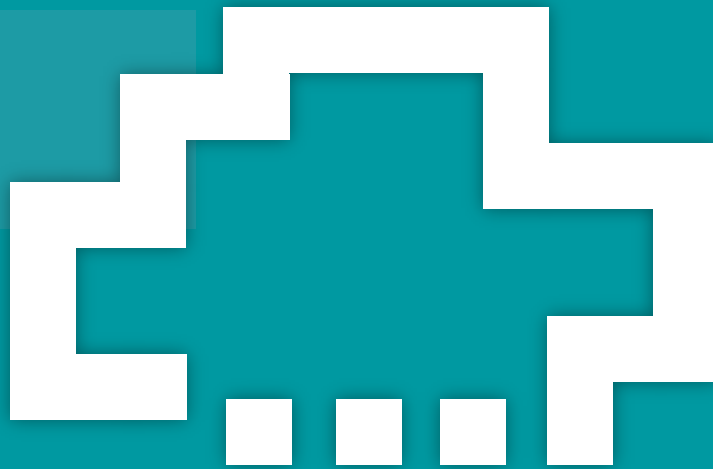# FAQs Proficloud

Frequently Asked Questions

PROFESSIONAL CLOUD SOLUTIONS

PHŒNIX CONTACT
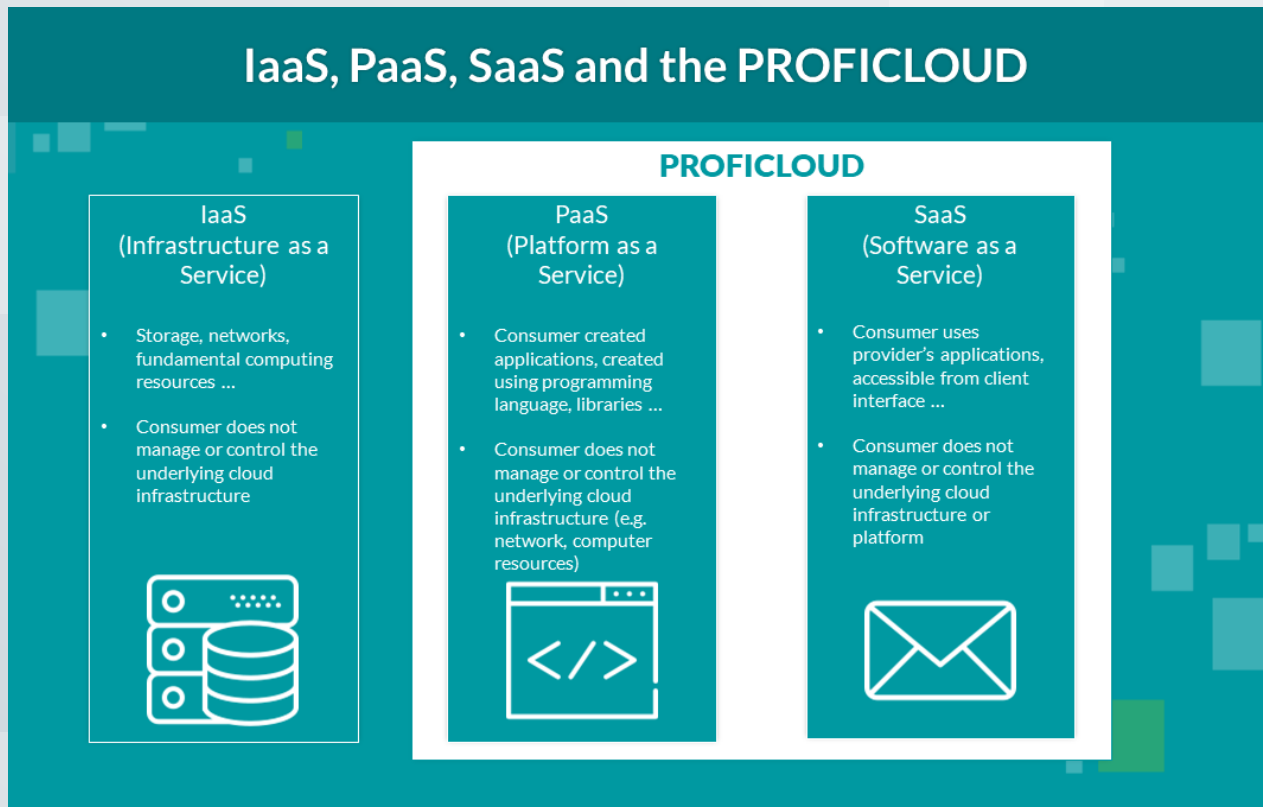
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1. What is the Cloud? What does Cloud mean?

Cloud computing is the concept of offering services over the internet. When it comes to these services, there are three general levels:

IaaS (Infrastructure as a service)

The capability provided to the consumer is to provision processing, storage, networks, and other fundamental computing resources where the consumer is able to deploy and run arbitrary software, which can include operating systems and applications. The consumer does not manage or control the underlying cloud infrastructure but has control over operating systems, storage, and deployed applications; and possibly limited control of select networking components (e.g., host firewalls).

PaaS (Platform as a service)

The capability provided to the consumer is to deploy onto the cloud infrastructure consumer-created or acquired applications created using programming languages, libraries, services, and tools supported by the provider. The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, or storage, but has control over the deployed applications and possibly configuration settings for the application-hosting environment.

SaaS (Software as a service)

The capability provided to the consumer is to use the provider's applications running on a cloud infrastructure. The applications are accessible from various client devices through either a thin client interface, such as a web browser (e.g., web-based email), or a program interface. The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, storage, or even individual application capabilities, with the possible exception of limited user-specific application configuration settings.

Which of these cloud layers does the Proficloud offer?

Proficloud offers both PaaS and SaaS. Our customers can't "rent" Proficloud servers to do whatever they want with them – that would be IaaS. We also don't offer Dropbox-like functionality, like using Proficloud as file storage, for Documents, Images or Videos for example.

2. Why should anyone even use Cloud?

Advantages of the Cloud are:

- Low cost
- High availability

- Scalability
- High speed of development
- World wide availability
- Ability to quickly update software
- Higher security
- Compliance becomes less of an issue
- Less time spent on secondary tasks
- Flexibility

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3. What is the Proficloud?

Proficloud is the cloud solution by Phoenix Contact. Our customers are small and medium sizes businesses who want an easy solution for their digitalization and cloud needs.

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4. Who's already using Proficloud?

Proficloud currently has about 1500 registered users. We have customers all over the world using Proficloud, including known Brands like Swiss Ricola, who are using Proficloud as part of their productive systems.

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5. Why would I use the Proficloud and not AWS, Microsoft Azure etc.?

The real difference between Proficloud and other cloud systems is the amount of time and money customers have to invest in order to achieve their goals. Of course, you can do anything and everything with AWS, but that's not the issue at hand.

The question here is: Does a customer really want to spent years to set up their own system? Do they really want to pay their own developers to create what they need? Do they have the people necessary to manage, update and improve their systems? In the vast majority of cases, the answer is no. Our customers want digitalization and cloud functionality, that's easy to setup, easy to use and "just works". They want to pay an affordable price, and they want it *now*.

That's what Proficloud is made for.

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CONTACT

6. What is the difference between PLCnext Technology and Proficloud?

PLCnext Technology is the ecosystem for limitless automation by Phoenix Contact, which Proficloud is also part of. That ecosystem consists of Proficloud, PLCnext Controls, PLCnext Engineer, PLCnext Community and PLCnext Store. Things like PLCnext -community and the PLCnext Store are running on Proficloud, but that does not mean that Proficloud and PLCnext Technology are the same thing, they just work together in some areas.

7. Which solutions currently exist? What can you do with Proficloud?

PROFINET

The PROFINET solution allows customers, to connect different PROFINET networks with each other. Devices securely communicate over the internet through Proficloud. The user only ever sees "local" PROFINET devices, allowing them to continue working as usual, while using the benefits of cloud technology. On top of that, they can get information from the internet (like weather data) into their local PROFINET, allowing them to use that data locally.

TSD

TSD stands for time series data. Time series data is a series of data indexed in time order. The Proficloud TSD service allows customers to send data from their devices into Proficloud and have it visualized in our own dashboarding solution.

8. How can I use the whole thing? Where do I get an account?

You can register for free on www.proficloud.net . Registering is just as easy as creating an email address. If you need any developer documentation or deeper access, just talk to us and we'll get you sorted out.

9. How do you pay for Proficloud? What are Cloud credits?

Paying for Proficloud is done through Cloud credits. You can think of them like a prepaid card you'd find at a gas station. Customers can buy cloud credits to top up their account. There are different sizes of the Cloud credit card available, so customers are free to choose whatever they see fit. Once they've topped up their account, they will pay with their Cloud credits. Depending on what kind of a service inside Proficloud they use, the respective amount of Cloud credits will be removed from their account in order to pay for it.

10. What is an „app"?

An app is a software package in the context of the PLCnext Technology. So it is an application running on a PLCnext capable device, like the "AXC F 2152". The application can be either a complete automation solution or a library developed with the PLCnext Engineer. An app can be uploaded by an developer to the PLCnext Store. A customer buys an app and is able to install the app directly on a device.

11. What is an SDK?

SDK stands for software development kit. The idea behind it is to enable people to develop their own software for an established platform.

12. What is the Proficloud SDK? Can I develop my own "app" in Proficloud?

We currently offer 2 SDKs. These are the Connector4j SDK and the Connector4c SDK. They can be used to create devices (whether physical or virtual) which send data into the Proficloud. They can NOT be used to develop any software which will run inside Proficloud itself.

13. What is a virtual device?

A virtual device, as opposed to a physical device only exists as software. What that means is that a virtual device is basically a program running on a computer, which has the ability to send data into Proficloud, just like an AXC- F 2152, a Cloud- IoT -Gateway or a Proficloud Coupler.

14. Which hardware devices can connect to Proficloud?

- The Proficloud Coupler which is part of our PROFINET solution
- the AXC- F 2152 which sends data into our TSD solution
- the Cloud -IoT- Gateway which is also part of the TSD solution
- the AXC Cloud Pro which is the counter part to the Proficloud coupler and therefore also uses the PROFINET solution

15. What does MVP stand for?

MVP stands for "minimum viable product", which is a product with just enough features to satisfy early customers, and to provide feedback for future product development. MVPs are rare in hardware development, because once hardware has been delivered to customers, it can't really be changed.

With software however, that limitation does not apply. The MVP approach is very common in software development, because it allows companies to release new features early while only taking small risks, because MVPs are cheaper and take less time than developing a complete solution from the get go. It also gives developers the opportunity to receive early feedback from customers, therefore making sure that future development happens in accordance with the customers' interests. MVP does mean that a certain feature will never be implemented, just that it might come in a later release. The MVP model of development is our standard mode of operation at Proficloud.
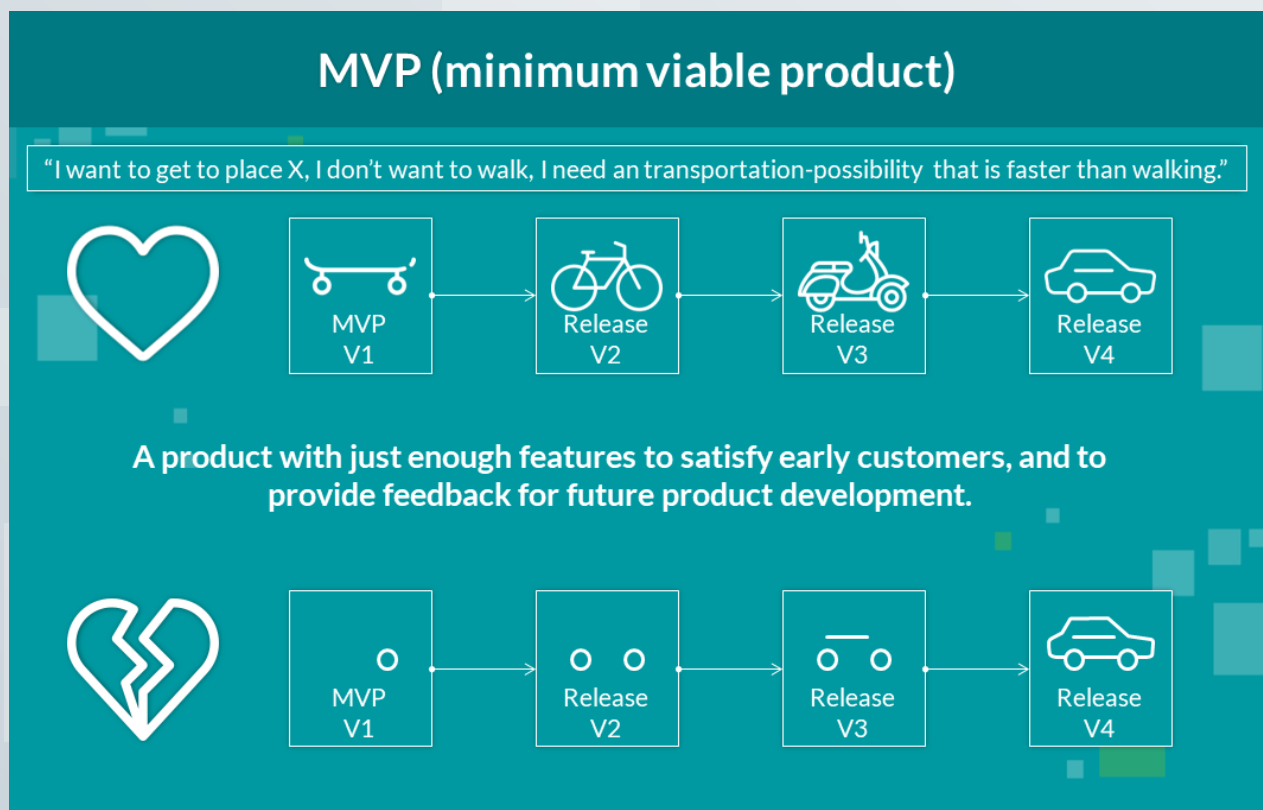
16. What is a metric?

Metric is just another name for variable. One example could be a temperature, wind speed, voltage etc.

17. What's an appliance?

An appliance is any kind of device that operates within the Proficloud context. That includes both hardware and software appliances.

18. Is my data secure?

Absolutely. All of Proficloud is running in specialized data centers. We take care of everything related to security and reliability, like timely updates, backups and access controls.

19. What do we actually do?

Our daily business is furthering the development of Proficloud. That includes:

- Enhancing the capabilities of the Cloud itself (adding more servers etc.)
- Improving Proficloud as a platform (making it easier to develop new services, allowing new functionality etc.)
- Developing new services for our customers
- Developing software updates for the hardware (Cloud IoT Gateway, Proficloud Coupler, PLCnext devices etc.)
- Working with different business units in order to get more devices connected to Proficloud
- Working with our vertical market management to create solutions which benefit our customers
- Evangelizing for the cloud inside and outside of Phoenix Contact
- Third level support for all things Proficloud
- Take care of all the other little things concerning Proficloud: Data protection, legal requirements etc.

We're always looking into how we can improve the different products our colleagues are creating. What can we do to improve your products? How could we help you with implementing cloud functionality in these products?

Just come talk to us if you already have an idea or you'd just like to know what we could do for you. Together we can always take a look at your products and come up with different ideas to help you benefit from our digitalization and IoT strategy.

20. What don't we do?

We do not:

- Develop libraries for PLCnext Engineer
- Develop websites for Phoenix, other than Proficloud

21. What's the difference between Proficloud and mGuard secure cloud?

As of right now, there are de facto two cloud systems in Phoenix Contact. One is the Proficloud, and the other the mGuard secure cloud.

Proficloud is a "general purpose" Cloud for industrial use, while mGuard secure cloud has its focus on providing secure VPN connections to customers.

To clear up any confusion: mGuard will in the near future be integrated into Proficloud. From that point on there will only be Proficloud, but of course the full mGuard secure cloud functionality will still exist inside Proficloud.

22. Where is the data/Proficloud located? Does Phoenix Contact run their own data center? Which data protection law applies?

As of right now, Proficloud is running in AWS and IBM data centers, located in Frankfurt. Phoenix Contact does not operate their own data center for Proficloud. Because all Proficloud data is hosted in Frankfurt, German law applies.

23. I'm from department x, we'd like to create our own services, which runs in Proficloud.

We've noticed that people tend to underestimate the complexity and amount of work needed in order to create cloud services. We get a lot of good ideas from colleagues who'd like to develop their own solutions

for Proficloud as well. Unfortunately, that's not possible in most cases, since developing these solutions isn't all that easy and usually takes teams of 6+ people months of full time work.

The general rule of thumb is: If you want to develop a service which runs in Proficloud, you don't do it yourself. You come to us, and we'll do it together.

24. I have a customer who needs a customized solution for his business, because he wants to do x, can you help me?

It depends. Our first rule of thumb is to develop scalable solutions which we offer as self- service products, allowing customers to do most of the work by themselves without requiring anybody else to tell them what to do. These solutions are usually scalable and adapt to a broad array of different customers. If your customer still wants things to be done differently, just talk to us about what your customer wants and needs, and we'll see if the idea is feasible and we can help you out.

25. Can my customer get Proficloud on premise?

In short: No. Proficloud is meant to be a public cloud system. That allows us to price our services competitively while minimizing management overhead and also guaranteeing the highest amount of security. We've found that most people massively underestimate the cost and effort necessary to running an on premise cloud.

26. I need more information, on a technical level: What kind of APIs can be used? How can I run a docker container in Proficloud? When do I use the SDK and when do I need the API? How does authentication work? Etc.

In most cases, these kinds of questions warrant a 1on1 discussion with us. Please leave a message in the forum and we'll get back to you as soon as possible.

27. Can I see the data of other users in the dashboard? How can I share my dashboards?

Dashboard access can be shared by inviting other users into your Proficloud TSD device manager account. After that, they will be able to view your dashboards in Grafana.

28. How do I get a UUID to use with the SDK?

If you need a UUID (or our SDK) just feel free to contact us (the Forum in this Phoenix Contact World community would be a good starting point) and we'll provide you with everything you need.

29. Can I control my PLC through Proficloud?

Generally speaking: yes. Since the connections between devices and the cloud we use are bidirectional, it's possible. We don't offer that functionality out of the box though. One of the reasons being, that while the cloud has obvious advantages, there are a couple of disadvantages as well: Latency is higher, for example, which could play an important role when "controlling through the cloud". A lot of the things PLCs are used for, are mission critical tasks. What if someone unplugs the Ethernet cable? What if the ISP has an issue and the network access is gone? Customers really need to think about whether controlling PLCs through

30. Further questions?

In the case of further questions, which can't be answered by our Phoenix Contact World page, please take a look at the forum in this Phoenix Contact community and ask your question there.

31. Glossar

TSD

Time series data

UUID

Universally unique identifier

Self- service

The idea, that customers can use a system all by themselves, without needing us to integrate or develop specific software for their use cases

VPN

Virtual private network, a way of securely sending information over the internet

IDM

Identity manager. It's a part of Proficloud, which is responsible for authenticating users and devices within Proficloud

M2M backbone

Machine to machine backbone. It's a part of Proficloud, which is responsible for routing messages and information between devices

TSD device manager

The Proficloud service which allows users to manage their TSD devices

TSD analytics

The Proficloud service which allows users to create dashboards and view their data

SDK

software development kit. Allows programmers to develop software for a given platform.

IaaS

Infrastructure as a Service

PaaS

Platform as a Service

SaaS

Software as a Service

Container / Docker

Docker is one example of a container technology. To simplify things, containers are similar to virtual machines. They contain blocks of software, and can quickly be started and shut down again.

REST

representational state transfer, an architectural style for designing web services

API

Application programming interface, it allows programmers to interact with an existing system

Bayeux Protocol

The protocol we're using for communication between devices and the cloud

Websockets

Protocol, which allows bidirectional communication over a single TCP connection

MQTT

Message queuing telemetry transport, a protocol used in IoT and machine to machine communication

Microservice

The idea of creating a big system out of loosely coupled smaller parts

Load balancing

Distributing a workload throughout multiple servers/systems

LoRaWAN

Long range wide area network, a technology used in smart cities and IoT