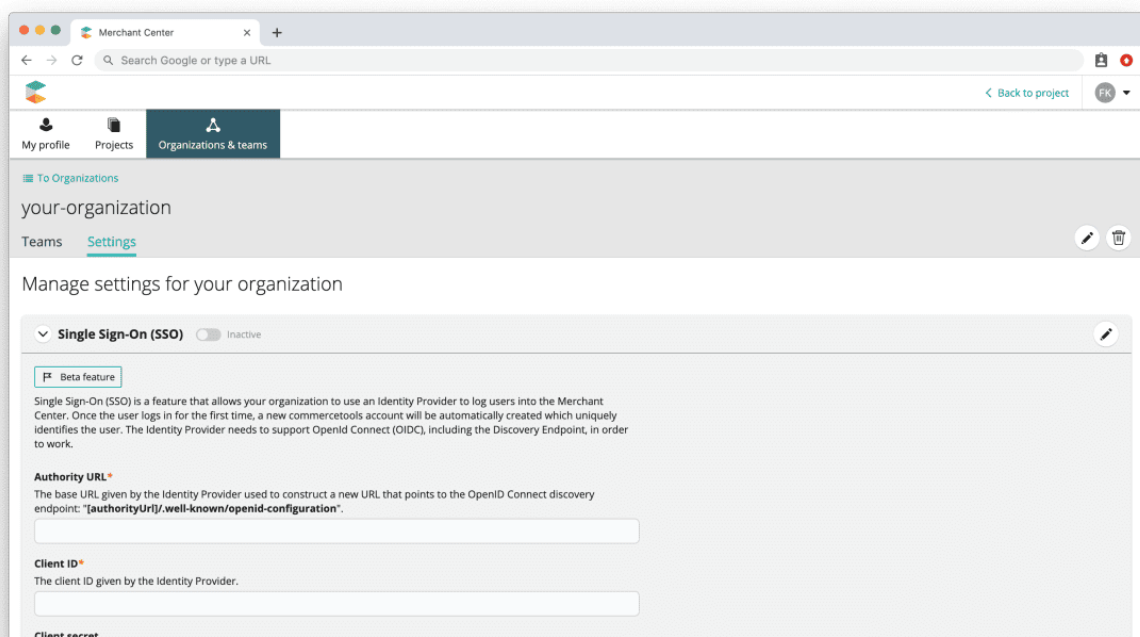
The Merchant Center allows you to manage projects with distinct sets of product data and store configuration settings. A single project can provide the data for multiple selling channels. Projects belong to a single organization in commercetools.

You can also set up your organization(s), associated teams, and the users that belong to each team.

User Management and Permissions

You can create any number of users and user groups within the Merchant Center, and configure every single one of those with specific permissions. Our extensive permissions system allows specifying or limiting actions such as viewing and editing/deleting of items within the Merchant Center; and the creation, modification and deletion of projects and teams within the organization. For instance, you may want to set conditional permissions to limit access of employees to only specific stores and certain orders they are involved with.

The Merchant Center supports Single Sign-On (SSO) for easy user authentication and access using their existing enterprise account. This feature is currently in beta.

Change History

Available as an optional feature, Change History tracks changes in the Merchant Center, allowing you to audit and view who performed them, allowing for increased transparency and action accountability. You can also undo certain actions directly via the audit log.

Custom Applications
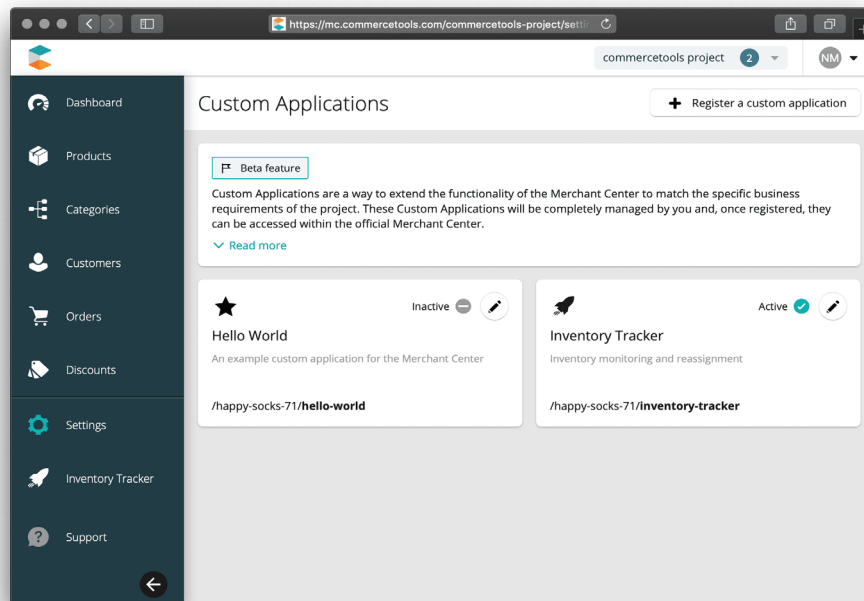
Custom Applications allow you to customize views in the Merchant Center to your liking, including building a combined view to manage everything at-a-glance. You can develop your own Custom Applications to serve the functionality you need, or choose to grab data from best-of-breed apps from other modern MACH software vendors.

Product Information Management (PIM)
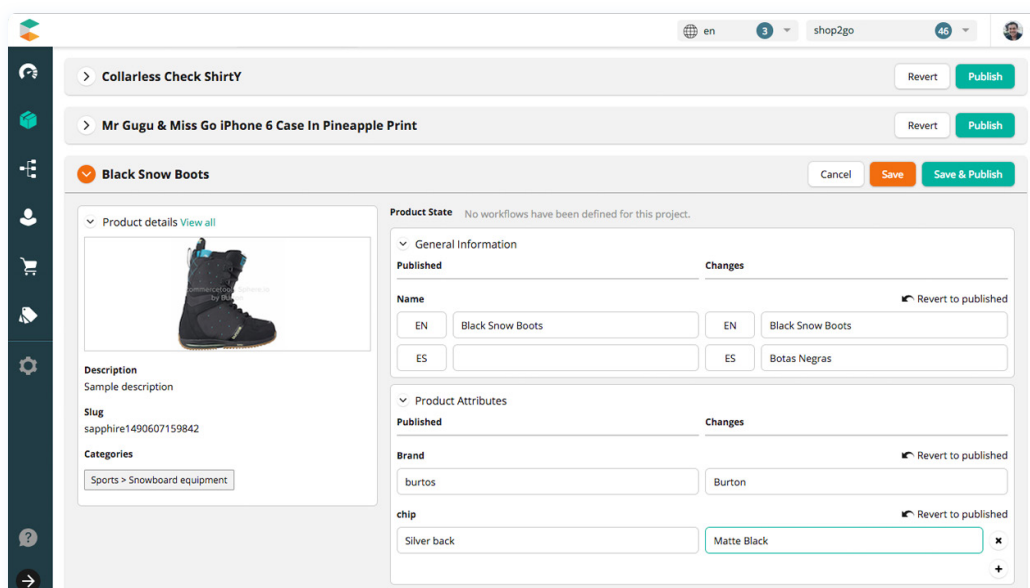
The integrated Product Information Management (PIM) enables businesses to access all of their product data — while its versatile interface helps you handle even complex catalogs with just a few clicks. You can find, view and work with products very quickly and efficiently, especially thanks to our enhanced Product Lists and Product Search features which were both revamped for 2020.

User Interface

- Fast and intuitive user experience
- Fast product search and filters
- Adding, editing and deleting product data
- Quick access to products or variants (through product key, variant key or SKU)
- Configurable views for product lists, product details and filter sidebar
- Verify, edit, approve, or reject pending changes on products
- Bulk update: Update several product attributes for multiple products all at once

Products, Product Types & Attributes

- Add all the products you have
- Define your own product types and attributes
- Flexible data types: localizable text information, lists, predefined dropdowns, numbers, dates, time, money in any currency and more.
- Multiple languages / locales
- Image management for product variants
- Similar products (Machine Learning feature, see related section below)

Product Variants & Options

- Any variation from sizes and colors to complex configurations across many attributes and dependencies

Categories

- Any number of categories, category levels, and product-to-category relations
- Search and filter categories
- Category recommendations (Machine Learning feature, see related section below)

Images

- Maintain high-resolution images and views of products
- Image management for product variants
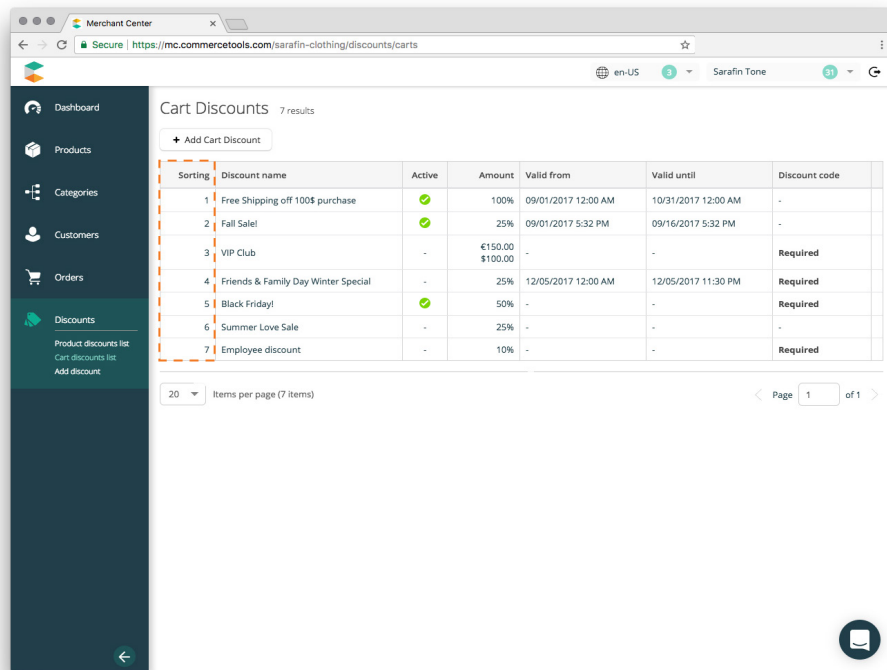
Inventory Management

- Multiple inventories, e.g. multiple warehouses, local or backorder channels
- Price and inventory information for all retail channels
- Inventory tracking modes
- Ability to integrate 3rd party ERP systems

Pricing

Our powerful pricing system supports tiered and country-specific pricing, plus unlimited currencies, including custom currencies (for stores that price products in terms of reward points, for example) and high precision pricing that uses smaller digit denominators. You can also set product variant prices per currency, country, distribution channel, customer group, or time frame

Carts & Orders

Stores concept, carts and orders can now be bound to stores and access to these can be restricted on a per-store level.

With commercetools you enable e-commerce functionalities everywhere – no matter if you need to run a webstore, a mobile application, a point-of-sale or would like to connect post-web touchpoints such as voice devices, chatbots, AR/VR applications or social media channels. Our cart and order features cover anything from flexible pricing, multi-currency, and shipping options as well as multiple discount variations.

Carts

- Calculate the current price based either on address, product distribution channel, tax settings, discount rules, shipping costs, user groups in real-time
- Multiple carts per customer
- Replica the cart to create a new cart
- A custom line item is a generic item that can be added to the cart but is not bound to a product
- My Carts endpoint provides write access only to a limited subset of the fields on a Cart (Beta Feature)

Orders

- Synchronize all orders with multiple backend systems
- Manage incoming orders from all channels in one place
- Line item level delivery and inventory channel routing
- Line item level order workflow definition
- Returns management
- Subscriptions
- Guest purchases
- Order Edits (Beta Feature)
- Replica the order to create a new cart
- My Orders endpoint provides no write access to the fields on an Order (Beta Feature)
- Import Orders via the Import API endpoint

Taxes

- Support for all international tax requirements
- Tax settings based on the product, location (country, state) and customer
- Connections to external tax calculation services
- Support for digital and physical goods
- Support for net and gross prices
- Multiple rounding modes available to fit ERP requirements
- Item-based taxation

Shopping Lists

- Implement a "save-for-later" feature for an individual customer, a shareable wishlist, or a public collection of products
- My Shopping Lists endpoint provides access to a limited subset of the fields on a Shopping List (Beta Feature)

Payment & Shipping

commercetools supports various international payment methods and also offers custom integrations. Our platform lets you add new shipping countries and delivery methods on the fly, supporting international business models and cross-border retail.

Payment

- Credit cards, debit cards, direct payments, offline payments, individual payments
- Connect to 3rd party payment gateways and services
- Refund payments, document chargebacks and cancellations
- Provides extra security in scenarios when the client application must communicate directly with the commercetools API on behalf of a customer, such as commerce in a mobile application using My Payments endpoint provides access to a limited subset of the fields (a payment stub) on a Payment (Beta Feature)

Additional capabilities for payments are available via partner integrations and extensions, which can be found on the commercetools Integration Marketplace page for finances.

Shipping

- Multiple shipping rules and integrations
- Fixed pricing
- Automatic shipping cost calculation
- Tracking codes

Additional capabilities for payments are available via partner integrations and extensions, which can be found on the commercetools Integration Marketplace page for shipping.

States

Model states of certain objects, such as orders, line items, products, reviews, and payments in order to define finite state machines reflecting the business logic

Machine Learning and AI

Our machine learning and AI initiatives fall into 3 dimensions: Automation, Data Quality and Customer Experience.

Automation

We provide services to automate daily tasks like category assortment, product change management, and more For instance, many retailers have to maintain a set of thousands or millions of product categories. Our category recommendation engine uses deep learning to predict which categories fit to a given product based on product images or descriptions. This makes the process of assigning categories easier, faster and reduces the risk of missing important categories.

Data Quality

Product data quality as a crucial factor for the success of our customers. Low data quality can lead to costly mistakes, lost sales and frustration for both customers and category managers. Our machine learning features make managing data quality a breeze, allowing for:

- **Duplicate Detection:** One of the most common problems with data quality is that the same products are accidentally added twice to a database. Despite being duplicates, there is often some minor variation in the data, which makes it hard to detect these cases. Our duplicate detection algorithm learns hidden patterns in product data based on product name, images and metadata, and makes it easy to identify and clean up these mistakes.
- **Data Enrichment:** Our data enrichment feature detects when important data is systematically missing and generates recommendations for how to fill this gap.

Customer Experience

We also use machine learning to provide image search functionality, which allows efficient finding of products just based on images. This allows for use cases like finding products that match an image from a user's mobile phone and for recommending visually similar products

For more conventional machine learning features like product recommendations (including product bundles, cross- and up-sell), we offer partner solutions with seamless integrations to our platform.

You can learn more about utilizing machine learning features and relevant APIs on the related documentation page.

Infrastructure Behind the Features

commercetools is provided as a cloud-hosted, highly-scalable service. We deliver multiple updates per week (sometimes per day), high-scalable cloud servers in the most modern and secure data centers around the globe and many more features.

As a multi-tenant platform, commercetools runs a single software instance and infrastructure that serves multiple customers. You could single-tenancy to a row of shops with each business operating in their own building, while multi-tenancy is a high-rise office building with different businesses spanning various floors.

Multi-tenancy saves you time and money by lowering costs via economies of scale and leaving software and infrastructure upkeep and operations to the experts, freeing resources to focus on running your business.

We support Continuous Delivery which allows you to deploy updates multiple times a day. Our releases are not performed at fixed cycles, but are instead pushed live as soon as they're ready, so you can always enjoy the latest features and security, all the time without worry.

High Performance and Availability

- Fast response times (<100ms average)
- Cloud infrastructure with redundant everything, from hardware to databases and application layer, for high availability
- Automatic scaling / rapid elasticity
- 24x7x365 monitoring with public status page
- Comprehensive SLAs
- Automatic backups

Industry-Leading Security

- OAuth2 for authentication
- View, create and delete API clients
- Granular scopes and data fences
- SSL encryption (TLS 1.2)
- Leading industry standards in security and compliance

Developer Tools & SDKs

commercetools offers everything that you need to build a feature-rich and highly functional customer experience via our REST APIs. We are highly tech-agnostic, meaning you can use any programming language or framework like Java, .NET, PHP, Node.js, and many more to work with our platform — saving you time and costs by letting your experts dive right in with a workflow and environment they're immediately familiar with.

HTTP API

As an API-first platform, all our APIs are modeled before any code is written. Once the API is defined, we generate both the server-side implementation and client stubs.

All functionality in our platform is 100% accessible over APIs. From core product functionality, to imports/exports, to configuration, to system integration, we have 100% API coverage. Absolutely no functionality is available through other means and there's no access to our underlying datastore or search engine.

Learn more about our APIs and more on our documentation website.

GraphQL

The commercetools platform supports GraphQL and has the highest GraphQL coverage among any commerce solution in the enterprise market. GraphQL is a powerful data query language for APIs that allows client developers to retrieve the exact data they want from any source; enabling brands to build experiences faster.

By serving as a layer on top of APIs, GraphQL complements APIs instead of being a straight-up replacement for them. This means compatibility and familiar ways of working are maintained while giving your efficiency a big boost with the pros of GraphQL.

GraphQL is straightforward and works with any programming language; and GraphQL increases the quality of life for developers, making them more productive, while improving performance of your project, letting it load faster while reducing potential for downtime.

You can find more detailed info on how we support GraphQL in our documentation.

Demo Implementations, SDKs & Code Samples

- Open source code available on GitHub
- Docker and Cloud ready; quick deployment via Heroku
- SDKs: JVM, PHP, Node.js, .NET Core
- Event Subscriptions
- Platform Extensibility via API extensions
- Command Line Toolkit

Try commercetools for free

We offer a risk-free, fully-functional 60 day trial — the longest and most comprehensive in the industry — to allow you to take a deep dive into the commercetools platform. Test out the Merchant Center and utilize our APIs to their full extent so you can create projects and develop your own commerce experience.

Signup for a trial account to get started today — no credit card required!

Get in touch with our experts

commercetools serves an array of enterprise customers across the globe, from North America to Europe and from APAC to Australia, with office presence and partner networks to match.

Reach out to our experts and let's discuss how our industry-leading commerce platform can take your business to the next level.

About commercetools

commercetools is a next generation software technology company that offers a true cloud commerce platform, providing the building blocks for the new digital commerce age. Our leading-edge API approach helps retailers create brand value by empowering commerce teams to design unique and engaging digital commerce experiences everywhere – today and in the future. Our agile, componentized architecture improves profitability by significantly reducing development time and resources required to migrate to modern commerce technology and meet new customer demands.

The innovative platform design enables commerce possibilities for the future by offering the option to either use the platform's entire set of features or deploy individual services, á la carte over time. This state-of-the-art architecture is the perfect starting point for customized microservices, enabling retailers to significantly reduce time-to-market for innovative commerce functionalities.

With offices in Germany and the United States, B2C and B2B companies from across the globe including well-known brands across many industries, including fashion, food and retail, trust commercetools to power their digital commerce business.
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