

CYPEX

Revolutionizing PostgreSQL Application Development



CYBERTEC

DATA SCIENCE & POSTGRESQL



CYPEX

REVOLUTIONIZING POSTGRESQL APPLICATION DEVELOPMENT

CYPEX stands for CYBERTEC Prototyping Express and is the fastest and most innovative tool to develop database driven applications. With CYPEX your organization can be faster, more agile, and develop working solutions for less cost. Your business can adapt to changing requirements with ease.

Traditional application development takes a lot of precious time, which is not feasible anymore. Empower professional developers and enable everyone in your organization to be a part of the solution and not the problem.

> "Changing requirements are the rule
> - not the exception"

CYPEX is designed to build PostgreSQL applications faster than ever before.

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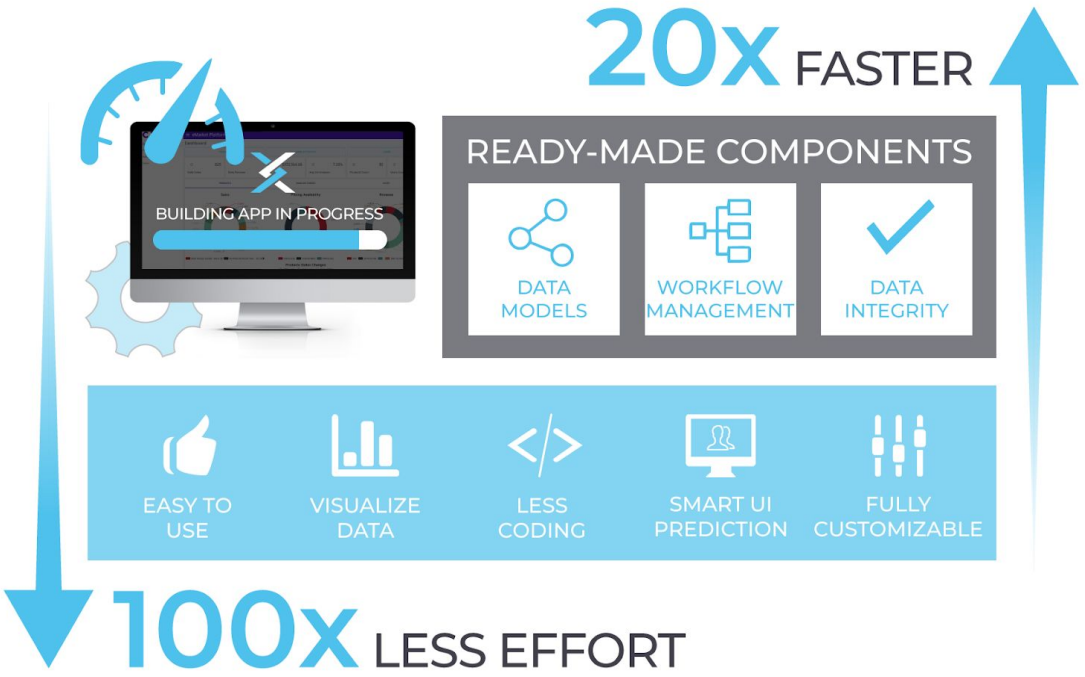
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1. WHAT IS CYPEX?

CYPEX is a user-friendly tool that allows to build PostgreSQL applications at an accelerated speed. Little coding is needed to achieve big results - which makes CYPEX one of the fastest development tools for PostgreSQL. Turning PostgreSQL tables into fully fledged applications has never been easier.

CYPEX enables internal applications development in no time. And the best part: Almost everyone with at least basic coding knowledge, will be able to develop these applications.



1.1 BUILD PROTOTYPES AND REAL APPLICATIONS FASTER

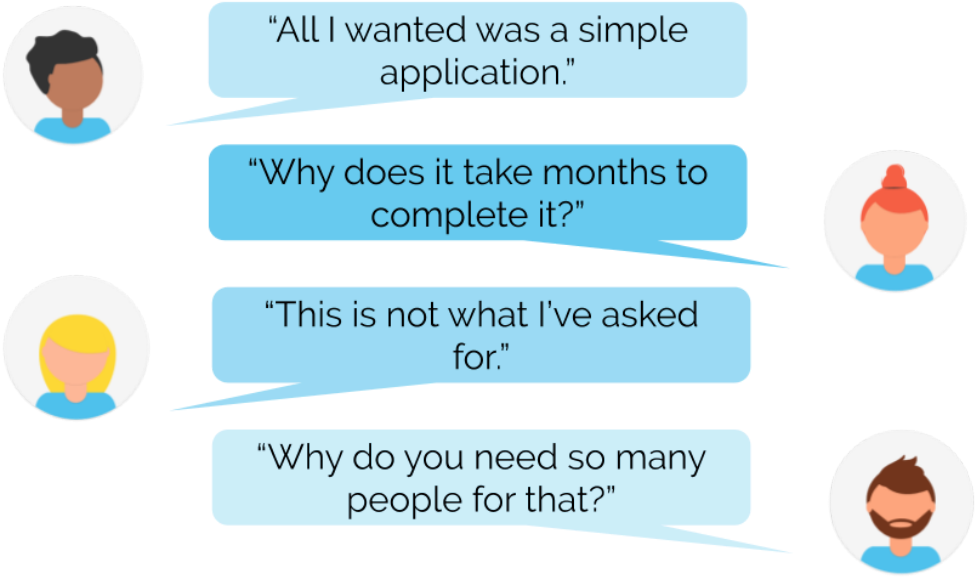
Spending months on application development does not match the requirements of a modern business. Solutions need to be created fast and the goal should be to move on to production within days.

CYPEX is a product developed by CYBERTEC, designed to simplify the creation and implementation of database applications. We are continuously looking for better solutions for businesses, developers, and consultants alike. We help businesses grow by enabling them to develop applications faster.

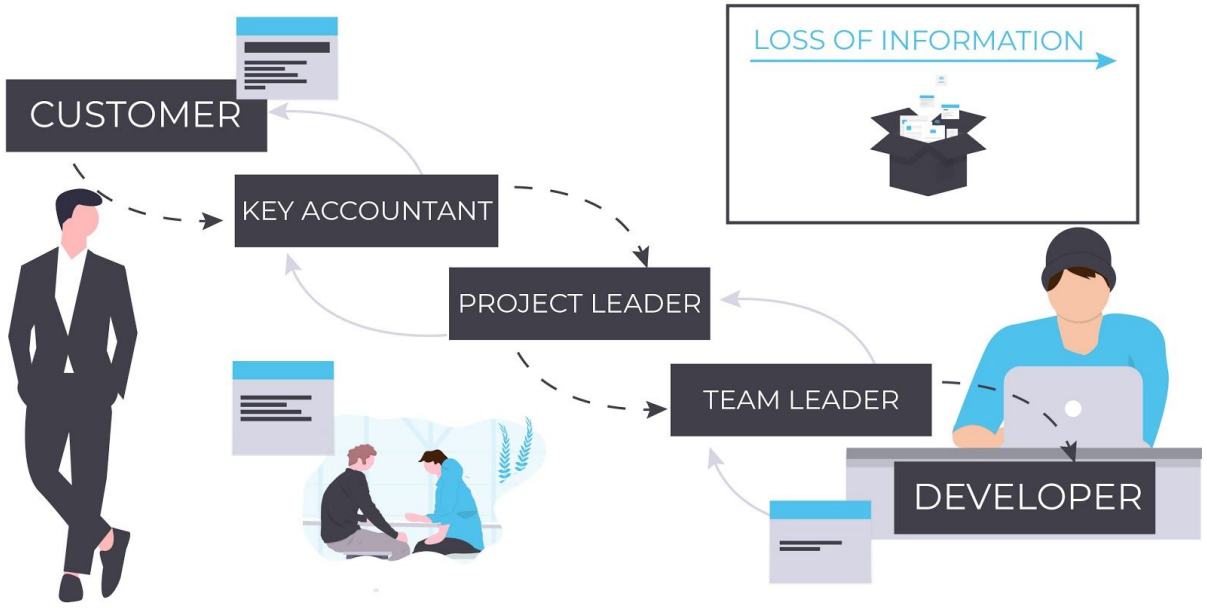
> "Reduce the time it takes to develop applications with CYPEX"

"OLD SCHOOL" DEVELOPMENT IS TOO SLOW

We have all seen this happen in real life:

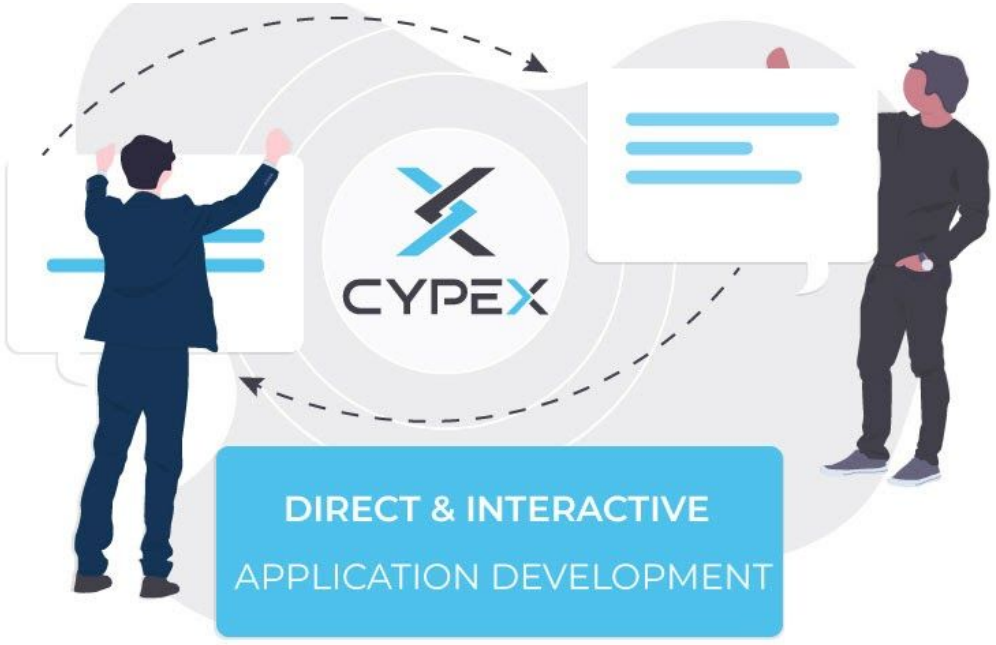


Traditional software development is not efficient because detailed information is not available where it is really needed.



FOCUSING ENTIRELY ON THE CUSTOMER

CYPEX offers a more interactive approach to application development:



Our approach ensures that information is directly fed into the development process. No men in the middle, no unnecessary paperwork, no loss of information!

"We focus on solutions - not on bureaucracy"

By instantly providing a basic and simple prototype of an application (ideally during the analysis phase) we are able to receive immediate feedback and thus avoid expensive delays, failure, and wrong approaches.

AGILE APPLICATION DEVELOPMENT

With CYPEX you can transform visions into applications in the most interactive way possible. We turn a human conversation into instant prototypes that can then be turned into real applications with truly little effort.

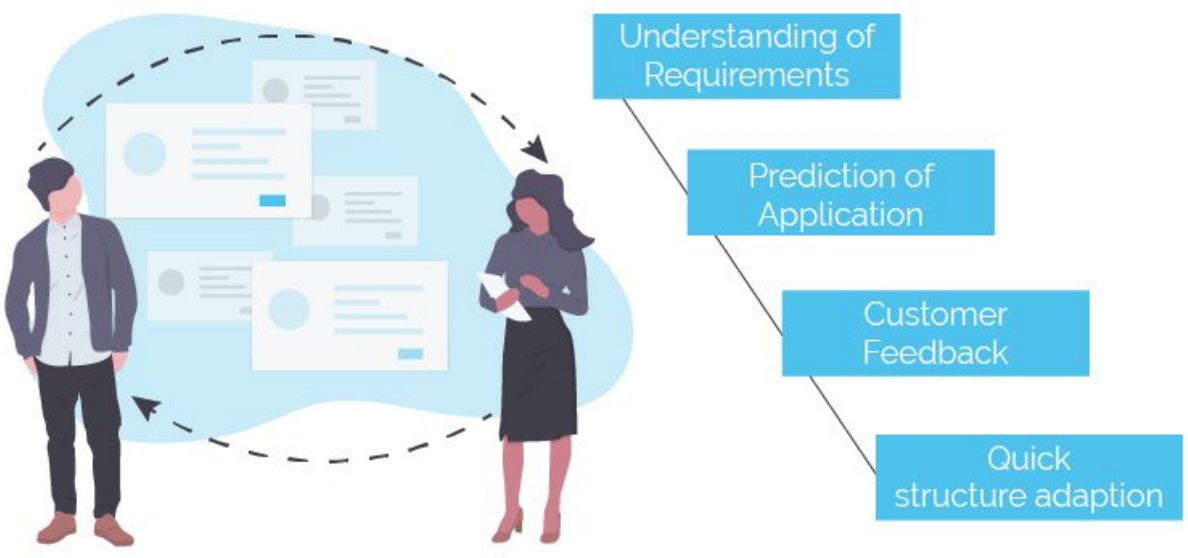


Instant feedback that comes directly from customers is the key to success.

EFFICIENT AND INTERACTIVE

Human interaction and cooperation usually start with a simple conversation. So why not use the same technique for software development? Why not specify the concept of an application as close to the client as possible?

Our approach to software development is revolutionary:



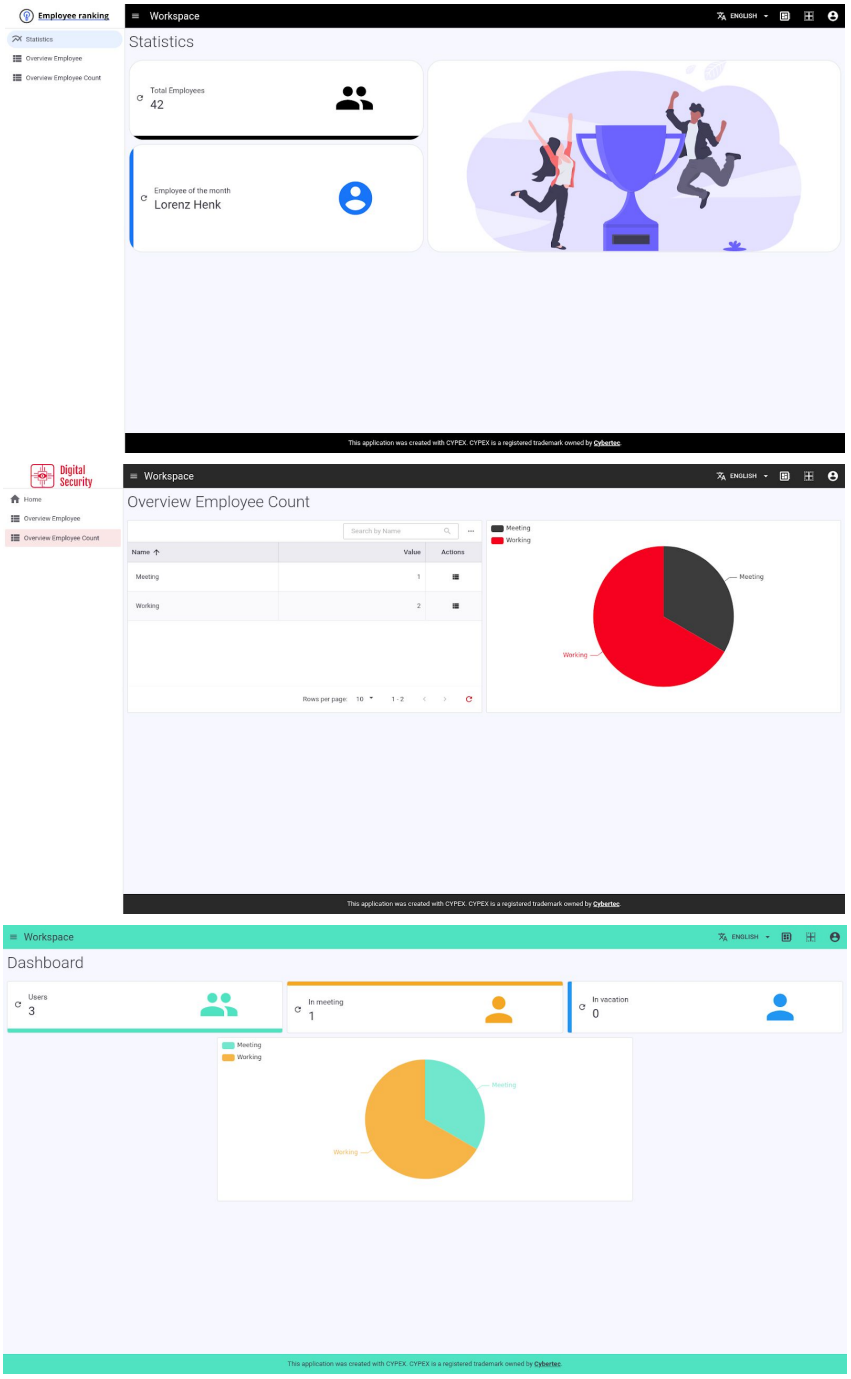
Avoiding the needs to write hundreds of pages of specifications not only saves time and money, it also eliminates misunderstandings from the very beginning.

Our innovative approach is simple and offers many benefits:

- Understand requirements in detail
- Gather feedback instantly
- Eliminate failing projects
- Move to production faster
- Guarantee 100% customer satisfaction

HANDLING LAYOUT REQUIREMENTS LIKE CORPORATE DESIGN

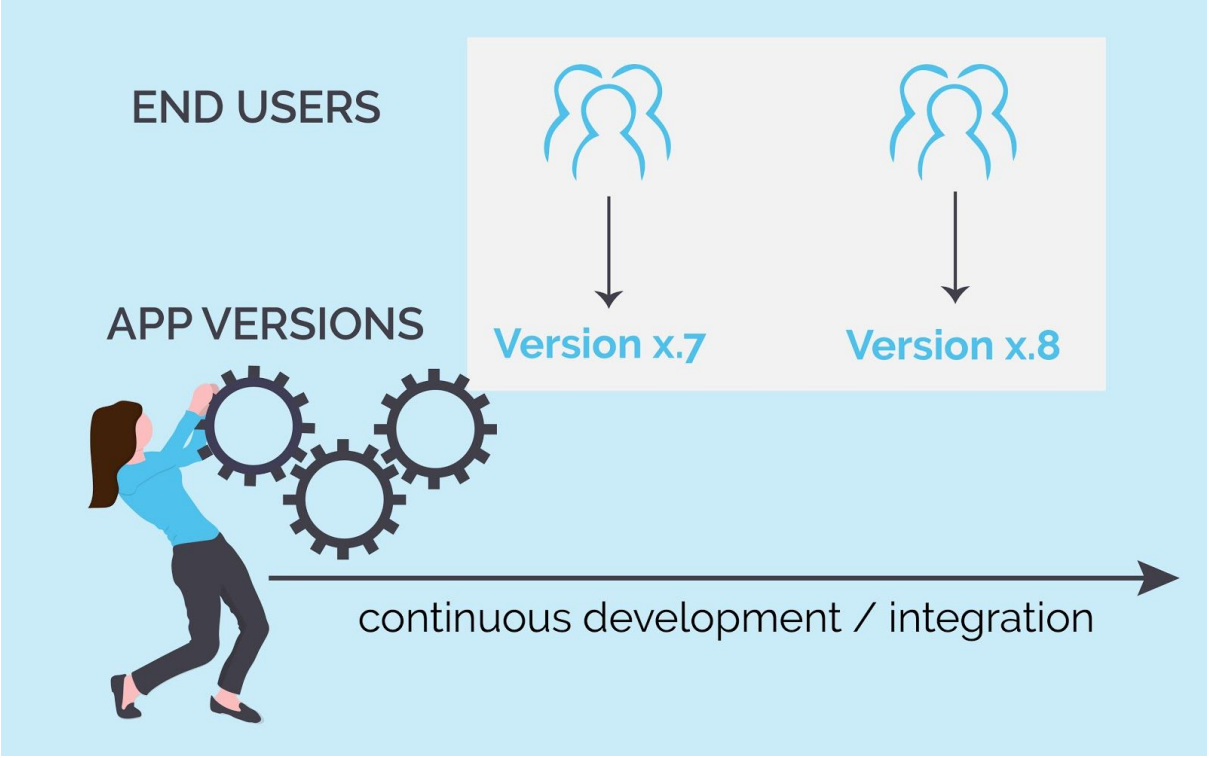
A modern business demands proper branding and strict compliance with corporate design guidelines. CYPEX allows you to easily adjust colors and styles to your needs.



MANAGING EXISTING APPLICATIONS

Changing requirements during the development process are not the exception - they are the rule. It can be said that change is the only constant in software development. Hence, we foster agility.

CYPEX allows you to adjust software easily. Versioning user interfaces (GUIs) are an integral part of CYPEX. You can even make changes in the user interface while an application is already in production.



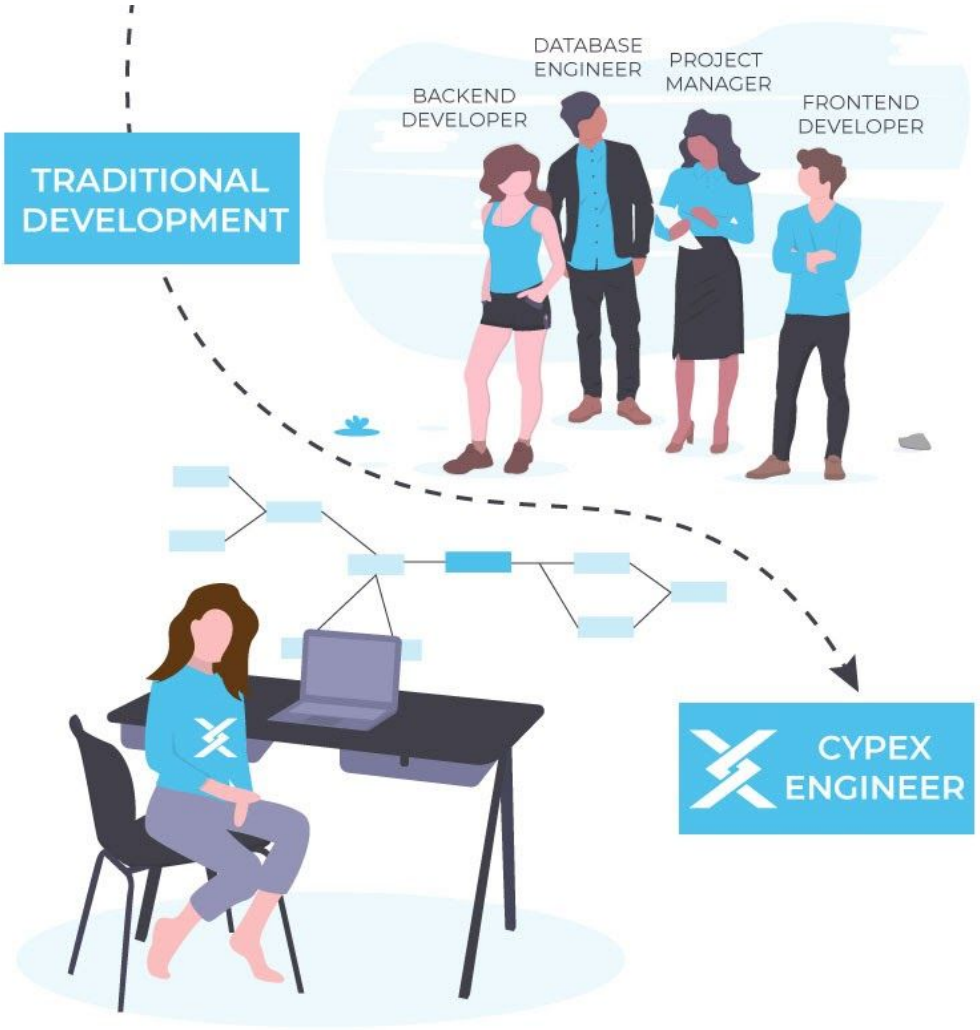
Even in case of failure you can easily revert changes. You can also experiment with different layouts and designs to establish which kind of application is the most efficient and most suitable for different types of users.
CYPEX gives you all the flexibility and safety modern software development needs.

1.2 WORKING WITH SMALLER TEAMS

A perfect development team does not have to be a large one. Sometimes big teams can lead to big problems:

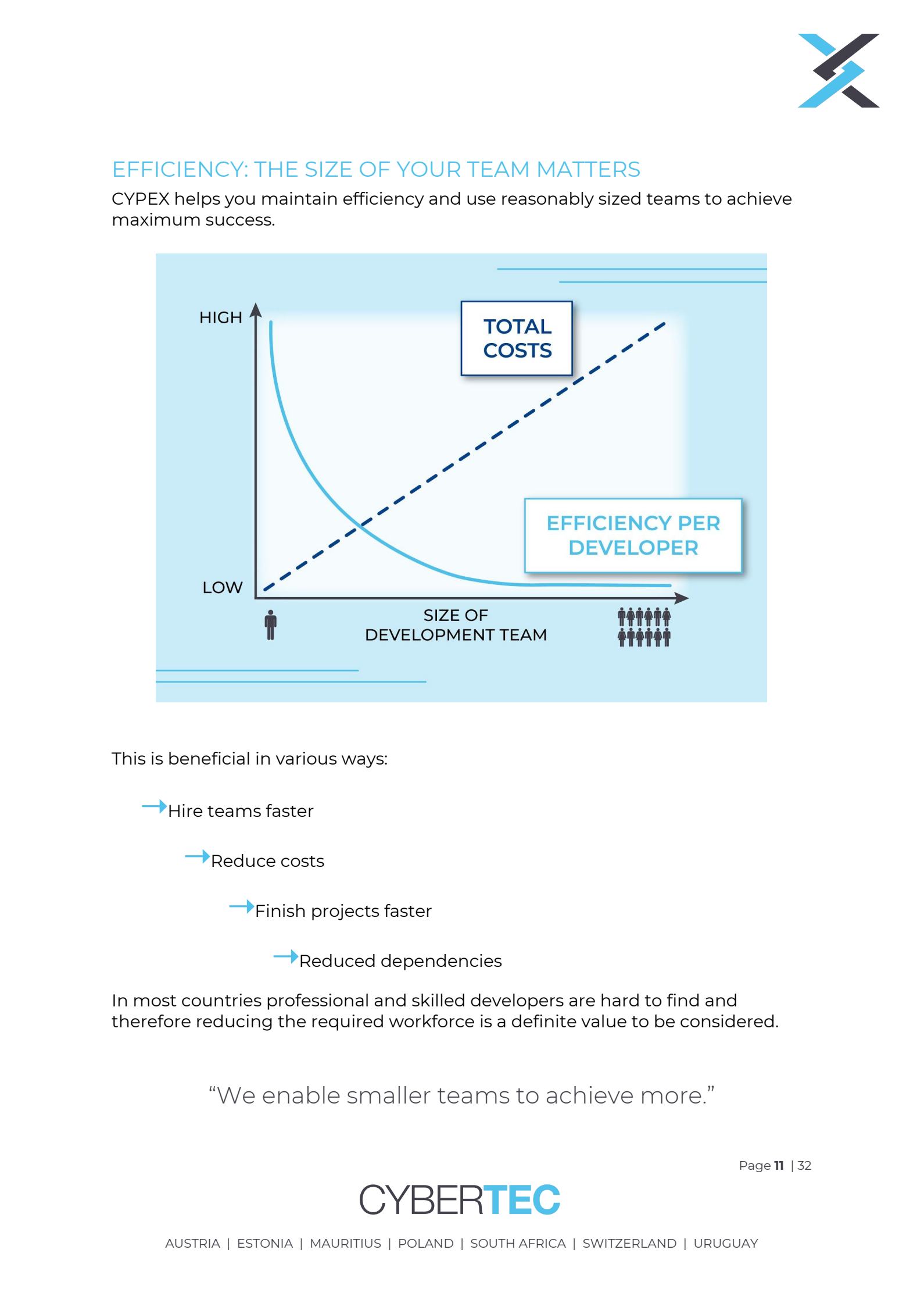
- Professional developers are hard to find on the market and recruitment for your company requires time and effort.
- Large teams are sometimes less efficient than small teams as more management and communication overhead is needed.
- Overall costs go up as teams grow.

So why not operate with CYPEX and with smaller teams, and achieve more in less time? CYPEX will help you be more productive while operating in smaller teams. Traditionally, the number of different skills required to form a team is a problem in itself. With CYPEX you need fewer skills within your team, which greatly reduces the number of developers needed to get a job done. CYPEX makes human resources management significantly easier.



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EFFICIENCY: THE SIZE OF YOUR TEAM MATTERS

CYPEX helps you maintain efficiency and use reasonably sized teams to achieve maximum success.

This is beneficial in various ways:

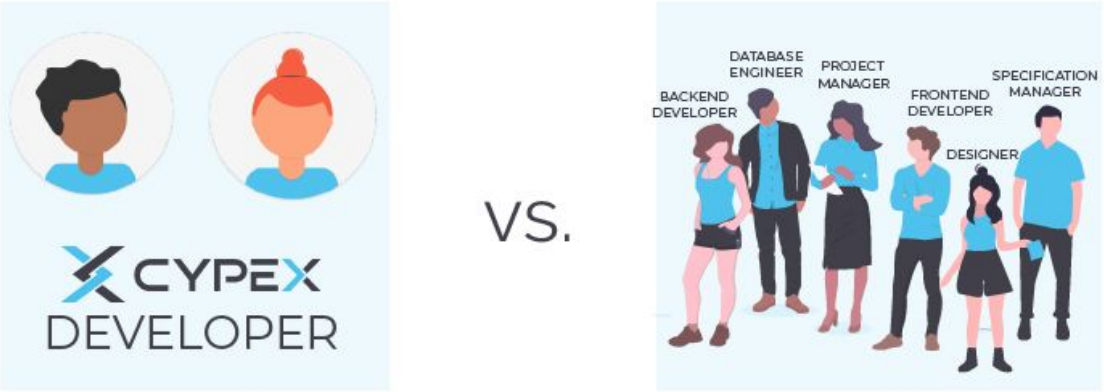
- Hire teams faster
- Reduce costs
- Finish projects faster
- Reduced dependencies

In most countries professional and skilled developers are hard to find and therefore reducing the required workforce is a definite value to be considered.

"We enable smaller teams to achieve more."

AVOIDING OLD MISTAKES - FINDING NEW WAYS

CYPEX offers new ways to avoid old, cost-intensive mistakes causing nothing but delay and trouble.



By reducing the number of people there is more time to focus on the real task at hand.



1.3 INSTANT CUSTOMER FEEDBACK

How much real and valuable feedback can a user give you on a slide deck of mockups that aren't even fully functional? CYPEX goes even beyond that. You will be amazed how much feedback you will receive once a user can see a fully functional prototype. CYPEX encourages feedback while constantly fighting information loss during the critical design phase.

FIGHTING INFORMATION LOSS

All you wanted was a simple application including some nice charts and LDAP authentication but you had to talk to five different people beforehand, form a project team, handle procurement or simply wait for half a year just to end up with something that does not fulfill your requirements because what you really needed was lost in translation?

CYPEX offers you a real alternative to this scenario. We focus on what you really need and we find the fastest possible way to reach your goal.

Clients know all about their own business. However, it can be difficult to extract this kind of information and business logic in a way that suits software developers. As a general rule, the larger the gaps in information and expectations between clients and developers, the more likely a project will fail.

CYPEX brings customers and solution creators together to reach development goals fast and reliably. Receiving feedback from clients faster than ever aids in avoiding expensive failures.

> "Additional layers of communication spark information loss."

Fighting loss of information is the key to success. Often clients have all the information that is needed but it does not trickle down to software developers fast enough or not at all.

INSTANT FEEDBACK - INSTANT SOLUTIONS

By cutting out “the man in the middle” we ensure efficient communication. Our consultants can build rough prototypes at the same time as customers are explaining their business.
This enables:

- a clear vision for customers
- early previews
- no need for expensive mockups
- closer interaction

“Creating prototypes while clients explain - not afterwards”

USABLE SPECIFICATIONS

Specifications are used to guide developers but after the project is finished their value is usually gone. We at CYBERTEC hate to throw things away or produce items that only serve a single purpose once.

“Creating useful specifications”

If you are using CYPEX, specifications can be reduced to a minimum amount and you receive a prototype ready to use. It already has value. No resources are wasted on things that are guaranteed to be worthless after the project ends.

“Using resources efficiently”



1.4 BUILT-IN SECURITY AND DATA PROTECTION

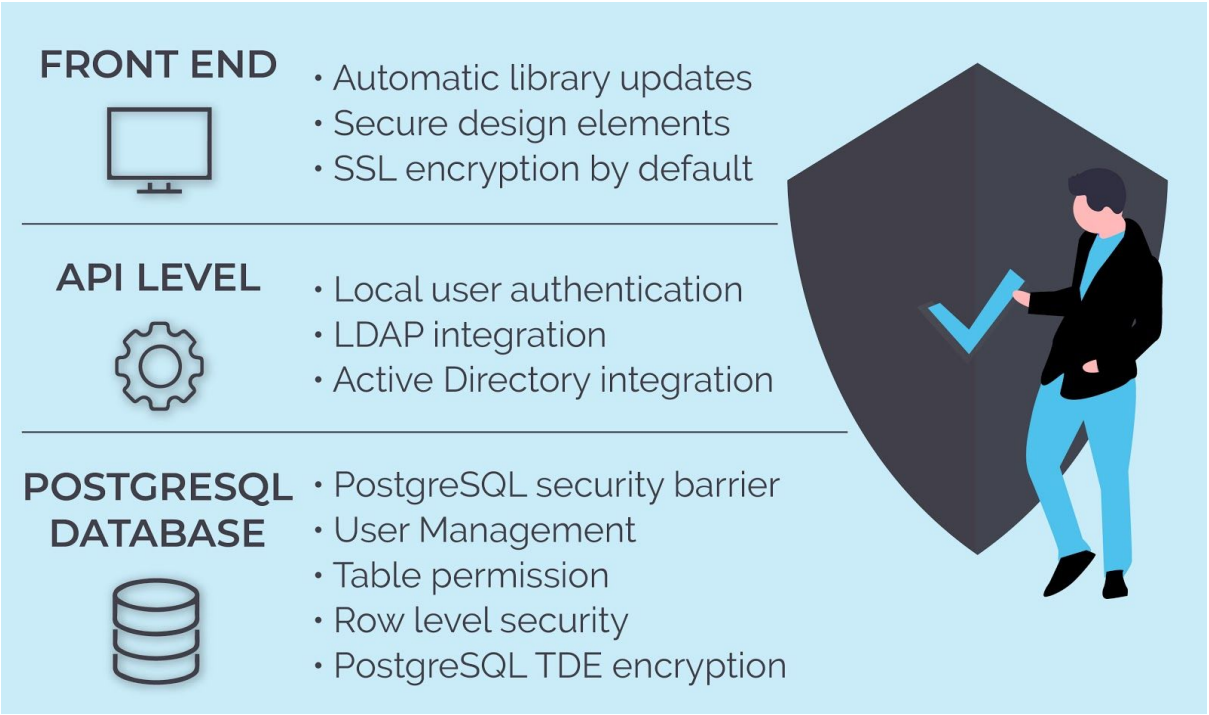
CYPEX protects data at all levels and offers powerful ways to configure security to your needs. Our “security by default” strategy means taking a holistic approach to solving security problems at the root cause rather than treating the symptoms of bad design. To us “security by default” defines the long-term technical approach to ensure that the right security policies are available.

Protecting data is important for any database driven development. The CYPEX development takes data seriously and therefore, CYPEX protects information at all levels. This includes the database layer itself, the middleware as well as the front end.

SECURING DATA & FULL ENCRYPTION - AT ALL LEVELS

Nowadays security is priority number one. Hence, we offer more than just protecting data at the application level. Whenever a CYPEX data model is implemented, security is already implemented on the database side by default. This approach ensures that all APIs automatically share the same set of rules.

Furthermore, CYPEX emphasizes encryption at all levels, meaning that everything is encrypted by default. To us, security is not an option - it is mandatory. Therefore, security is activated by default - there is no need to enable it.

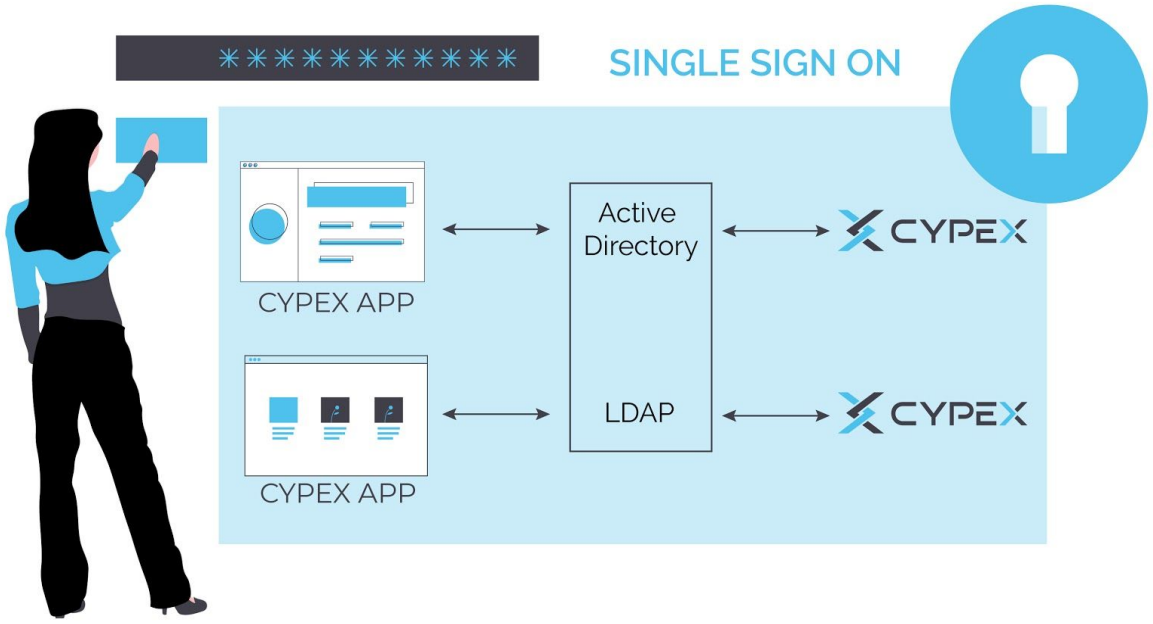


** PostgreSQL TDE is a security enhanced version of PostgreSQL developed by CYBERTEC.*

Permissions are all defined in a single point, which allows for easy administration and greater reliability. Security does not tolerate compromises. We have fully understood that and designed CYPEX to reflect this belief.

SINGLE SIGN-ON: MANAGE USERS CENTRALLY

Single sign-on is a way to centralize user information in a single place. CYPEX fully supports this approach and offers efficient integration.



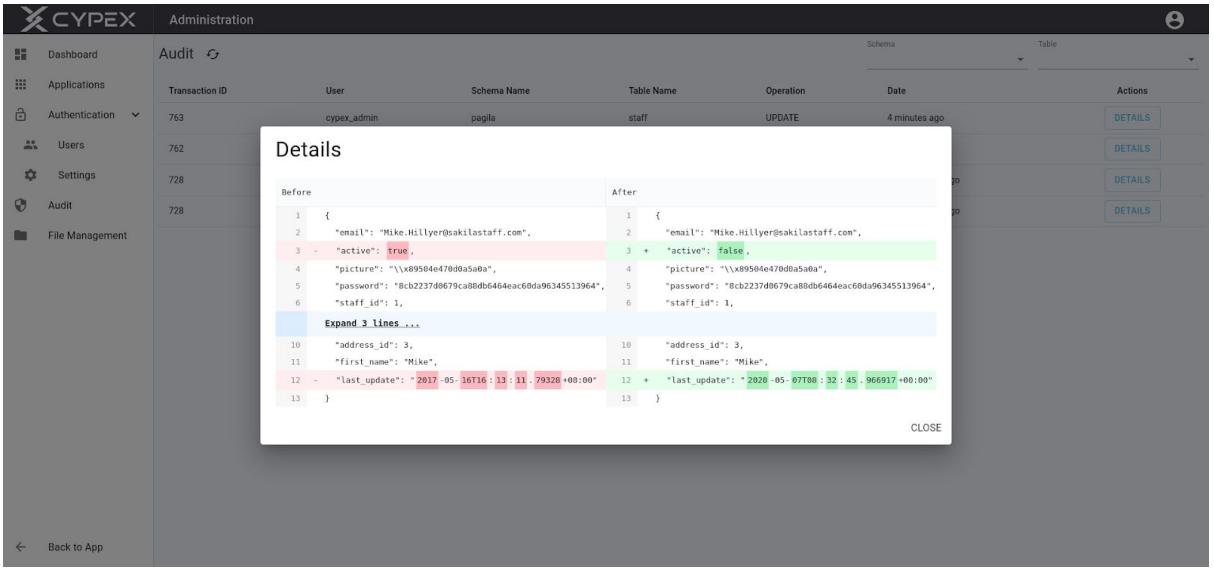
Multiple applications can share the same user pools. CYPEX is therefore able to integrate with infrastructure that is usually already available in a large corporation.

Key advantages:

- direct integration into existing infrastructure
- centralized user management
- standard software can be used
- no need for additional software

BUILT-IN SECURITY AUDITING

You want to know who has changed what? What kind of data has been adjusted and when? CYPEX comes complete with out-of-the-box auditing. Simply tell CYPEX to track objects in the database and it will automatically write an audit trail for you. Auditing has never been easier!



Auditing can be enabled and disabled by the administrator only.

Changes are tracked - regardless how they were triggered:

- changes made by the web application
- changes triggered via API
- changes made on the database level

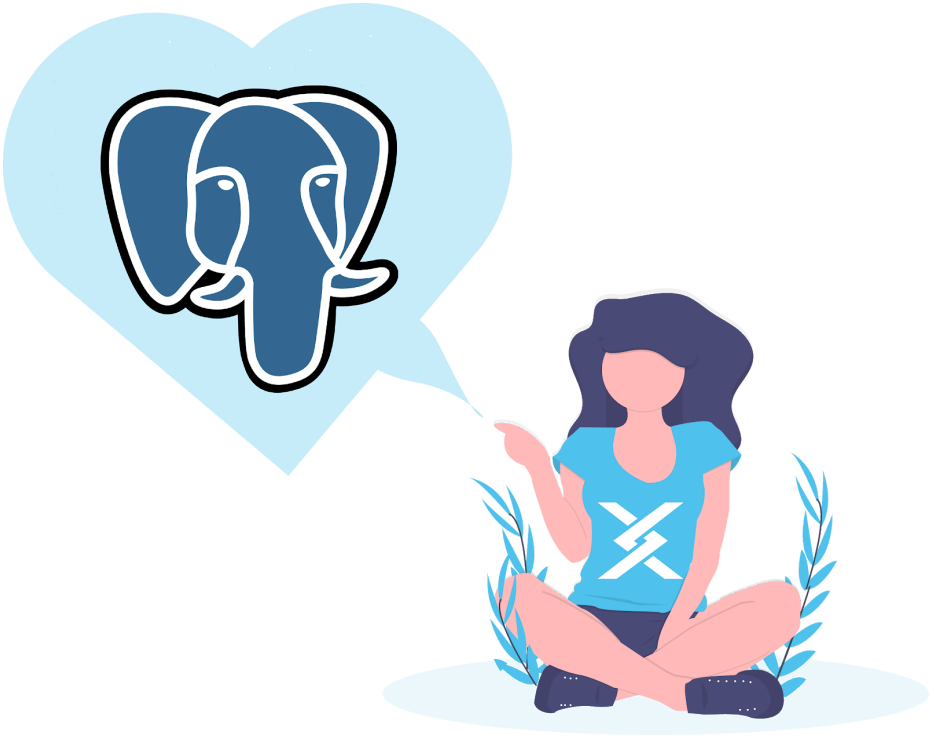
No changes can ever escape our audit mechanism, which ensures maximum protection at all levels.

2. HOW CYPEX WORKS

CYPEX is a web-based tool built on well-known and well-tested software components.

"CYPEX - PostgreSQL at its core"

We use one of the world's most popular databases, PostgreSQL, to protect data at all costs. PostgreSQL is the most advanced open source database management system and has been named database of the year several times already.



CYPEX, with PostgreSQL at its core, is cloud-ready and can therefore easily be used in combination with Kubernetes (k8s) or OpenShift.

End users can conveniently use a standard web browser[1] to access applications.

[1] e.g. Google Chrome, Mozilla Firefox, Safari, Opera, Microsoft Edge Version 82+. Internet Explorer is deprecated and not supported.

2.1 SOFTWARE ARCHITECTURE

CYPEX is built on top of PostgreSQL and uses many features of this powerful open source database solution. On this page you will learn about the underlying software architecture in use.

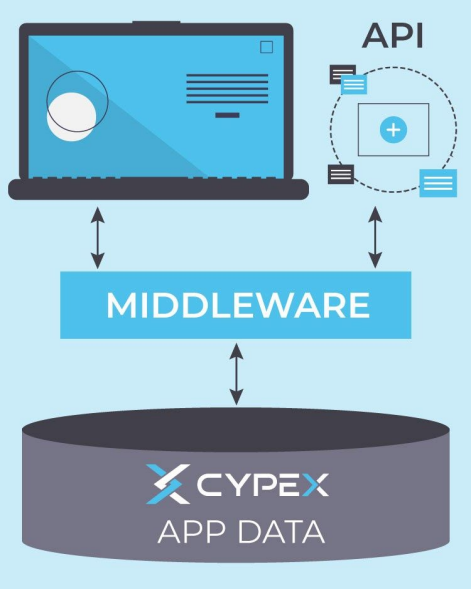
CYPEX APPLICATION RENDERING

We use a classical three-layer architecture.

1. Database layer:
   - data model
   - meta data
   - GUI versioning
   - security and permissions

2. Middleware:
   - central authentication
   - API interfaces
   - GUI prediction

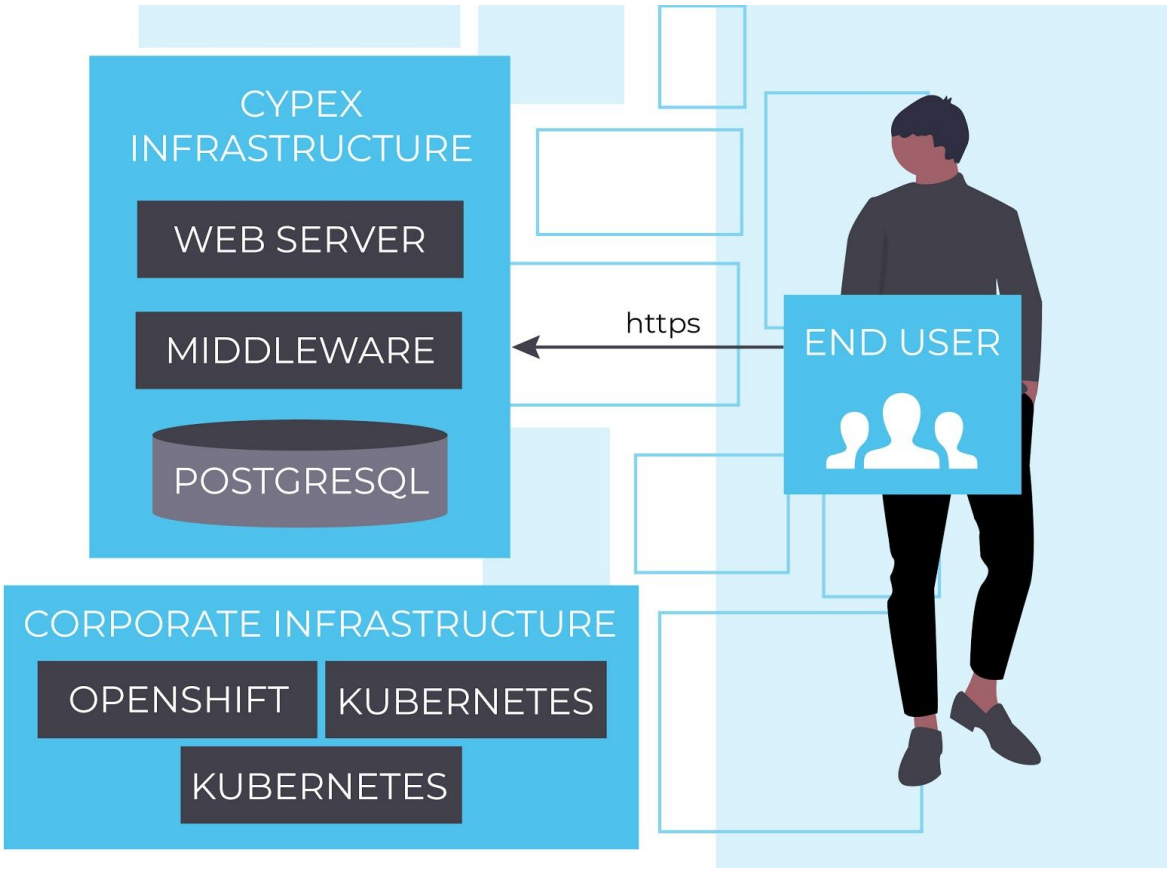
3. Client interface:
   - browser-side app rendering
   - human-computer-interface



CYPEX integrates perfectly with existing corporate infrastructure components including but not limited to:

→ Single sign-on
   - LDAP

→ Container orchestration
   - Kubernetes
   - OpenShift
   - VMWare solutions
   - etc.


CYPEX
INFRASTRUCTURE
WEB SERVER
MIDDLEWARE
POSTGRESQL
https
END USER
CORPORATE INFRASTRUCTURE
OPENSHIFT
KUBERNETES
KUBERNETES

2.2 ADVANCED WORKFLOW MANAGEMENT

CYPEX is more than just a tool to create trivial forms. You can model workflows quickly and turn them into easy-to-use applications - without sacrificing the ability to back up entire applications as part of the regular database backup. CYPEX workflows are intuitive and integrate nicely with your existing database models.

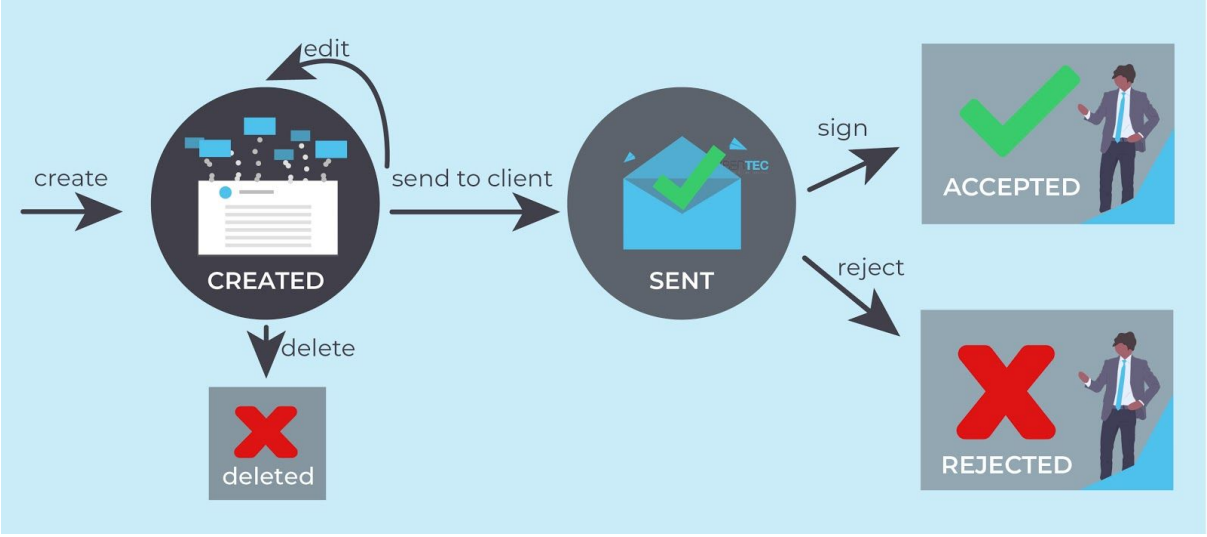
CYPEX combines rapid prototyping, professional application development as well as workflow management in one powerful product.

"Work smarter and faster"

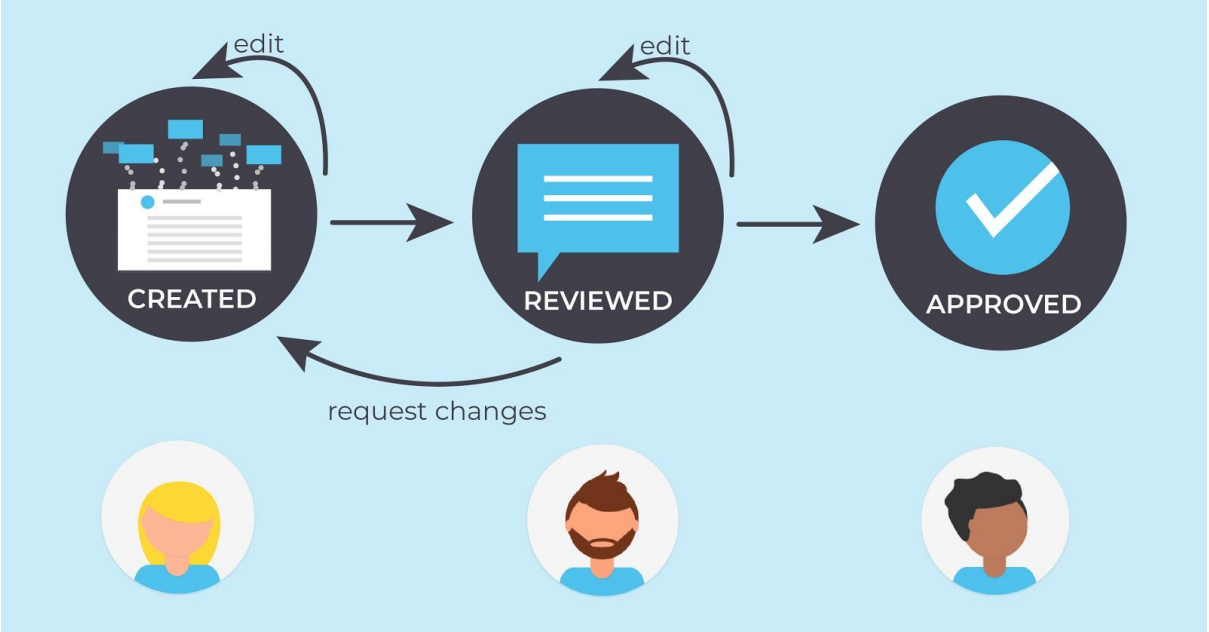
Model processes, automate tasks, work together in teams and monitor it all in real time. Workflow management with CYPEX is reliable and simple. Automate your business with little effort and deploy new applications fast.

WORKFLOWS MADE EASY

CYPEX allows you to model workflows using simple flow diagrams. Use our interactive editor to design processes and quickly visualize them.

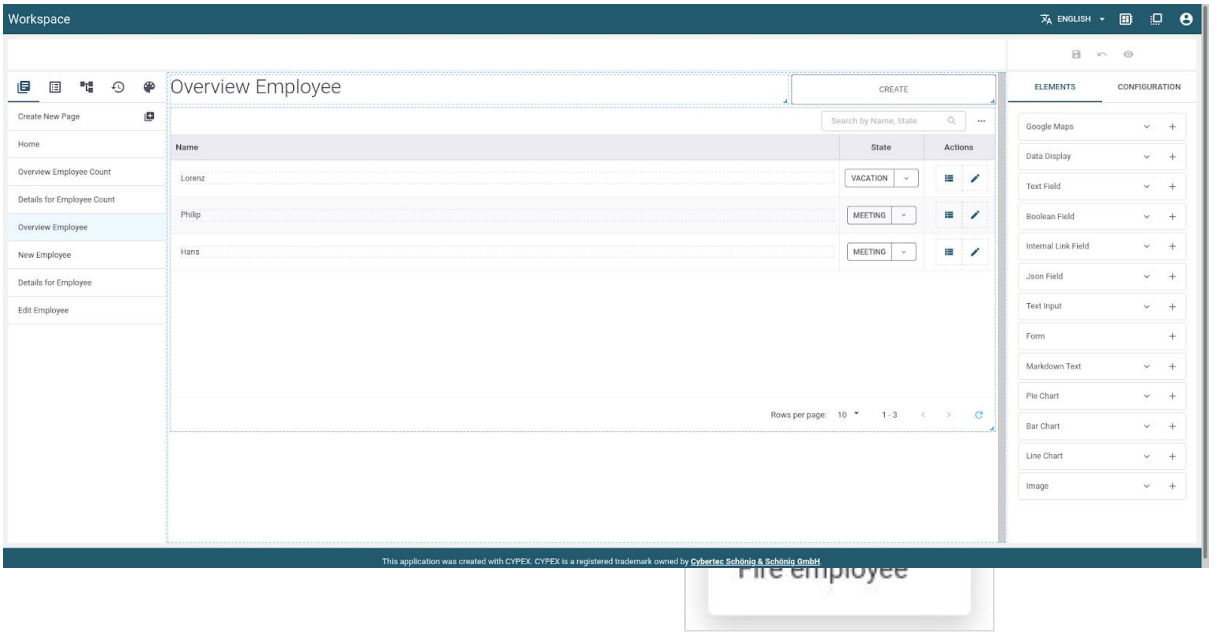


You can integrate your workflows with a state-of-the-art permission and security system. CYPEX offers easy administration and a secure way to handle process data. You can assign permissions to individual users or to entire project teams.



Alerts are part of the CYPEX core infrastructure. You will never miss important events again. CYPEX features automated traceability and reuse of components.

Built-in work items and change-set traceability reduce the risk of security leaks. Simply use our drag & drop editor to build workflows according to your needs.

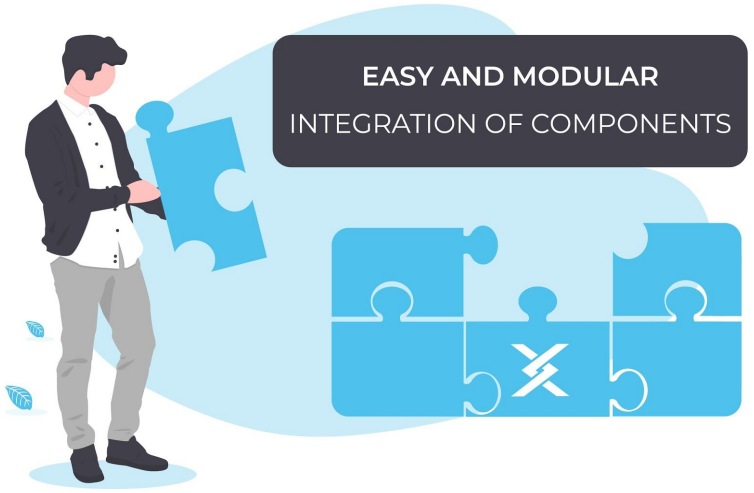


It is easy to assemble tasks and configure your process exactly the way you need it. Understand how your company works and adjust processes on the fly!

2.3 READY-MADE SOFTWARE COMPONENTS

CYPEX comes with ready-to-use models as well as ready-to-use components that greatly improve development speed. Modeling the same processes all over again is inefficient; why dream up the fields on an “address list” or reimplement unit conversion over and over again?

Address lists, currency conversion, timeseries, etc. - all those standard components and models are implemented in CYPEX by default and can be integrated into your application fast and easily. There is no need to reinvent the wheel. Simply use our constantly expanding component library to get application building done faster and more reliable.



ELEMENTS AND COMPONENTS

CYPEX components offer ready-made data structures including sample data, which can be directly added to your application. All components are well tested and production-ready.

To visualize your data CYPEX offers a set of graphical design elements including but not limited to:

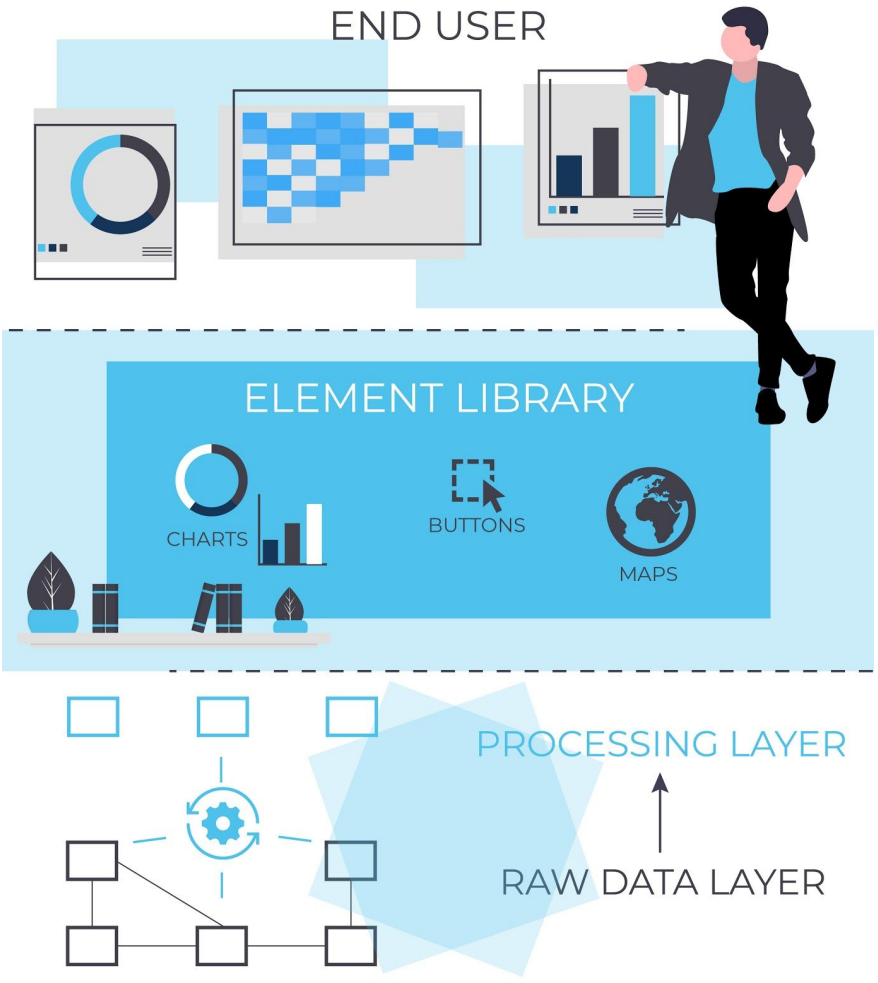
- display elements: tables and lists
- controls: buttons, sliders, checkboxes, etc.
- charts: pie charts, line charts, etc.
- GIS elements: Google maps, etc.
- editors: text, code, markdown, etc.

Our solution is tightly integrated and comprehensive.

FEATURES COMPONENTS

The following listing contains a handful of components widely used in CYPEX applications:

COMPONENT	DESCRIPTION
markdown text	render markdown including syntax highlighting for code blocks
table	render raw data as a table including several different column components
pie chart	render raw data as a pie chart to visualize percentages and ratios
line chart	render raw data as a line chart, e.g. to show value changes over time
bar chart	render raw data as a bar chart, e.g. to compare different amounts
link button	link to another CYPEX page, allows passing arguments



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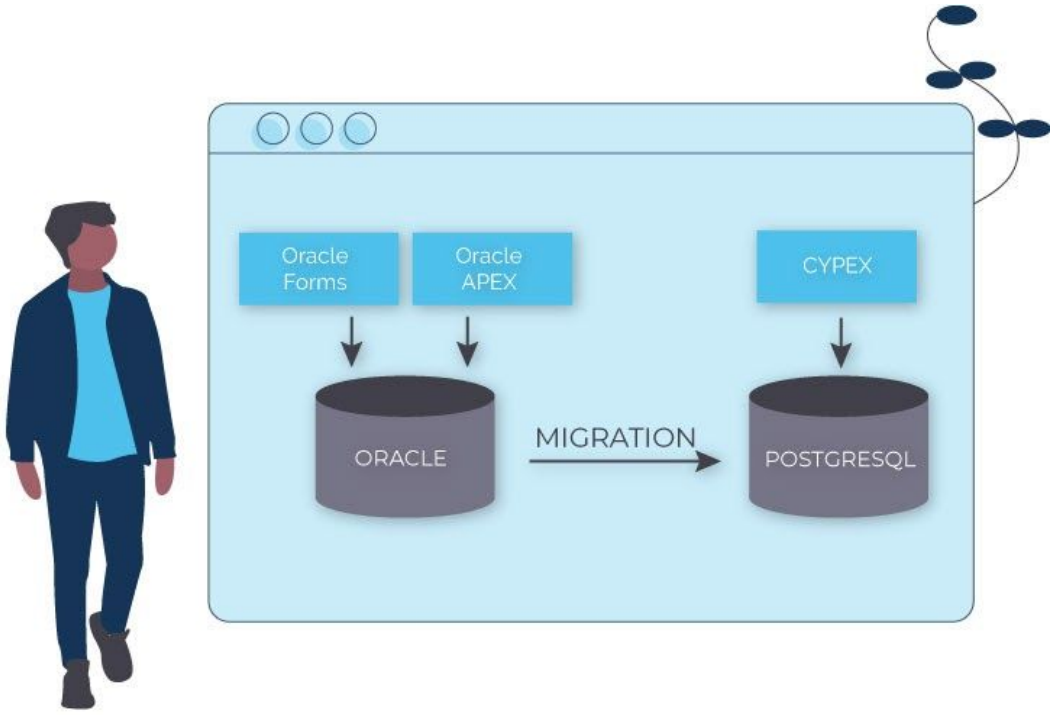
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3. MOVING APEX & ORACLE FORMS TO CYPEX

Oracle Forms and APEX are two software components that are responsible for many companies' hesitation to move to PostgreSQL. AT the same time, many businesses want to move away from Oracle and introduce PostgreSQL as an open source alternative to commercial software.

However, while moving from Oracle databases to PostgreSQL is easy, we have seen that Oracle Forms and APEX are trickier. In many cases Oracle Forms and APEX are the main reason why migrations cannot be done easily.

CYPEX has been specifically designed to help clients who want to get rid of Oracle in all forms. CYPEX is the perfect alternative to APEX to build even more powerful applications.





HELPING CUSTOMERS TO MIGRATE FROM ORACLE TO POSTGRESQL

CYBERTEC offers a comprehensive strategy to move from Oracle to PostgreSQL. Please check out our website[2] or contact our sales team to learn more about our migration services and our extensive migration tool chain including the CYBERTEC Migrator.

Especially for APEX and Oracle Forms, CYPEX is a perfect alternative that offers a way out of exorbitantly high license costs.

CYBERTEC offers comprehensive services to companies moving to PostgreSQL:

- Migration:
  - full migration done by us
  - CYBERTEC Migrator: automated migration tool
  - migration assistance
- 24/7 support for:
  - PostgreSQL[3]
  - CYPEX and CYPEX Components
- Consulting
  - health check
  - performance tuning
  - high availability options
  - security audits
  - etc.
- Training
  - online training
  - courses at our offices
  - on-site courses at your company

We help our customers to introduce CYPEX in a professional way.

[2] www.cybertec-postgresql.com/en/services/migration-to-postgresql
[3] Check out our website (www.cybertec-postgresql.com/en/services/postgresql-support) or contact our sales team (sales@cybertec.at) for more information on our support offers.

4. APP GALLERY: CYPEX IN ACTION

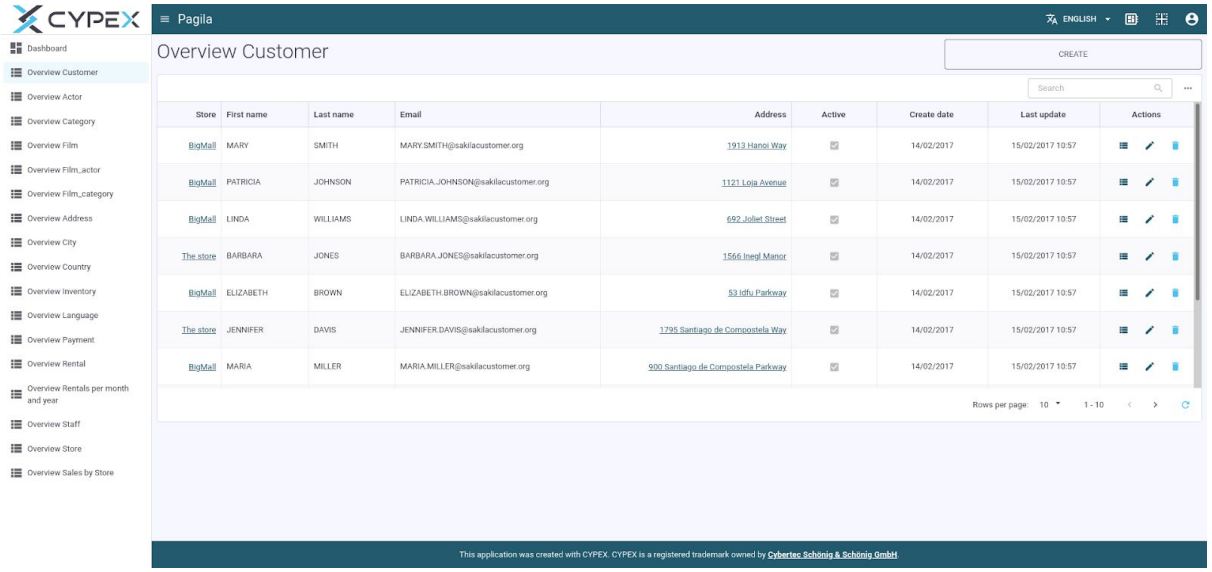
To figure out what you can do with CYPEX and how extensive this application building tool is, check out our app gallery for a variety of examples.

You will gain a first impression on what you can achieve with CYPEX. Check out our beautiful applications and find out what CYPEX can specifically do for you.

Our gallery contains a subset of applications implemented using our superior tool chain.

SAMPLE: CUSTOMER OVERVIEW TABLE

This screenshot shows a list of customers within a table. New customers can be created, existing customers can be updated or deleted. “Store” and “Address” are links to other entities.



SAMPLE: GUI EDITOR - CREATE A DASHBOARD PAGE

With the GUI editor, you can change the looks and structure of an application. In this screenshot, the GUI editor is used to create a dashboard with interesting sales data. The panel on the right allows you to modify the current selected element (in this case the *data_display1*). The panel on the left shows the menu of this application.

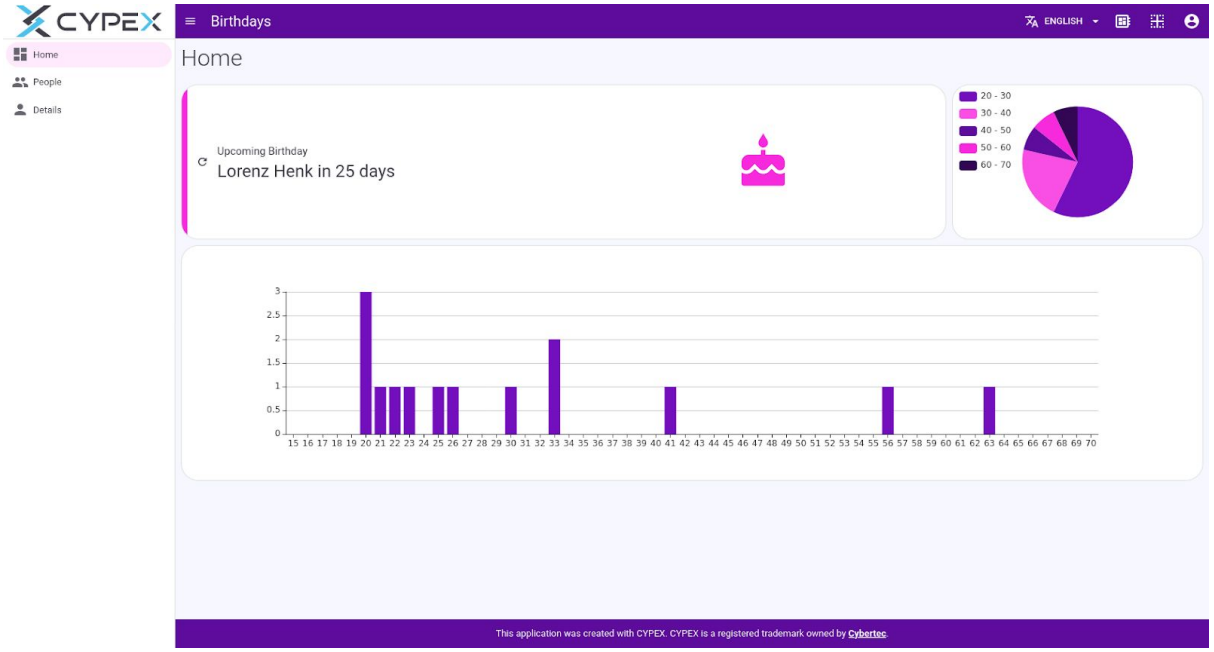
CYBERTEC

AUSTRIA | ESTONIA | MAURITIUS | POLAND | SOUTH AFRICA | SWITZERLAND | URUGUAY



SAMPLE: BIRTHDAY APPLICATION - CUSTOMIZED

The screenshot shows a simple application to track birthdays of a group of people and view statistics like age groups. It also shows the next upcoming birthday. Here you can also see, how adjustable the application is in terms of colours and corporate design.



5. CYPEX: CLOUD-READY BY DESIGN

To help you improve your cloud-readiness we have implemented CYPEX as completely “cloud-ready” software from the beginning.

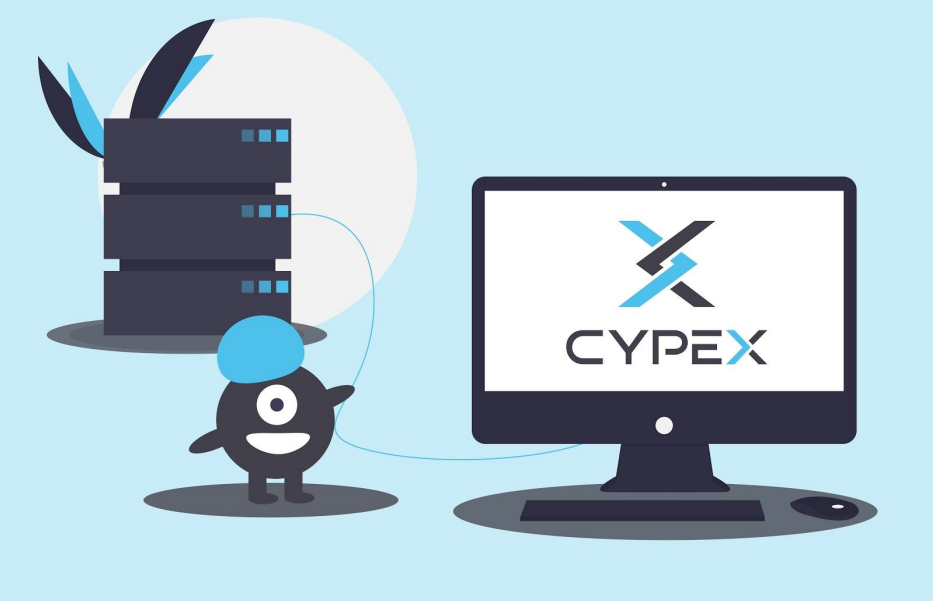
CYPEX has been developed as a “cloud-native” solution from scratch, which means that by default, CYPEX comes as a container that can be used with all commonly used solutions.

CYPEX can be used in:

- Public clouds
- Private clouds

RUNNING CYPEX ON-PREMISE

For clients who are not cloud-ready yet, we offer CYPEX as an on-premise solution. We also support “bare metal” as well as virtual machines (VMs). Simply get in touch with our sales team to learn more.



6. PRICING & DISTRIBUTION

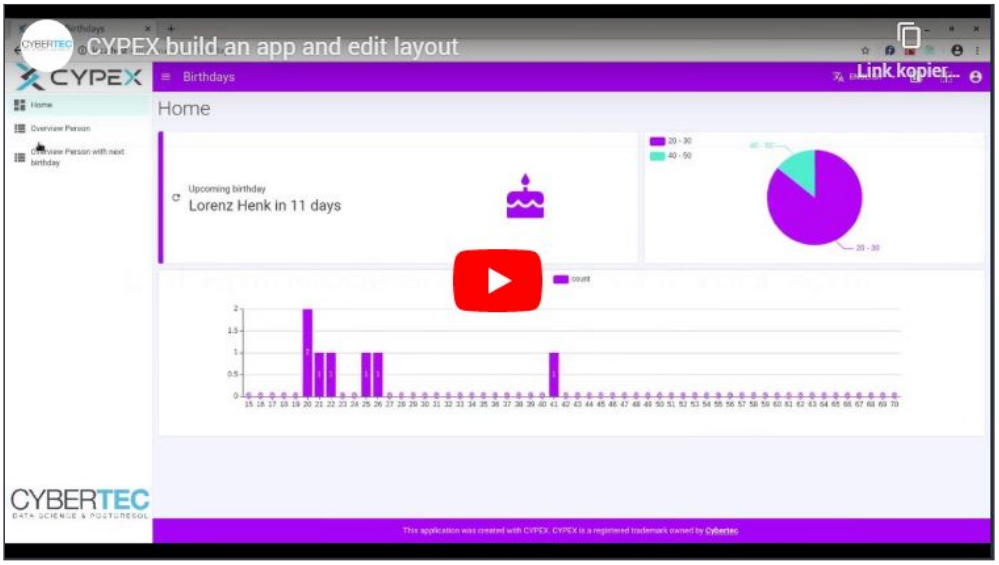
CYPEX is based on an annual license fee per core with a minimum amount of four cores. Product support for CYPEX is included in your subscription. If you need support for PostgreSQL itself, please check out our various support services[4].

DISTRIBUTION

CYPEX is a web-based service than can be easily accessed via common browsers[5]. It will be delivered as docker images with a docker-compose file. The basic requirement for the installation is that docker and docker-compose are installed on a Linux machine.

DEMO VIDEO

Check out the demo video on our website[6] to see for yourself how easy and quick application development with CYPEX is. The video gives a good overview and first impression on CYPEX, as well an introduction to the first steps and how to get started.



If you want a personal demo, please contact our sales team at sales@cybertec.at.

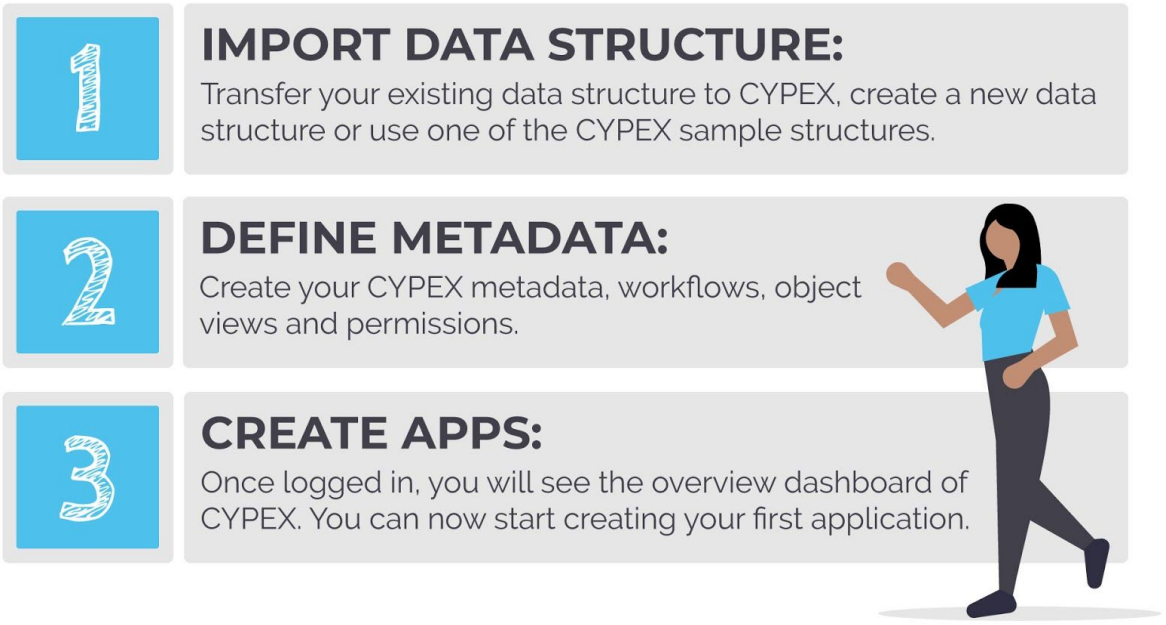
[4] https://www.cybertec-postgresql.com/en/services/postgresql-support/
[5] e.g. Google Chrome, Mozilla Firefox, Safari, Opera and Microsoft Edge Version 82+. Internet Explorer is deprecated and not supported.
[6] https://www.cybertec-postgresql.com/en/products/cypex

7. GETTING STARTED

With CYPEX, businesses will improve operational efficiency and boost productivity of operations within and beyond the enterprise. CYPEX offers a user-friendly interface to streamline processes, visualize workflows, and to provide easier access to your data.

SIMPLE STEPS & DOCUMENTATION

Getting started with CYPEX is very easy:



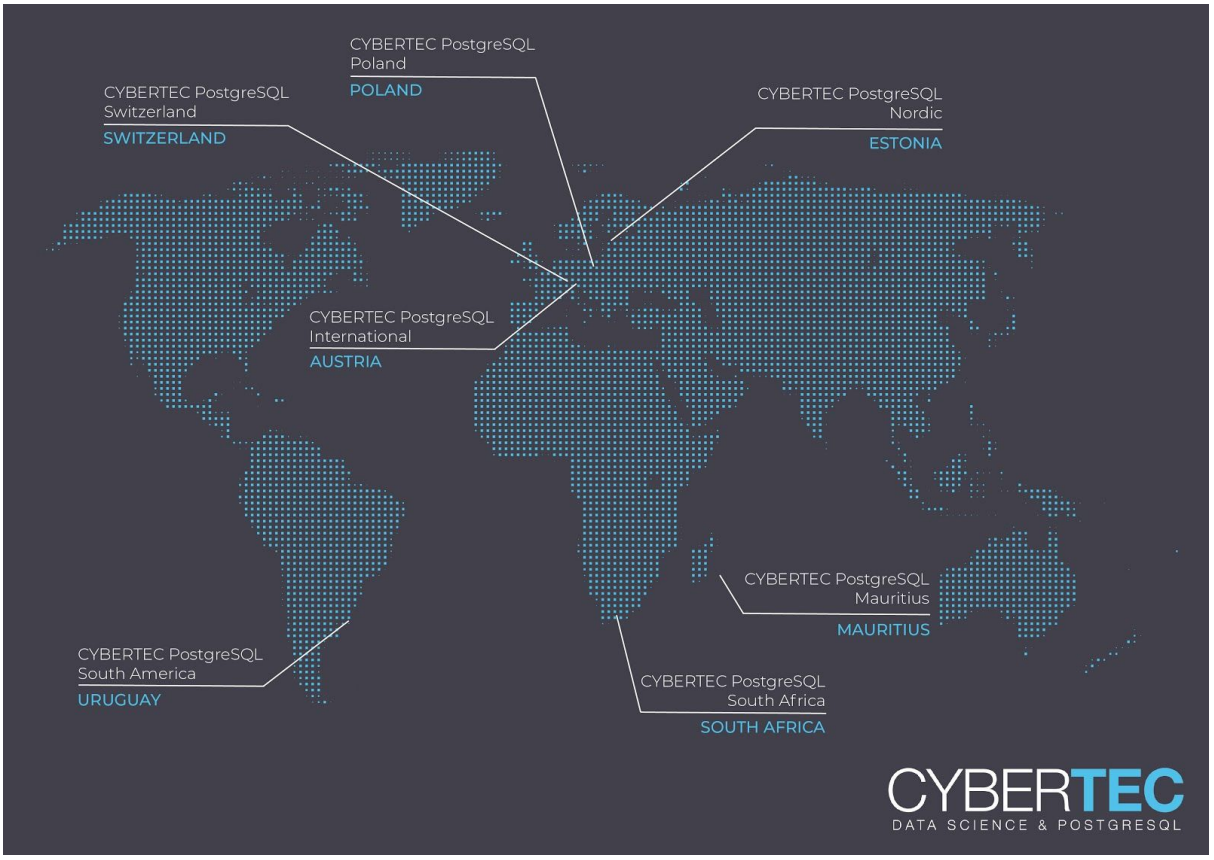
And that's it!

You will get a full documentation on how to get started and how to use CYPEX in all its details. Just contact us!

Get started today and learn

how CYPEX can boost your business!

Contact our sales team at sales@cybertec.at



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