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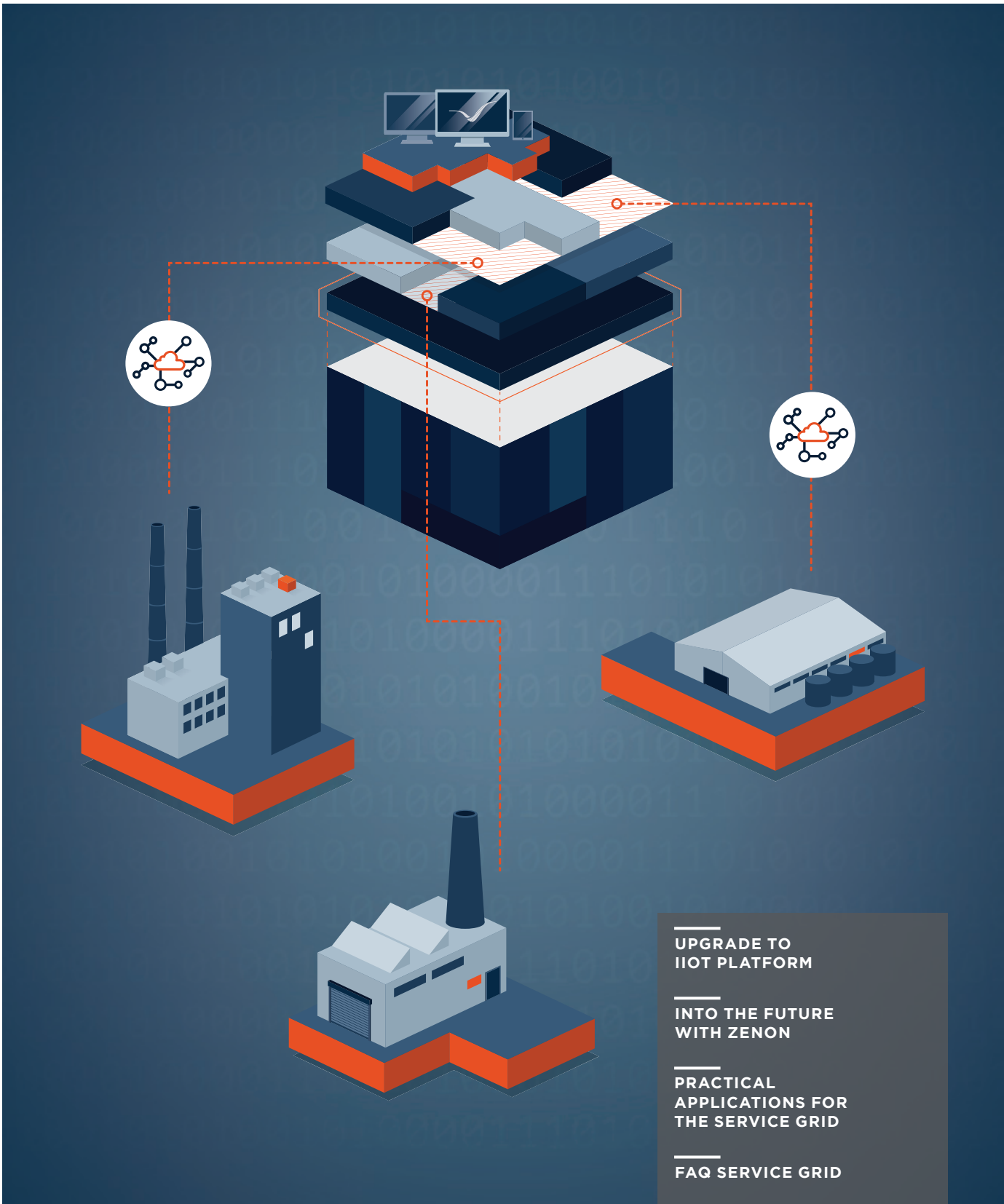
Special topic:
SERVICE GRID



UPGRADE TO IIOT PLATFORM

INTO THE FUTURE WITH ZENON

PRACTICAL APPLICATIONS FOR THE SERVICE GRID

FAQ SERVICE GRID

zenon Service Grid: Upgrade to IIoT platform

Right from the word go, many of our longstanding customers have relied on the flexibility, scalability, and expansion possibilities offered by zenon as core capabilities which serve the needs of project creators and users alike. Ongoing digitalization, Industry 4.0, and the new challenges constantly arising from Industrial Internet of Things (IIoT) projects have seen the advantages of zenon become basic requirements for a versatile and multi-functional industrial software. The Service Grid, a comprehensive functional expansion of the software platform, provides our customers with a future-proof solution.

VIRTUALLY UNLIMITED POTENTIAL

Integrated, seamless information flows at all business levels are critical success factors for companies within all industrial sectors. This information forms the basis for boosting efficiency in production, IT, and other disciplines. This is why it is important for companies to ensure that all the organizational measures and processes in their digitalization projects support these flows of information.

Standardizing processes opens up a whole host of new opportunities. This includes continuous improvements to existing business models or developing new business sectors. But the ever-growing number of smart machines and equipment no longer simply exchange relevant data via the Industrial Internet of Things (IIoT). In fact, components, machines, machine groups, and even entire processes are using this data to react to changing circumstances and parameters on the basis of established patterns and structures – often without any human input. This allows for distributed project engineering across multiple production lines and locations, which can now be configured and maintained more easily from a central location. The benefits of centralized control are especially evident in systems which are geographically distributed or less easily accessible, for example in the production of renewable energies, such as photovoltaic or wind power stations.

THINKING AHEAD WITH ZENON

All components of the software platform, including zenon Editor, zenon Runtime, and zenon Analyzer, had already been developed with integrated and networked configuration and use firmly in mind. The evolving requirements our users have of zenon, and the high level of demands we place on it, drive us to continuously reassess and develop the platform and its components. Our Service Grid concept is designed to meet this very aim; bolstering the evolution of our products. Simply put, the Service Grid is a functional upgrade of zenon to a distributed software platform – facilitating the integration of zenon within the IIoT. Its components – or services – are designed to fulfill specific tasks, which can be installed and operated on different systems independently of each other. Since both physical and virtual machines can serve as the base system,

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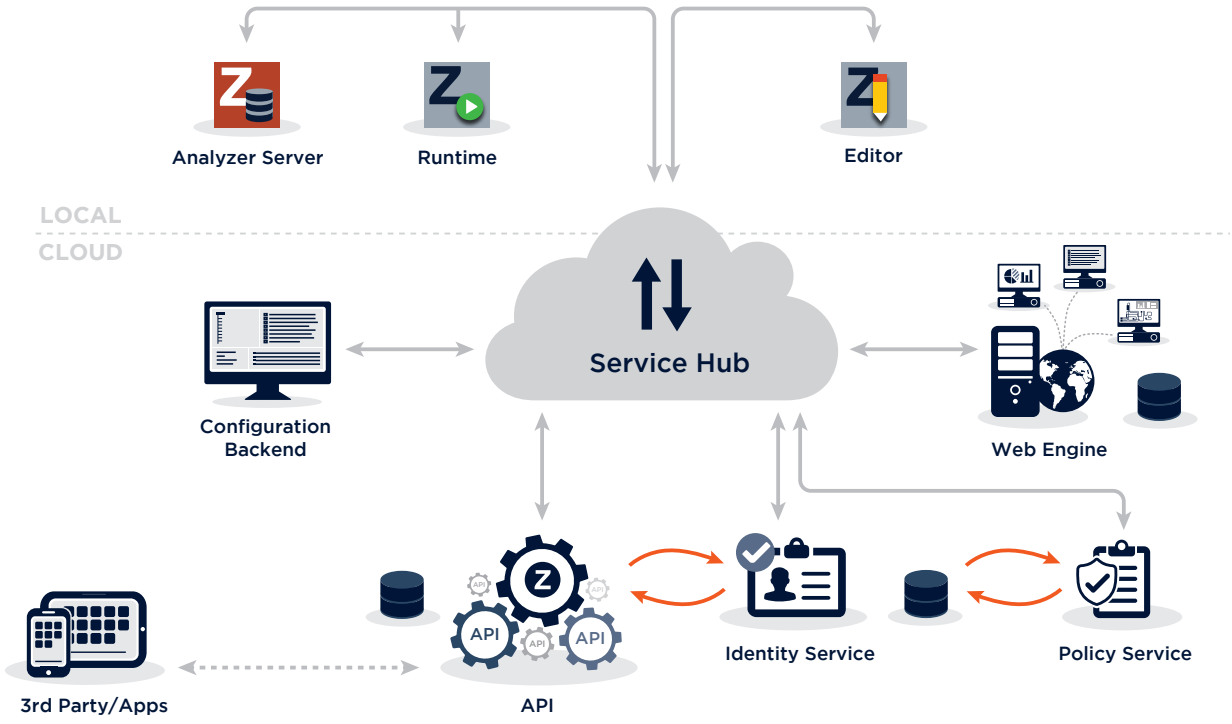

Figure 1: All components in the zenon Service Grid are connected via the central Service Hub. This also constitutes the connection between the local level and the cloud.

the Service Grid can be used on cloud platforms, giving zenon customers complete flexibility and enabling them to implement highly specialized and specific solutions. From networking systems across different locations and harmonizing processes, to simply connecting IoT equipment such as smart energy meters and wearables or integrating third-party systems – the networking possibilities are virtually limitless.

VERSION 1.0 AVAILABLE NOW

The individual services exclusively use web technologies such as Docker and Kubernetes, meaning that they are flexible in their application. The Service Grid functionalities are available from zenon 8.10 and zenon Analyzer 3.30 versions (zenon Release 2019). A core component is the Service Hub – the communication hub within the IIoT platform. The entire data exchange between all participants is controlled by it. Alongside seamless communication between zenon Editor, zenon Runtime, and zenon Analyzer via the Service Hub, the Service Grid API also facilitates a smooth connection with other communication participants for the retrieval and supply of data. All communication is encrypted and requires both access data and a digital certificate, ensuring that information can be transferred securely even when using public networks such as the internet. Integrated authentication and authorization mechanisms enable users to tailor rights-management measures to each application.

SERVICE GRID COMPONENTS

Let's take a closer look at the components and architecture of the Service Grid. In general, local installations of zenon and zenon Analyzer close to the process form the basis of a project. The data exchange between zenon Runtime and zenon Analyzer can then take place directly as before. If zenon Runtime is connected to the Service Grid, variable values and entries from the Chronological Event List (CEL) or Alarm Message List (AML) can be transferred to other services. These values can be real-time data or historical data. Processing value changes or data predictions makes it possible to control the runtime, as well as the underlying processes. Within the Service Grid architecture, zenon

Figure 2: Data can easily be displayed and controlled via the open-source platform Grafana (www.grafana.com).

Editor can provide metadata for zenon Analyzer and can also configure the runtime project contents that should be made available in the Service Grid. Connecting zenon Analyzer to the Service Grid enables report results and data predictions to be made available to the Service Hub. With the assistance of third-party applications, this results in a wide variety of scenarios for the further processing and enrichment of data.

Information can be shared and made available to other participants via the Service Hub. The Service Hub comprises two coordinated parts: the Data Hub and the Hub Controller. The Data Hub ensures that news and events are communicated to the relevant recipients, while the Hub Controller is responsible for maintaining access rights for the individual services. The Hub Controller determines the degree of access that services are authorized to have and forwards this information to the Data Hub. Individual access data must be generated for each service to ensure that only authorized services are able to consume and provide data.

INTEGRATED API

Simply connecting third-party components or clients such as web applications, mobile apps, MES, or ERP systems via the Service Grid API significantly expands the software platform's current application range. By accessing the application programming interface, variable values or even entire reports can be retrieved and then processed in external clients, facilitating easy and seamless processing of third-party data in connected zenon installations. The interface currently offers a REST interface. However, the API is designed for modular processing with different protocols and interfaces. Expansions such as OPC UA and MQTT are already in the works. The available options for displaying or using data in third-party systems are therefore extremely wide-ranging. Services such as Azure Analysis Services can be used to create customized business intelligence solutions, or open-source platforms like Grafana can be used to tailor data visualization to each business purpose.

NEW WEB ENGINE POSSIBILITIES

Use of the HTML Web Engine has also been adjusted for existing zenon users. Up to and including zenon 8.00, the Web Engine had to communicate directly with the runtime via the SCADA runtime connector. Thanks to connectivity enhancements and connection to the Service Hub, this is no longer necessary. The current functions, such as logging in users, sending value changes, or displaying variable values are, of course, still available. The planned development of the Web Engine in future Service Grid versions opens up a range of possibilities for the HTML-based representation of process data and analysis and reporting applications. Use of these applications will be made much easier, even outside of classic automation networks.

FLEXIBLE AND OPEN, YET SECURE

Despite the advantages of simply connecting third-party components, it is important to bear in mind that such connections do, of course, also carry a potential security risk. The coordinated interaction of the Identity Service with the Policy Service guarantees high security standards which can be adjusted to meet the needs of each project. The Identity Service checks all connection requests from users or clients using the Service Grid API. These requests can be processed via Microsoft Active Directory, Azure Active Directory, or LDAP (Lightweight Directory Access Protocol). After successful authorization via the Identity Service, the Policy Service establishes the exact authorizations. Highly specific read, write, and even configuration rights can be granted for individual services or users, either for specific projects or for individual variables, providing a whole host of design variants. The initial configuration, maintenance, and expansion of all settings for Service Grid components can easily be carried out via a central, web-based portal which provides the functionalities for user administration, issuing authorizations, and connecting external services and clients.

STEFAN ROBL,
HEAD OF MARKETING

HIGHLIGHTS:

- zenon as a distributed software platform
- Industrial Internet of Things connectivity
- Simplified development of new business areas
- Simple and secure connection of third-party components
- Available from zenon Release 2019 (zenon 8.10 and zenon Analyzer 3.30)

INTO THE FUTURE WITH ZENON

More than just gazing into a crystal ball

The factory of tomorrow will... How would you end this sentence? Are you thinking of artificial intelligence? Factory halls devoid of people? Networked and self-configuring machine parks? Batch size one? We don't think that there's just one answer to the question, but we're sure that you have a vision of what it should be. However, to build the world of tomorrow, we need the right tools today.

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It's clear that we cannot build the solutions of the future using tools from the past. That is why we at COPA-DATA are investing significantly in further modernizing our proven zenon Software Platform. Following our vision "There is always an easier way!" we want zenon to make it even easier for you to reach your goals in the future.

One such development consists of expanding the technical functions of the zenon Software Platform via zenon Service Grid. We are not only adding new features – we are actively merging proven and new technologies, making zenon a tool for the applications of the future. But although we're constantly thinking of future opportunities, we are certainly not neglecting our existing priorities.

ROBUST AND STABLE

In the future, applications in the industrial environment and in the energy industry will continue to be subject to extremely high requirements regarding robust, stable and often continuous, round-the-clock operation. Data acquisition, processing, and storage as well as alarms and system control are domains where you must be able to rely fully on zenon. This has been the case so far and is not about to change, even in a networked, modern world.

„Thanks to our continuous development efforts, as with Service Grid, our zenon Software Platform is your reliable and future-proof partner in the long term."

PHILLIP WERR,
CHIEF MARKETING AND OPERATIONS OFFICER

MODULAR AND FLEXIBLE

You need an environment that can be expanded and adapted in a modular and flexible fashion, so that applications are tailored to the initial use case but can also be continuously developed. zenon's modular structure and its features such as multi-project administration have so far supported these requirements. In the future, zenon's modular and flexible features will take on new dimensions, with individual tasks being performed in a modular manner within a flexible system architecture. For example, third-party systems can be connected to the cloud via the Service Grid API, while data is acquired and processed on-premise at the machine.

SCALABILITY

For many years, we have been facing volumes of data which are increasing dramatically. That is why we have always invested a great deal in improving zenon's performance to cope with the rising number of variables and data volumes. The trend is no longer to scale on a single physical PC or virtual machine, but to distribute workloads flexibly across different resources. This creates additional options for handling large data volumes and helps to relieve critical bottlenecks.

AGILE AND EASY TO MAINTAIN

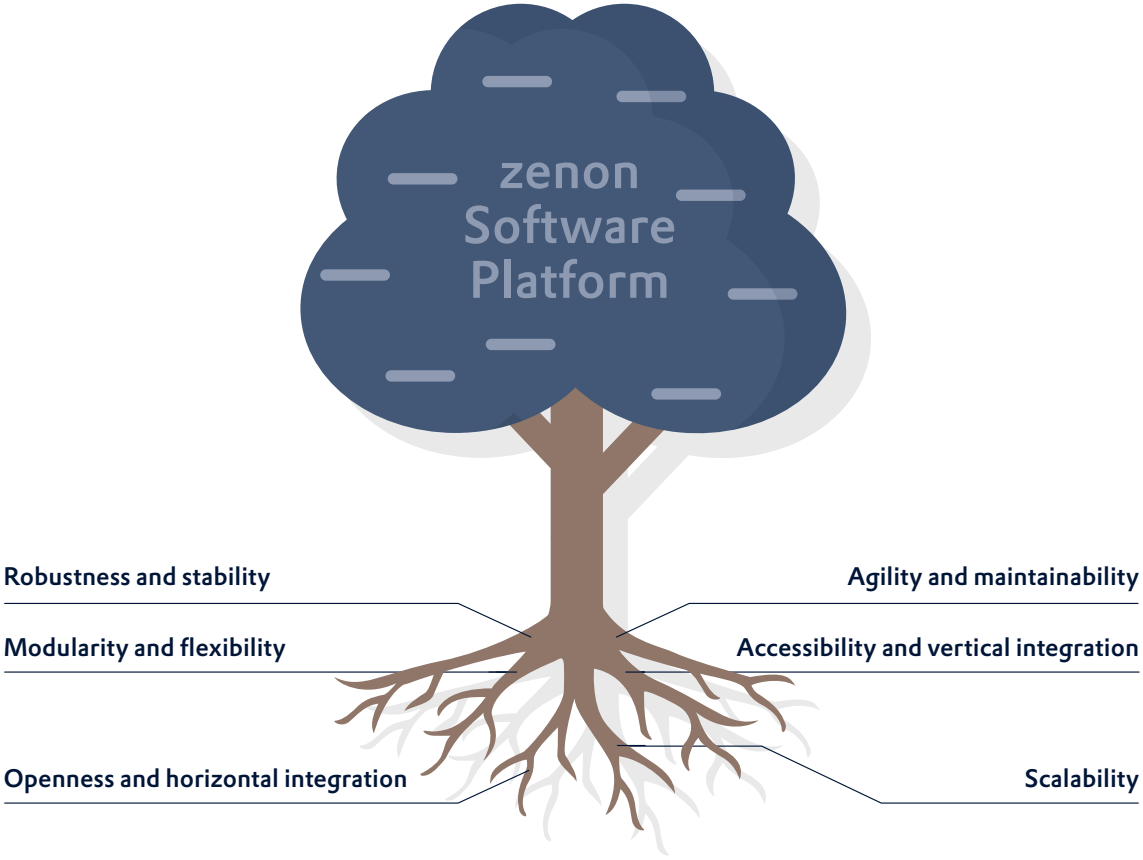
On the one hand, developers are required to create and adapt software applications quickly. On the other hand, these applications must be easy to use and easy to maintain over their entire life cycle. It must also be possible to maintain them even if they have become considerably more complex over the years, or if their original developers are no longer available.

We have always ensured that zenon projects remain easy to maintain and expand in the long term by using configurable applications, project engineering without programming, a central approach to project engineering, and continuous compatibility across versions. Rest assured that this will remain the case in a world where zenon offers a service-oriented and integrated software platform that spans sensors to global networking.

ACCESSIBILITY AND VERTICAL INTEGRATION

IT/OT (Operational Technology) convergence is used to describe the process of integrating a company's automation system with its IT system. For decades, we were used to both areas being separate worlds – technologically, but also in terms of organization and attitude. Our children probably won't understand the difference or why they were once split into two separate fields. Can you explain to a digital native that using the phone, for example, used to be a completely different discipline to writing messages and using the Internet?

Previously, vertical integration with zenon meant connecting production with the ERP system. This was primarily an interface and communication issue. In the future, the zenon platform itself will be capable of vertical integration with individual components



operating directly in the machine and other components in the company-wide data center. At the same time, all components still form part of a well-functioning whole.

OPENNESS AND HORIZONTAL INTEGRATION

It is more convenient for users to map as many disciplines as possible directly within the zenon software platform. Nevertheless, there are always use cases in which zenon acts as a team player in a large ecosystem of different systems and technologies. By using open interfaces and supporting industry standards, we have always ensured that zenon can be perfectly integrated in and expanded with third-party components. We are in constant pursuit of openness: in the future, zenon will no longer be at home only in automation systems, but also in conventional corporate IT systems. At the same time, the platform will help to create technological bridges between the two areas.

Thanks to our continuous development efforts, for example, with Service Grid, our zenon Software Platform is (and will remain) your reliable and future-proof partner in the long term. In this way, zenon can inspire you to realize the full potential of your ideas and design the factory of tomorrow.

PHILLIP WERR
Chief Marketing and Operations Officer

As a member of the Executive Board, Phillip Werr is responsible for the Marketing and Operations divisions. Before he joined COPA-DATA in the role of Product Marketer in 2010, he ran a production plant as an independent entrepreneur. The ongoing development of customer benefits as well as the topics of business model development, production efficiency, and optimized resource utilization are particularly close to his heart. He holds a degree in Management and Economics from the Free University of Bozen-Bolzano in Italy.

LinkedIn: phillipwerr

PRACTICAL APPLICATIONS FOR THE SERVICE GRID

Make it easy to monitor and control distributed locations

Our customers love zenon as a platform because of its ease of use, scalability, and expansion options. The zenon Service Grid is the perfect addition to the software platform, particularly for distributed applications. Read on to find out how Service Grid can make all kinds of production sites compatible with the Internet of Things.

The Internet of Things (IoT) is on everyone's lips, not least in the industrial sector where the Industrial Internet of Things (IIoT) is becoming increasingly widespread. IoT applications generally communicate via the Internet or mobile connections without using VPN hardware which is expensive, high-maintenance, and susceptible to fault. IoT protocols such as MQTT or AMQP are used to enable encrypted Internet-based/WAN-based communication. These protocols are designed in such a way that they even work properly over interruption-prone 4G or 5G mobile networks with a low bandwidth.

Alongside the protocols, the software components also need to be able to buffer data in the event of network interruptions and then synchronize with the higher-level system when the connection is restored. Furthermore, the fact that the software components are being used in the public network means that any gaps in security need to be closed rapidly. zenon Service Grid provides all of these features as standard within the zenon Software Platform – in the simplest possible way as always.

THE ORIGIN OF THE NAME

zenon Service Grid consists of a system of modular software components or microservices. The microservices communicate with each other, forming a communication network. This is where the name Service Grid comes from – it is a network of services in which each individual service performs a particular task. It is ideal for geographically distributed applications.

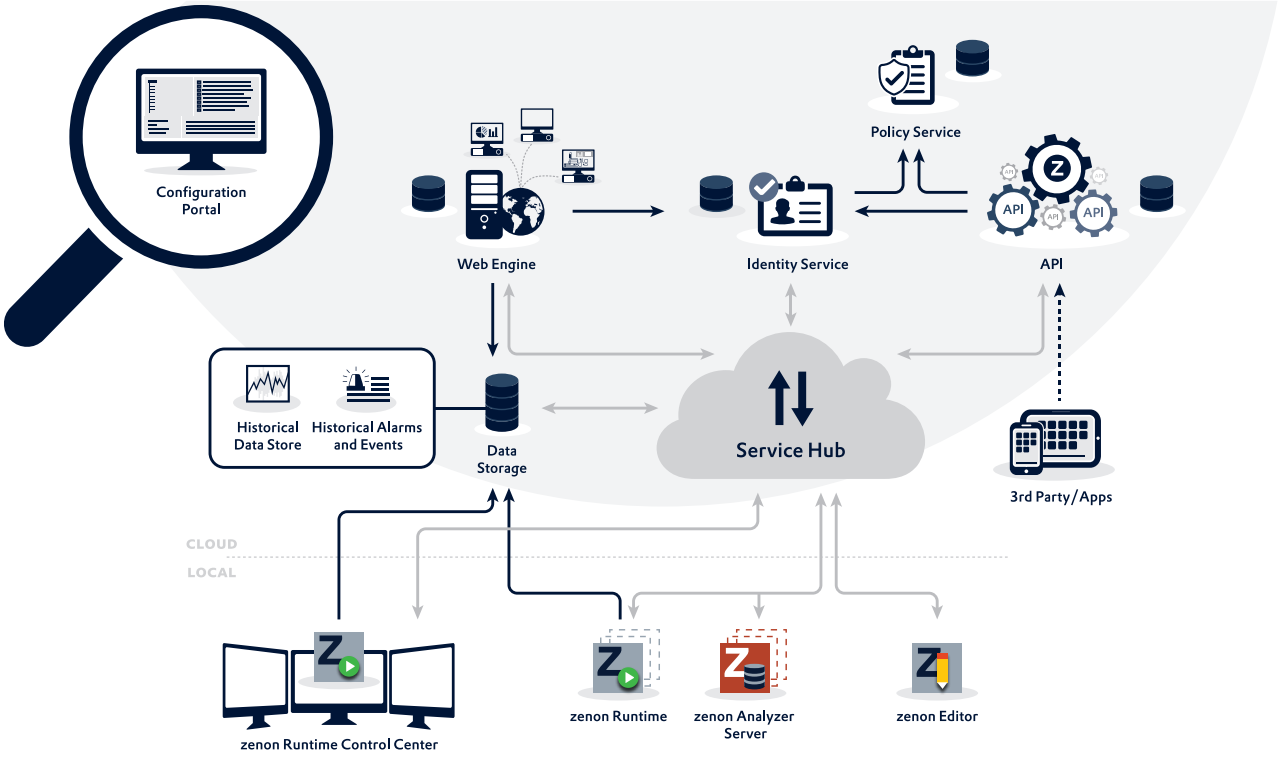
THE COMPONENTS OF THE SERVICE GRID

The most important component is the Service Hub, which is made up of two services: the Data Hub, which serves as a data broker, and the Hub Controller, which manages the nodes (i.e. all connected local equipment or services). A node must be authorized in the Hub Controller before it can communicate with the Data Hub via a secure connection. The Data Hub is responsible for bidirectional data transmission between the services of the Service Grid and with local equipment. Local equipment can also be controlled in this way. If an end device gets into the wrong hands, an administrator can block the device's access with immediate effect in just a few clicks.

FOCUS ON SECURITY

Alongside secure communication and device authorization, user administration is an important part of IoT platforms because it enables users or applications to be authenticated and authorized.

Authentication means proving and verifying the identity of a system user. In the Service Grid, this is carried out by the Identity Service using the standard protocol OAuth 2.0. This makes it possible to authenticate web applications, desktop applications, mobile devices, and IoT devices. You can also use the Identity Service as a federation gateway in order to connect additional directory services such as Microsoft Azure Active Directory, Active Directory Domain Services, or Lightweight Directory



Services of the zenon Service Grid

Access Protocol (LDAP). Single sign-on (SSO) allows you to log in to the system once and then use various components without having to log in again.

Authorization refers to the allocation – and repeated checking – of access rights for services and resources; for example, the right to access historical data via the Service Grid API. The Policy Service is used in the Service Grid for this purpose.

DATA EXCHANGE VIA SECURE INTERFACE

The Service Grid API is a web-based API which grants access to real-time and historical data such as variable values, alarms, and events. In order to request data from the API or to make changes to the data, the client application must log into the Identity Service first if it has not already done so. Once it has logged in successfully, the client application receives an access token. This makes it possible to request data from the API or to make changes to the data as long as the logged-in user has the necessary rights.

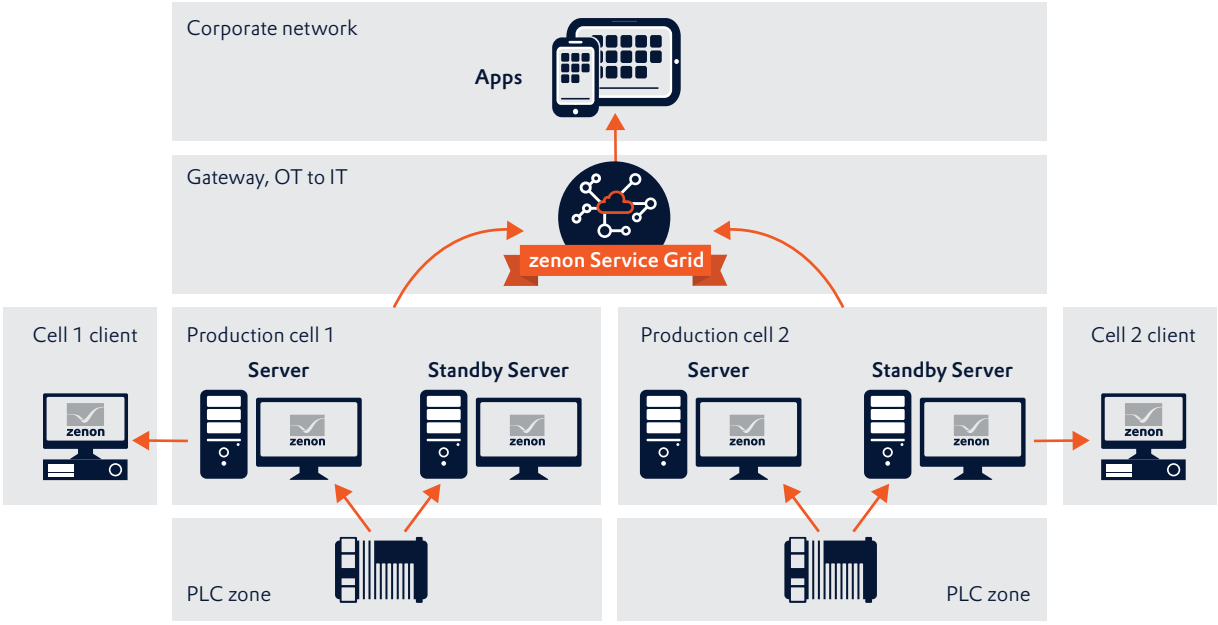
The Service Grid API was developed in line with the representational state transfer (REST) method commonly used by programmers. This web service interface communicates via the HTTPS protocol. This enables you to connect third-party software – such as Grafana – in the zenon Service Grid.

A simpler option is to use the integrated solution with the HTML5 Web Engine, which enables the web-based visualization of process images and dashboards. Alarms, events, and trends, for example, can be displayed on a desktop or on mobile end devices.

The Data Storage stores historical data such as time series data. This data is taken from the Data Storage in order to display trends in the HTML5 Web Engine, for example, or when historical data is called up via the Service Grid API.

COMMUNICATION IN BOTH DIRECTIONS

As of version 8.10, zenon Runtime has the ability to supply real-time and historical data to the Service Hub in the form of variable values, alarms, and events. Whereas in zenon 8.10, communication took place via an add-in in the project, as of version 8.20 it is carried out via an integrated functionality – the Service Grid Ingress Connector. With zenon Supervisor 8.20 and zenon Service Grid 2.0, archived data is published to the Data Storage . The Egress Connector is used in turn to read



Security gateway with the zenon Service Grid

in data from the Service Grid ; for example, in order to implement a control room application.

HOW TO INSTALL THE SERVICE GRID

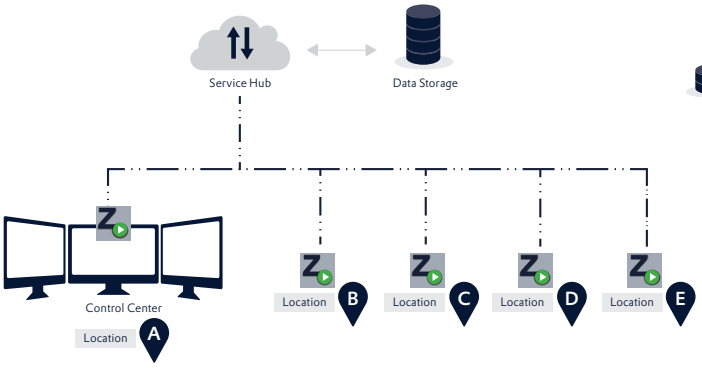
The installation process supports all standard operating systems such as Linux and Windows as well as cloud systems. The use of Docker facilitates the provision of the Service Grid by the IT department. Services can be easily transported and installed as files in the form of containers which contain all of the necessary packages. The software is updated by exchanging the container – without any loss of production data, of course.

CONCRETE APPLICATION EXAMPLES

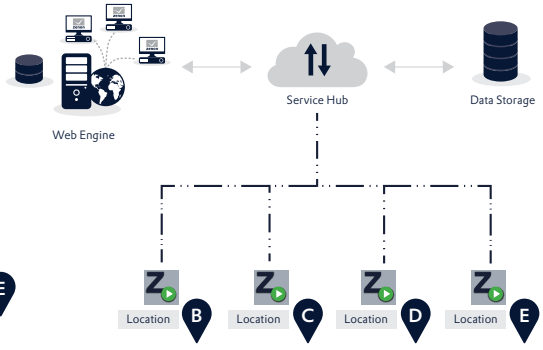
The zenon Service Grid technology is primarily intended for geographically distributed applications via the public network and offers all kinds of possibilities. You can, of course, also create local applications.

EXAMPLE 1: A security gateway between the production network (OT) and the company network (IT). Plant data from production is made available to users in the IT network via the HTML5 Web Engine or third-party systems. Access within the IT network does not affect production as there is no direct data flow between the zenon Supervisor production system and the web-based visualization. The use of web-based technologies reduces administrative work to a minimum, as there is no need to install software on the clients in the IT network.

EXAMPLE 2: Multiple renewable energy locations distributed across a country or even across the globe, which work independently and need to be monitored and controlled centrally – as cost-effectively as possible – from one control room. Real-time and historical values are transmitted to the Sservice Hhub from the local equipment via zenon Ingress Connector . The Data Storage stores all historical data relating to the local equipment. The central control room receives the data via zenon Egress Connector. The proven engineering options – with an integration project for overview purposes and subprojects for each piece of equipment – are, of course, available for use. In addition to the easy configurability of this solution, it also means that no VPN hardware is required. If the connection is interrupted – between the Service Hub and the local equipment, for example – no data is lost as the remaining data is transmitted to the Data Storage once the connection is restored.



Geographically distributed monitoring of equipment in the field of renewable energies



Mobile access for service technicians

EXAMPLE 3: Service technicians can access the equipment on the go via mobile application and can therefore decide spontaneously whether they need to make contact or visit the site in person. This makes maintenance easier and saves money.

These three examples can also be combined and applied to other industries; for example, for a mechanical engineering company that wants to provide additional support for its customers and requires machine data in order to do so.

IDEAL FOR DISTRIBUTED LOCATIONS

In conclusion, the zenon Service Grid is an expansion of the zenon Software Platform for geographically distributed, industrial applications. It is made up of individual services which may or may not be required, depending on the application in question. Every IT department can install and update the Service Grid in a cost-effective manner through the use of containers.

An example showing how to integrate Grafana can be found here: https://github.com/COPA-DATA/grafana-service-grid-api-datasource

GERALD LOCHNER
Head of Product Management

Gerald Lochner has been part of the COPA-DATA team in Salzburg, Austria since September 2014. The former software developer is responsible for product management for the zenon Software Platform and is passionate about making sure that it is fit for the future.

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FAQs

Everything you ever wanted to know about the zenon Service Grid

Now it's easier than ever to use the Internet of Things in industry

The zenon Service Grid is the perfect addition to the software platform, particularly for distributed applications. Here, we'll consider the particular benefits of this software expansion. Why is it ideal for equipment distributed across a country or across the globe? How does it establish the connection between a company's OT and IT networks? How is it installed and what license models are available? The answers to all these questions and more can be found here.

Is the zenon Service Grid intended to replace zenon Runtime, zenon Logic, and the zenon Analyzer?
No. zenon Service Grid expands the platform in the direction of the Internet of Things (IoT). It is not a standalone product. Rather, it is an IoT upgrade for the zenon Software Platform which enables completely new applications. The zenon Service Grid was designed in line with current best practices and state-of-the-art approaches to software development. It uses architecture concepts such as microservices, bringing together several individual software components to form a large, scalable application. The distribution of the components allows you to make efficient use of the existing hardware resources.

What are the key benefits compared to other IoT solutions?
The zenon Service Grid allows you to monitor data from distributed locations in an integrated solution. In conjunction with Service Grid, the zenon Software Platform makes it possible to transfer data continuously from the fieldbus level to the cloud within one system. The central development environment makes engineering easier and reduces the amount of work required overall. Thanks to the backward compatibility, existing projects can also be easily integrated into the overall system.

How does Service Grid help to protect the OT network?
zenon Service Grid works exclusively with unidirectional connections. All nodes use outgoing connections to communicate with the Service Hub – this includes zenon Runtime. Communication is encrypted via Transport Layer Security (TLS) and the identity of the participants is verified by means of digital certificates.

What kind of applications is the Service Grid best suited to?
The main purpose of zenon Service Grid is to provide a simple connection between geographically distributed

zenon installations – in the case of international production sites, for example, or in the field of power generation. The collected production data can be visualized in a central location, such as a control center, with the aid of zenon Runtime or the HTML Web Engine. The Service Grid can also be used as a security gateway between OT and IT networks in order to transfer data from the field level to third-party systems in the IT landscape. For more information on this subject, please refer to the previous article which contains further concrete examples.

Is the Service Grid intended to replace the zenon network?
No, zenon Service Grid and the zenon network can and should exist in parallel and each should be used appropriately, as the situation demands.

When does it make sense to continue using the zenon network?
The zenon network is used in the context of OT within one plant in order to synchronize runtimes with each other. zenon Service Grid, on the other hand, is generally used in conjunction with WAN connections over large distances in order to process selected data from zenon Runtime or zenon Analyzer in a cloud application or a local data center.

Which systems can be integrated for the purposes of exchanging data?
zenon Service Grid is primarily used to exchange data between the software components of the zenon Software Platform; i.e. between zenon Runtime, zenon Analyzer, zenon Logic, and the HTML Web Engine. In order to guarantee the security of the data and the data exchange process, external systems cannot be integrated with the internal communication layer of the Service Grid. Third-party systems can obtain data for further processing via the REST interface of the Service Grid API.

What kind of data can be exchanged via the Service Grid?
The Service Grid supports various types of data. Process data such as variables, alarms, and events can be exchanged in large volumes. As well as distributing real-time values, the system can also access historical archived values. Furthermore, you can set whether each individual data point should be available as read-only, available for read and write access, or not available at all in the Service Grid. Alarms can be confirmed and linked with comments as well as causes. The Service Grid also has an interface with zenon Analyzer, which can be used to generate and retrieve reports. zenon Analyzer also allows you to use all existing SQL-stored procedures in order to carry out data analysis. Engineering data can be synchronized between zenon Editor and zenon Analyzer, ensuring that zenon Analyzer metadata is always up to date.

Is zenon Service Grid scalable?
A stable, high-performance system is a necessity, particularly in the case of large distributed systems with numerous plants. For years, zenon Runtime has served as a stable foundation for data acquisition and analysis as well as process control in such environments. zenon Service Grid responds dynamically to high load peaks. A higher-level management system records the utilization of individual services and can implement scaling measures. Through a generic approach with container-based applications, you can scale each service independently within zenon Service Grid. You have a free choice when it comes to the container platform and the management system. However, COPA-DATA recommends using Docker and Kubernetes. Instructions for operation on this platform basis can be found in the help documents.

Why is the REST interface provided in zenon Service Grid?
REST interfaces are widely used and are a popular way of exchanging data between software systems via HTTPS. Further benefits include the fact that they are not dependent on any particular programming languages or platforms, they are optimized for large data volumes, and they enable the connection of mobile applications. REST interfaces are not standardized and are always configured for the specific application in question. They support various data exchange formats, including JSON, XML, or any type of text format.

What does the Service Grid do in the event of a network failure?
zenon allows you to evacuate historical data from zenon Runtime into zenon Service Grid. If the network connection fails, the entries are buffered until communication is reestablished. Following successful synchronization, the local memory is enabled again, thus preventing data loss.

How are user authorizations implemented?
The authentication and authorization mechanism is based on a two-stage concept. In the first stage, the user is authenticated by means of the Identity Service, thereby answering the question "Who am I?". The Policy Service is then used to decide what rights the user has, thus answering the question "What am I allowed to do?". This system makes it possible to implement complex access rights.

Do staff need specialized IT knowledge in order to install and operate zenon Service Grid?
Your IT staff will need some in-depth knowledge; for example, in order to tailor the required parameters of the individual services to the installation platform. This is carried out directly via configuration files during installation. If you want to benefit from advanced functionalities, such as dynamic scaling and failsafe performance, you will need to use technologies such as Docker and Kubernetes. Specialized knowledge and experience are required in this case, as the IT staff will be responsible for operating and maintaining the installation over the long term, including taking care of troubleshooting and software updates.

Does Service Grid only run in a particular cloud environment?
zenon Service Grid is platform-independent and cloud-independent. You can choose any cloud provider or opt for operation within a private data center.

Why are new technologies such as Docker used?
It is particularly advantageous to use new technologies in the case of web applications in the cloud environment. Application requirements such as scalability, platform independence, and easy installation can be achieved more easily and efficiently with these technologies.

Where are the installation packages and how do I install zenon Service Grid?
The process varies depending on the type of installation. A Windows setup program is available for classic installation, which should be carried out on the server hardware and server operating system. For installation in a cloud environment or a local data center, Docker images are available in the COPA-DATA registry. These images should be installed on an existing Kubernetes cluster.

How are the individual components of the Service Grid updated?
In the case of classic installation, the individual components are updated with the ISO installation package. If the Service Grid is operated with Kubernetes, you can easily update the components by using the latest Docker images. In both cases, only the binary files of the components are updated. The configuration of the Service Grid installation remains the same. This means that you can continue using the system immediately after the update.

Do I need an SLA for the Service Grid?
You will need a valid service level agreement (SLA) in order to purchase and operate zenon Service Grid. This will give you access to the latest security updates and functional enhancements at all times. Improvements are implemented in zenon Service Grid on an ongoing basis and are provided via the COPA-DATA registry.

What license models are available?
You can purchase zenon Service Grid as a monthly subscription with billing on an annual basis. The Service Hub, Data Storage, Identity Service, and Egress Connector components are included. The Ingress Connector can also be licensed, if necessary. In this case, the price is dictated by the number of variables in the existing zenon Runtime. The connection between the Web Engine and the Service Grid can be configured either as a read-only connection or a read-and-write connection, whereby licensing is based on the number of users. Any further components connected via the API Gateway can have either a read-only or a read-and-write connection. Furthermore, a connection from zenon Analyzer to zenon Service Grid can be licensed in order to output reports via the Web Engine or the API Gateway.

How does the release cycle for the Service Grid compare to zenon Supervisor and zenon Analyzer?
We have been systematically developing and refining the zenon Software Platform over the last few years. With the next version – zenon 10 – all components of the zenon Software Platform will be released simultaneously for the first time, including zenon Service Grid. An annual release cycle is regarded as appropriate in the OT world, but it is not fast enough for cloud scenarios. COPA-DATA will, therefore, offer zenon Service Grid in two different versions. The version with long-term support will be released annually with the other components of the zenon Software Platform. To enable timely updates and enhancements, there will also be three further releases; one at the end of each quarter. You are free to choose the option that best suits your needs.

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