

Product portfolio

True data driven decisions



True data driven decisions

Unite your data and discover the true possibilities. Gapit Nordics aggregates data from all relevant data sources and provides a platform that gives value to your data. Reveal weaknesses and possibilities within the technical infrastructure, validate executed measures, detect deviations and avoid unwanted events.

Our services are based on collection, storage and visualization of data. The data can be drawn from electrical components, gas, heating systems, water, air pressure, temperature, and more.

Our service is manufacturer-independent and license free and can be implemented on all measuring instruments. We have standardized some of our most used services, but we are also able to make tailored solutions to meet your needs.

All of our work can be done remote, no need for physical presence.

If none of our standardized services meets your needs, please contact us for a complimentary consultation to discuss your personalized needs.



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CO₂ consumption

■ Full control ■ Reporting ■ Valuable insight

* Requires that the installation has network access to Gapit Nordics web API.

Introduction

Do you know how much CO₂ your operation generates? Do you need to report on CO₂ consumption or maybe show your customers how your CO₂ footprint looks like? Is your organization ready to report on environmental footprint?

CO₂ overview

Gapit Nordics' CO₂ module considers how much energy is imported and exported into Norway in real-time. It also takes into account how energy is generated. The world is transforming more and more power generation over to renewables, but contributions coming from fossil fuels contribute to the overall CO₂ consumption.

Green possibilities

With data about how and what type of energy is created, combined with your live current consumption, Gapit Nordics can give you an accumulated CO₂ number for your operation. Both an overall total score and a more granular display. This can help you answer questions like how much CO₂ is saved by charging electric cars at your plant.





Single point of integration

■ Time to market ■ Standardization ■ Manufacturer independent

Introduction

When all data is collected into a single source, systems consequently get a single integration point. You don't need to tackle device-specific integration to each piece of equipment and can instead get data from every device through the Gapit Nordics system. Whether you have a BMS/SCADA system, ERP system, or customer portal, you have the same single integration point to access all data collected, both live and historic. Using the API for data extraction is the recommended way of extracting data. This is free of charge as this functionality is already included. If data is to be sent with Modbus this is charged per datapoint.

Manufacturer independent

Modern systems use programming interfaces called APIs to communicate. Gapit Nordics' documented API makes data extraction a breeze. Collecting, storing, and analyzing vast amounts of data is already taken care of so you can concentrate on using data. Data can flow in both directions, enhancing data collected with metrics from support systems.

We strongly recommend using the API to extract data as this gives the most flexible and future-proof solutions. By using well-documented API's data can quickly be sent to third-party systems like Google Cloud, Microsoft Azure, or AWS. All communication to third-party systems is done through an ethernet interface. No communication converters or special adapters are needed.

Use your data

Data Gapit Nordics collects is correctly timestamped. It enables data aggregation of all accumulated data points. This means that data extracted from the Gapit Nordics platform has the correct timestamp even if the equipment time has an offset.



Data collector

■ Scalable ■ Cost-effective ■ Standardization

Introduction

Gapit Nordics' data collectors work as a translator from industrial protocols to a uniform modern API ready structure. It supports all modern web protocols and can send data to different endpoints at the same time. Data can be read from industrial protocols such as Modbus TCP, SNMP, MQTT, OPC UA, API, Bacnet IP, and more.

Gapit Nordics takes pride in being completely manufacturer-independent, we also support all brands of equipment. Remove your silo systems and have data from all devices combined into one tool.

Cost

The microservices can communicate directly with industrial equipment without any specialized hardware.

The services can run directly on a standard server, either locally at a customer site or in a cloud datacenter. This means there is no need to buy expensive hardware to read data from old equipment. The traditional method of integration is price per datapoint.

The problem with this is that customers have to select which point they need and often keep the number of data points as small as possible to save money.

Gapit Nordics has a price per device model where every data point available from that device is collected. Meaning our customers don't have to spend time figuring out which data points are essential from specific equipment.

Standardization

Gapit Nordics has standardized integrations instead of having them on a project-to-project basis. This means that the integration is tested and verified and does not need project-based tweaking. One integration is a standalone module tailor-made for the specific device it reads data from - giving the best possible data quality and data integrity the component can achieve. The modular philosophy makes Gapit Nordics' integrations highly scalable, and integrating hundreds of devices can be done in a matter of seconds. This is key to decreasing your project's time to market and fully utilizing your equipment. Everything is collected.



Wall of Integration

HVAC Systems

Modern HVAC systems are autonomous controllers and do not need direct control. However, by integrating the controller with Gapit Nordics, you can make sure the unit is controlled optimally. Maximize free-cooling and minimize cost.

Grid analyzers

Grid analyzers are more than power and energy. They contain information about harmonic distortion voltage variations and various other details you need to diagnose your power.

Generator controllers

Uniting the generator controller removes the need to do manual reporting during generator testing. It also makes all parameters available, which is crucial to enable predictive maintenance.

I/O controllers

There are hundreds of manufacturers of IO controllers. With Gapit Nordics, you can combine IO into the same system and correlate data into one tool.

Battery health systems

Battery systems contain a load of information on each separate battery in a battery string. One defective battery can bring down the whole battery bank. Gapit Nordics collects all available battery data, and trends can reveal a pattern before erroneous conditions happen.

Breakers

Modern breakers have thousands of parameters available. For example: contact wear, breaker operation, extended trip details, energy monitoring, internal diagnostics, and maintenance.

Energy meters

Whether you have customers you supply energy to or are using it yourself, energy control becomes extra crucial. This is also important when it comes to the various environment classifications.

Earth fault detectors

Earth fault detectors are crucial in a grid allowing it to continue operation if an earth fault is present. Continuously monitoring an earth fault can also reveal patterns that can be used to search for faults.

UPS and IPS

Keeping power stable in your operations is crucial. Analyzing what goes on in the UPS is almost as important. Having historical trends of capacity and various other parameters provides vital insight into your operation.

Weather stations

Outside weather is one of the most critical factors that affect your plant, especially when it comes to cooling and other environmental factors. Gapit Nordics can collect data from locally installed weather stations to get as accurate ecological information as possible.

And many more.





360 view

- Centralized remote operation
- Easy to implement
- Realtime values overlay

* Requires 360° photos of the site

Introduction

Some say a picture is worth a thousand words. We at Gapit Nordics take that a step further by placing collected data on top of 360 pictures. When you have technical locations spread around a large area or on different sites, pictures can be the best way to see how it works in real life.

360 pictures give an excellent overview of how a room or area is and how the equipment is placed. It has the benefit of high-resolution images and a google street-view navigation. Everything is run completely on-premise without any need for a cloud service.

The tools you already use

Being a pioneer in the market, Gapit Nordics combines 360-degree pictures with real-time data. This is done in Grafana utilizing a tool our customers are already familiar with. It gives operators the ability to do virtual tours around their facility and inspect real-time values. Doing remote support is now a lot easier when you can guide a person on the phone while seeing the same as they are. You will see the same values on screen as they are reading on the instruments. Gapit Nordics' 360 live data view is useful for all customers looking to centralize their operations. In a quick glance, the operators can get an overview of all their sites.

Training

Training contractors and showing them where and how a job can be done minimize the time they have to spend in the facility. It also makes them more prepared and helps to mitigate the risk of errors as they are already familiar with the site they are working on.





Footprint

■ Baseline ■ Corrective actions ■ Predictive maintenance

Introduction

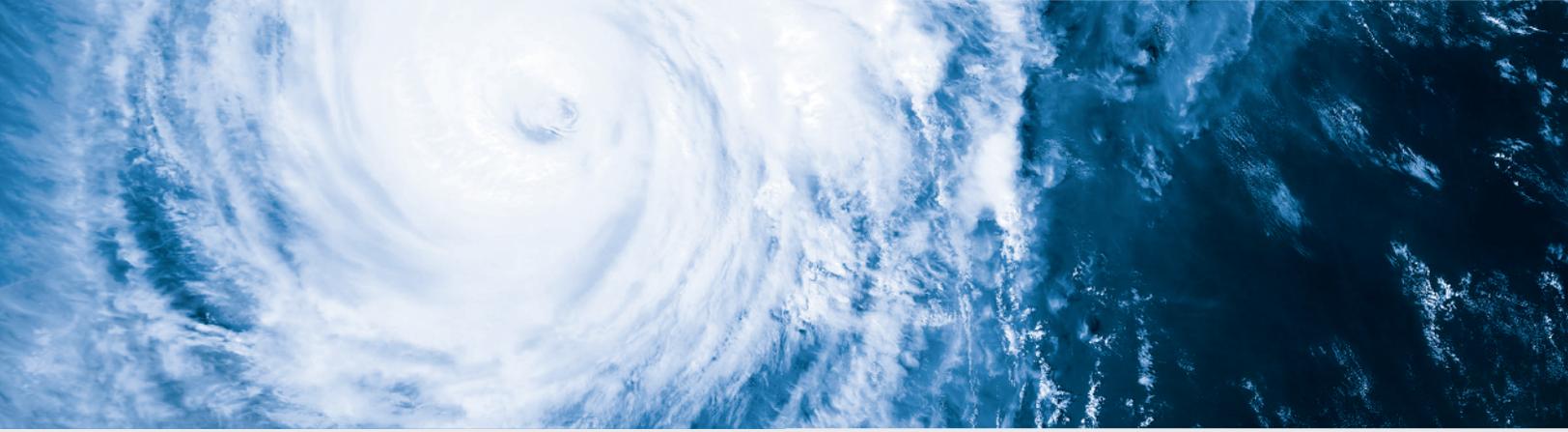
If data is collected from a repeating process, conducting predictive maintenance is achievable. Gapit Nordics' footprint module makes it possible to do predictive maintenance and get a warning before equipment starts to fail.

Closer look

Every time a particular repeatable event starts, the module records a certain parameter. As an example, think of a generator start event. An indicator of a machine in trouble would be a deviation in oil pressure. Even if an alarming level is not reached, the machine might start to have an oil pressure outside the normal run levels. After several records, the footprint module will make a baseline for the oil pressure. Next time the generator starts, the oil pressure is outside some certain percentile of the baseline can trigger a warning. Such functionality allows having warnings on abnormal conditions, resulting in operators' performing corrective actions.

Repeating process

Any predictable or repeating process can be used as a footprint. Temperature rise with power increase is another example where footprint alarming could be used. Say every time a load turns on, the temperature increase is supposed to rise in a certain way. This increase can be used to create a temperature baseline. As soon as the temperature is below or above the baseline, a warning can be emitted.



Gapit-weather

■ Environmental factors ■ Forecasting ■ Early warning

* Requires that the installation has network access to Gapit web API.

Introduction

Weather data is an essential factor for your facility. It always impacts all parts of your technical plant. When analyzing your plant and looking for abnormalities, having exact information about the outside weather is vital to find the correct root cause. This is especially true when it comes to cooling and heating. An unusual rise in temperature with a stable outside temperature can be an early warning of an error condition. Weather information is collected for a three days forecast period. This is a valuable asset when making decisions affecting future operations.

Monitor your control system

Your control algorithms are set to keep a specific setpoint. By having weather in your monitoring system, you can verify that the control algorithms work as expected and regulate your process as fast as needed.

Secure API

To make integration of these data sources easy, Gapit Nordics has collected all of them into one API. This means you only have to open one port to Gapit Nordics' API to access all external data sources gathered by Gapit Nordics.

Accurate datasource

To make sure our customers are getting the best possible weather data, we use the Norwegian Meteorological Institute's services. Location accuracy is pinpointed by using geo-coordinates of your site.





Gapit-skypump

■ Data enrichment ■ Single API ■ Better troubleshooting

* Requires that the installation has network access to Gapit Nordics' web API.

Introduction

Lightning is often the reason for unexplainable power outages. When breakers trip for no logical explanation or equipment stops working without warning signs, a lightning strike could be the explanation. The Gapit-Skypump module stores the location of all lightning strikes around your facility in a 5 km radius. Having this stored historically gives vital information when doing root cause analysis of a plant failure.

If your operation involves showing customers that a lightning strike does not affect your system, getting a warning when the strike hits is just as important. The information can be plotted in the same dashboards as any other datapoint collected by Gapit Nordics. Combining lightning strikes with data from UPS's, generators, or grid analyzers gives a powerful new dimension into root cause analysis and troubleshooting.

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Event and alarms

- Easy integration
- User friendly
- Prevent alert flooding

Introduction

Having control of your events and alarms is crucial for your operation. Your operation team should be able to get a quick overview of all events and alarms in as short a time as possible. Gapit Nordics has an alarm module built around the Alerta software. Alerta works as a centralized point that collects all alarms and events directly from Gapit Nordics' microservices or from Grafana. It's perfect for large screens and control rooms.

During an event where power is lost, alert flooding can be a real issue. Being able to get a clear vision through all alarms and trusting alarms can be crucial. Gapit Nordics solves this with the Alerta tool combined with Grafana. All alarms can be displayed directly in Grafana to have a single view point.

Seamless integration

Gapit Nordics' microservices are made to integrate seamlessly with Alerta. This means that alarms that are generated in equipment are automatically uploaded to Alerta. There is no need for manual alert configuration as this is already taken care of by Gapit Nordics' standardized microservices.

Custom alarms

For more advanced troubleshooting, alerts can be configured in Grafana with advanced algorithms. Alerts are then sent to Alerta and displayed together with the ones coming directly from the microservices. For third-party support, Alerta has a built-in API that can be used for third-party integration.

Alarms can be sent as SMS/Email by using third-party services such as Twilio and SendGrid. Other API-based integrations are also possible.





System deployment

■ Flexible ■ Self hosted ■ Open source

Introduction

The Gapit Nordics platform can be completely self-hosted and installed on the customer's IT stack. All parts of the Gapit Nordics system are built as Docker containers. This gives great flexibility when it comes to deployment.

Container management clusters like Kubernetes are an excellent environment for deploying our containers - lifting data harvesting from old infrastructure components to modern IT scalable and fault-tolerant applications.

Open source

All components of the installation are built using open source technology. This gives the flexibility and freedom to use the software in the most efficient way for each customer. It also offers customers ownership of the solution. Instead of delivering a black box, our customers can take active involvement in the future development of the products. There is no vendor lock-in, and our customers benefit from the large communities with cutting-edge development.

Automation

Gapit Nordics has automated the system deployment using Saltstack. We provide configuration for our deployment and are fully transparent. This greatly removes the possibilities for human errors and gives the IT departments an in-depth view of our stack. Not only the system, but also the data collection is automated. We can automate project documentation, which cuts down commissioning time from weeks and months to days.





Real time visualization

- Tailor made
- Endless possibilities
- Embedded live data

Introduction

We are utilizing domain experts together with collected knowledge from our customers to visualize data using customized dashboards. The dashboards and menu will help you navigate sites and equipment without an in-depth understanding of specific areas or appliances.

We at Gapit Nordics take visualization seriously with our design team, developing visual guidelines built around already existing standards. Color coding, font size, and visual layout make operators spot irregularities as quickly as possible.

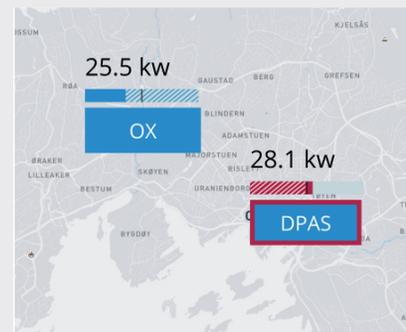
Top level view

Navigation should be intuitive and straightforward to use. Gapit Nordics' top level of navigation is a map. This is well known to all people and gives a quick overview of your sites or operations. Key metrics are also added as an overlay to provide users a brief overview of their entire process. From the top-level map view, one can easily navigate down to get detailed information about a specific site.



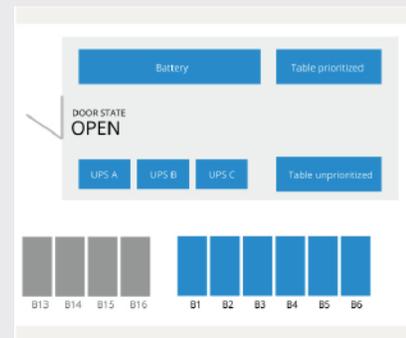
Site overview

After navigating from the top view to your site, this view gives a clear overview of different locations with key data overlay. Together with crucial information, alarm statuses can also be displayed, providing vital information about each site.



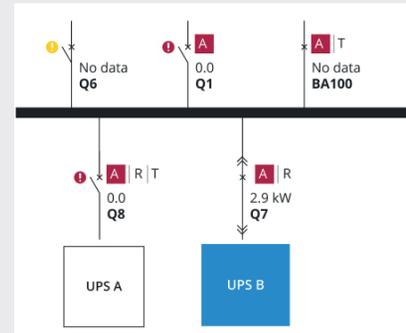
Floorplan

In some applications, the easiest way of navigating is by using a floorplan. The floorplan can be used as a superficial navigation layer where one can navigate the different rooms to see a drill-down view of the equipment in that room. More advanced floorplans can be made to show information directly in the floorplan, such as energy per square meter.



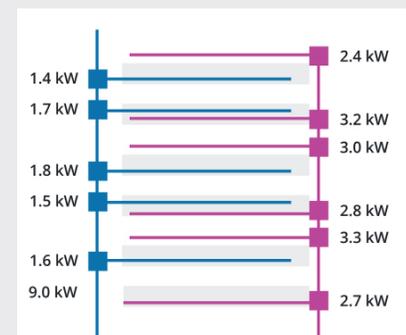
Single line diagram

Single Line Diagrams (SLD) is a way to display how the electrical infrastructure is wired. Gapit Nordics can deliver dynamic SLDs - technicians can now view the standard SLD documentation they are used to, but with the live status of electrical equipment. Breaker positions and critical information are displayed directly in the dashboard.



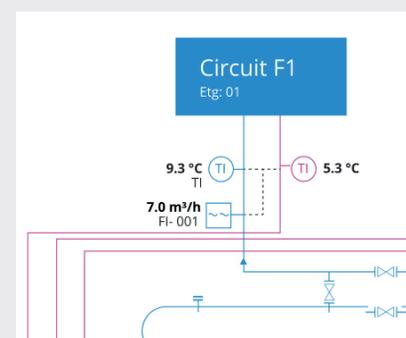
Data hall

Gapit Nordics' data hall view gives a complete layout of your data hall with all racks visualized. A and B power supplies are shown in predefined colors overlaid with data. This gives you live data of how much power is drawn to each rack. It also works as a navigation layer, and clicking a rack can give you a drill-down view of all data available in that specific rack.



Piping and instrumentation diagram

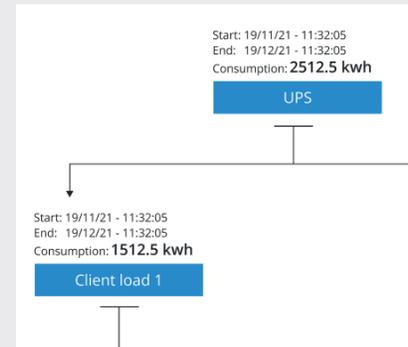
Your process diagrams can be visualized with Gapit Nordics - providing a human-machine interface. Everything from pipes to valves and other advanced equipment can be displayed. Everything shows real-time statuses dynamically to help the operator get the best possible situational awareness of the process.



Energy

Uses active energy to perform energy calculations

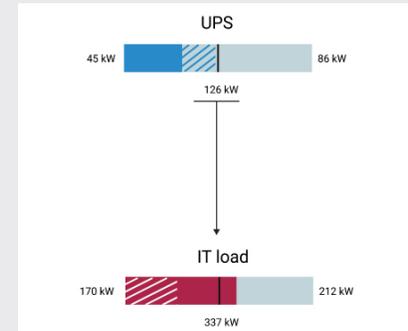
- Simple topology showing you how energy is distributed in your facility
- A simple overview of energy usage in a user-defined period
- Make sure you are charging your customers with the right amount of energy compared to your building income



Capacity

Used active power to perform capacity calculations.

- Available UPS capacity
- Total IT load capacity in data centers
- How much capacity is left before you are reaching the circuit breaker capacity





Simulated load distribution

■ Avoid power loss ■ Plan upgrades ■ Distribute power on phases

Introduction

The electrical infrastructure is built with an aim to be redundant and secure uptime when strings fall out. A component is being powered through one string, with one or more strings as a backup. These backup strings/power sources are meant to take over when the primary string/power source shuts down, providing redundancy to the infrastructure. However, in periods with higher load demands, the capacity of these backup strings/power sources may be too low, causing the facility and production to halt, forcing the company into downtime.

Utilize Behaviour Over Time

With Gapit Nordics' simulated load distribution, historical behavior is combined with interactive simulation options, giving the end-user tools to ensure uptime in the facilities' critical phases. Simulate the loss of a string, see how the backup strings/power sources perform in periods of high power demand, and if the redundant infrastructure is appropriately set up. Recognize periods of lower power demand, and plan maintenance and upgrades when the probability of failure is minimized.

Gain And Utilize Knowledge

The data can also be used to plan upcoming facilities and aid in setting up the optimized redundant electrical infrastructure desired.





Customer Service Level Agreement

■ Real time calculations ■ Historical trending ■ Dynamic

* **Requires integrations to relevant tap-off measurements**

Introduction

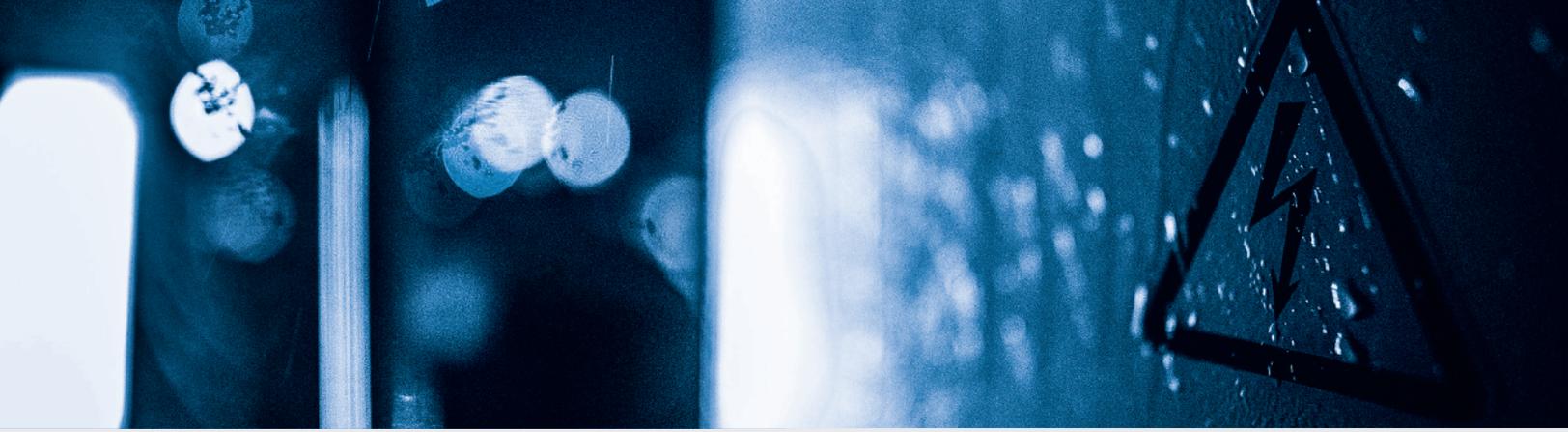
Through tight cooperation with our data center customers, Gapit Nordics has developed a customer SLA module. The module is tailor-made to give an overview of power and energy a customer has used within a specific period. Calculations are done in real-time and are a perfect attachment to your invoices. The module also supports temperature and humidity when your customer's contract demands it.

Customer SLA

The module, in addition, calculates vital information for your technical resources. Rack phase distribution helps to balance your load and makes sure you maximize your available power. Having historic trending helps estimate when your customers will reach their contract and need to buy additional capacity.

Combining power consumption from all customers will give your sales management a tool to see how much more contracts can be added before your site reaches maximum capacity.





PDF report – Power Usage Effectiveness

■ Flexible ■ Cost effective ■ Tailor made design

* **Requires basic Gapit products**

Introduction

Summarize your system's performance with Gapit Nordics' report module. We've built the report module from the bottom up to provide as much flexibility as possible. This means that the customer can have their look and feel on the report templates. Gapit Nordics has made templates for some of the most used functions to make report generation faster, such as customer service level agreements. When you provide a service, you can now attach a report giving proof of you keeping within the agreed service level. Choose from all collected data points to create an ideal historical review of what's happening behind the scenes of your system. Reports can also include advised actions to prevent unwanted events or optimization of daily operation.

Automatic report triggering

Reports can be triggered if a specific event is fired in your system. If an unwanted event such as a generator starts, a report can be generated to help with the investigation and documentation. It can be triggered at certain time intervals, like once every month.

PUE

Gapit Nordics' PUE report module consists of a standardized PDF report showing last month's PUE. It gives you a trend combined with max and min values. It can be used internally for documentation and management purposes or as proof for your customers to how efficient your operation is.



PDF report – Customer SLA

■ Collected data points ■ Historical review ■ Provide documentation

* **Requires the customer SLA module**

Introduction

Summarize your system's performance with Gapit Nordics' report module. We've built the report module from the bottom up to provide as much flexibility as possible. This means that the customer can customize the report to a certain degree.

Gapit Nordics has made templates for some of the most used functions to make report generation faster, such as customer service level agreements. When you provide a service, you can now attach a report giving proof of you keeping within the agreed service level.

Choose from all collected data points to create an ideal historical review of what's happening behind the scenes of your system. Reports can also include advised actions to prevent unwanted events or optimization of daily operation.

Automatic report triggering

Reports can be triggered if a specific event is fired in your system. If an unwanted event such as a generator starts, a report can be generated to help with the investigation and provide documentation. It can be triggered at certain time intervals, such as once every month.

Output

The Customer SLA report gives a key output from Gapit Nordics' customer module. This report can be used as an attachment to invoices sent to customers. As a basis the rendered reports are stored in a local folder on the server. If reports are to be sent on email or stored in remote folders the server has to be configured.





Service Agreement

■ Reliable ■ New features ■ Up to date security

Introduction

All Gapit Nordics' enterprise servers are delivered with a service agreement.

We want to make sure our users are getting the user experience they deserve. Having this agreement in place allows us to upgrade the system as new features or security patches are released.

The agreement sets the basis for rates and product prices, thus simplifying adding more products as we go. Our customers get a contact point to get support and Gapit Nordics dedicated resources to help.

Key points

Full service report of the installed system twice per year

Usually during spring and autumn. System capacity, security patching, and new features will be added after agreement with the customer. After each visit, a meeting will be held to go through the report's findings and plan further improvements. For conditions, see frame agreement.

Backup of configuration files

This ensures a quick new deployment, should the system malfunction or need rebuilding. See frame agreement for details.

Defined service level agreement

Ensures support within 1 business day on normal business days. See frame agreement for details.



Benefits

All the data gathered in one tool

Run the solution on your network on dedicated steel, in your virtual environment or in the Gapit Nordics cloud. Data from multiple sources is collected and presented in one tool and is owned by the end-user.

High quality data

The data is delivered with minimal latency and maximum quality. Combined with precise timestamping and a collection of historical data – a good foundation for analyzation and visualization is established.

Fast and simple integration

The service is manufacturer-independent and can be integrated with all measuring instruments. The time spent on installation is kept to a minimum and the system is quickly in operation.

Security

The Gapit Nordics system supports the latest cryptographic security standards and user based access control, and can run on closed software networks for optimal security.





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