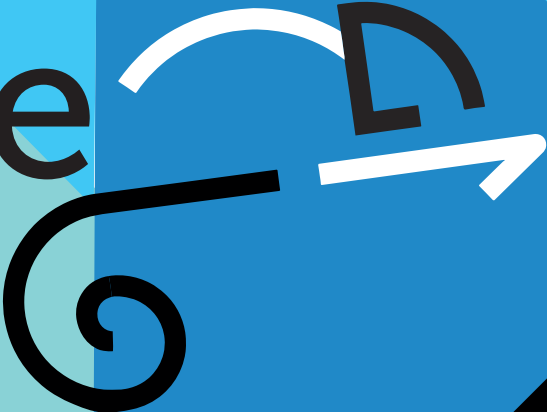


Discover
Eclipse Keyple™
the open source SDK
for ticketing

keyple The logo graphic consists of a white arrow pointing right, a black arrow pointing left, and a black spiral shape.

Eclipse Keyple, the open source SDK for contactless ticketing

Keyple speeds up integration and application development by allowing multimodal transport, public transport, events and activity services to quickly connect with a common ticketing system.

As an open source technology, Keyple offers the consistency of building to the Calypso ticketing standard, but does not lock you into a specific ticketing system. Keyple turns complex ticketing, transport, and event access systems into a simple integration that can be managed by terminal readers and gates that use smart cards and mobile apps to gain entry and exit. Plugins are being created, or can be created by other developers, to ensure ticket processing works with all hardware and is compatible with all transport and event management architectures. Calypso's high standards of security, data privacy and interoperability are, nonetheless, always maintained.

Free, easy-to-use and flexible

- Interoperable with any smart card reader solution (standard/proprietary, local/remote)
- Compatible with any terminal architecture (mobile, embedded, server)
- Options for creating add-on features that incorporate Calypso's advanced security together with non-Calypso smart cards for ticketing and payment

Built by developers, for developers

- Open source libraries in Java, C and C++
- Developer-friendly, up-to-date documentation, code samples and how-to guides
- Accredited and hosted by the Eclipse foundation
- Help desk
- Active on GitHub and within the Eclipse community
- Starter kit

Tailored to public entities' requirements

- Audit and certification
- Permanent compliance to the latest Calypso release
- Exchange platform between providers and transport authorities
- Separate maintenance for software and equipment
- Online and offline trainings available that will help you get the most of Keyple

Whether you are a transport authority or operator, a mobility provider, a systems integrator, an event manager, a mobility aggregator, or a multi-mobility startup, Eclipse Keyple will allow you to:

- Easily integrate with our highly secure and interoperable standard, Calypso
- Improve your services by reducing your development costs
- Help your networks create new door-to-door experiences by being able to offer a single ticket for mobility, event and entrance journeys
- Increase the discoverability of your products and services as you integrate into an ecosystem of related services
- As a unique, fully open source technology, you will also have access to an active community of innovative, creative leaders to learn from and seek support when you are building the next generation of tools for mobility and associated services. The Keyple SDK community are innovators and entrepreneurs dedicated to the new mobility evolution.



How Eclipse Keyple works

Keyple is built on a solid foundation of Calypso's ticketing standards.

Keyple makes it easier, faster and less complex to build in alignment with the Calypso standards and remains always up-to-date with any improvements to the standards.

To fully understand how Eclipse Keyple works, it is important to discern two main components of ticketing technology:

— Smartcard readers: Readers are situated at the entrance and exit of events, venues and transport sites. For example, a smart reader could be a terminal, a portable scanning laser gun, or a swipe tablet area that is embedded into a door, vehicle or gate. Code is written for a terminal to set the parameters for allowing cards or apps to transmit ticketing information data. Sometimes in a distributed architecture system design, the code for the smartcard reader is not on the terminal, but in a cloud environment, so the smartcard reader sends the data to cloud-based architecture.

— A processing component: This is behind-the-scenes code that is able to take the data from the smart reader terminal and, in milliseconds real-time, analyze the balance of the ticket, confirm the permissions for entry, and update the data on the ticket (for example, to confirm that the ticket holder can enter the gate or vehicle, and then to deduct the cost of the journey and calculate the new balance).

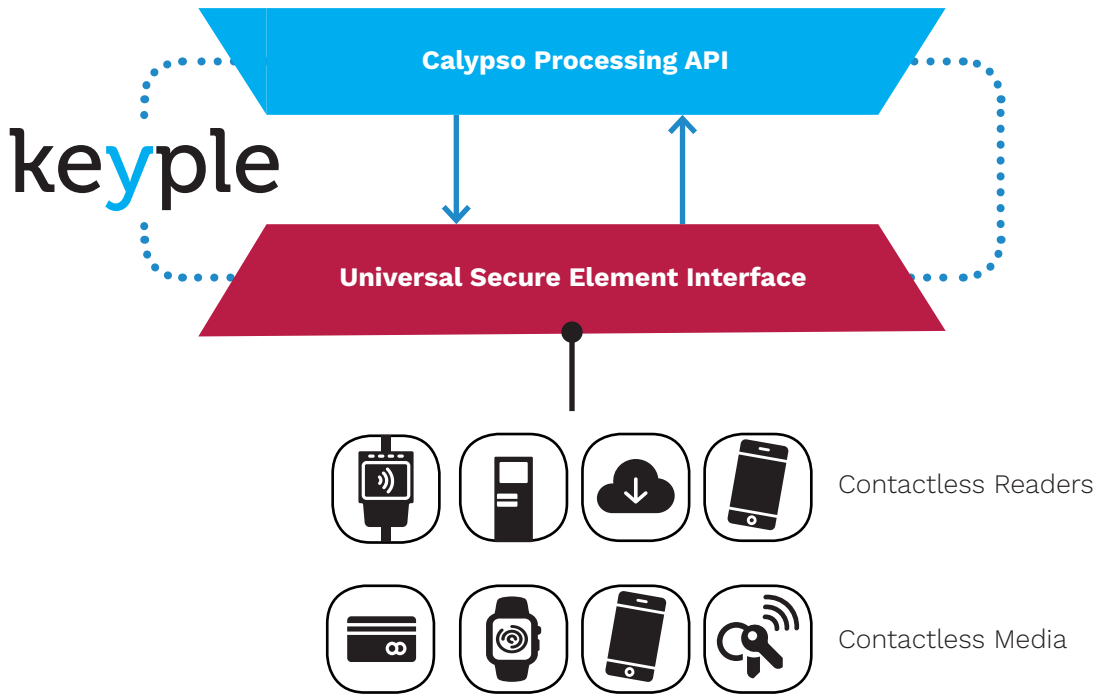
Keyple comes with dedicated plugins that integrate directly with smartcard readers that have been built on standard software interfaces including PC/SC, Android NFC, and Android OMAPI.

In cases where there is a distributed architecture design, Keyple includes a Remote Secure Element API plugin so that a smartcard terminal can be operated remotely, as if it were local to the terminal, and ensures that robust security and speed is not sacrificed in a cloud-based system. The Calypso Processing API is also available as a Keyple extension. This component carries out the terminal processing element of ticketing technology. Access to Calypso's security features are automatically managed by the Keyple extension.

The Keyple SDK enables ticketing to be added to a whole range of entry, ride and access services including public transport, parking, event attendance, integrated mobility, and rideshare services. Account wallets are updated to ensure single entry to venues and events as required, and current balance at end of journey, and revenue sharing for multi-services via account-based ticketing.



Applications



Why Eclipse Keyple is your solution?

Keyple is the most simple and flexible fully open source solution for managing Calypso and other technologies under any ticketing system. Keyple brings Calypso's feature-set to developers working with integrated mobility, public transport, event management and venue access.

Keyple eliminates the complexities of integrating on top of existing standards. It allows you to focus on building applications that address the most pressing needs of your users, all while benefiting from Calypso's advanced security.

The open source Keyple SDK technology enables an integration of all mobility schemas. From bike and ride-share, public transport, scooters, parking, events management, and buildings and venue access, anyone can use a single ticket or mobile proof-of purchase and travel seamless through these services.

Help your clients become mobility platforms

What can I do with Eclipse Keyple?

- Quickly build new apps and integrations that conform to the Calypso standard and other ticketing schemas.
- Extend the value chain from simple transport integrations to link parking, events, multimodal transport, and venue entry.
- Contribute and learn from a dynamic community of experts building cutting edge, open ticketing technologies.
- Reduce time for product development costs and benefit from a reliable, market-tested, secure, and interoperable technology.
- Use Keyple's libraries to enable instant payments, remote top-ups, event and multimodal transport integrations, connection to park-and-ride services, and more.
- Easily create applications or services compatible with existing card-centric or server-centric systems.
- Easily integrate with Hoplink initiatives that are already building seamless ticketing a travel across regional ticketing and transport authority borders and that integrate parking with transport.

Key benefits and features

- Straightforward access to Calypso, a leading ticketing standard in the market (used in many public transport networks across 25+ countries).
- Autonomy over how you want to improve your offerings.
- Shorten your development time via a reduced-cost and reliable SDK.
- Open source tools and documentation.
- Support from Keyple's team and open source community.
- Standard way to handle any smart card or SIO-enabled reader.
- Create commercial plugins and integrations.
- Access audit and certification in accordance with government buyers' needs.
- Always up-to-date SDK, guaranteed to remain compliant with the latest Calypso release.

Why trust Eclipse Keyple?

Keyple is an Eclipse open source project developed and led by Calypso Networks Association, which has been the leader in contactless electronic ticketing transportation standards since 2003. For many years, our mission has been to create innovative solutions that are fully interoperable, reliable, secure, and open. We collaborate with a dynamic network of city leaders and transport authorities that are keen to work with system integrators with Calypso standard expertise.



Reach out

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Calypso
Networks Association