



Activity

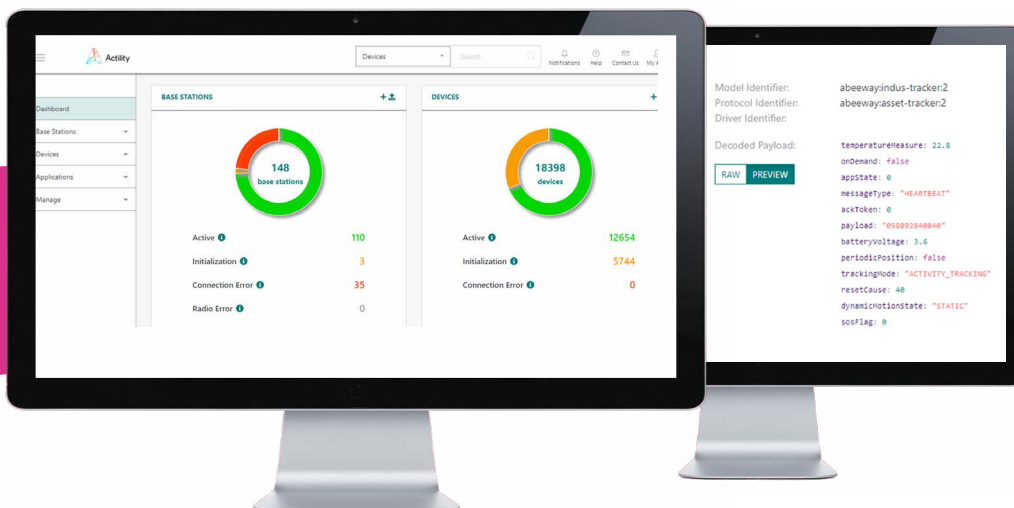
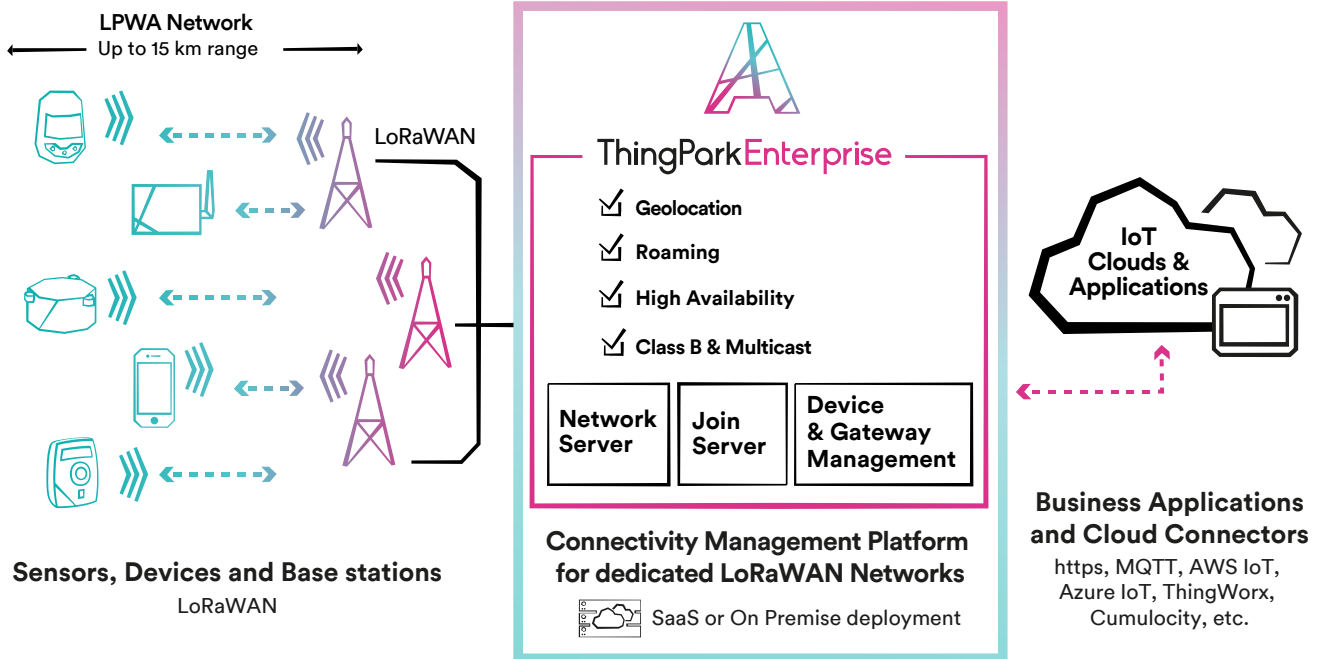
ThingParkEnterprise

ThingPark Enterprise is the most powerful and advanced Internet of Things connectivity platform to implement IoT use cases on your Low Power Wide Area roll outs.

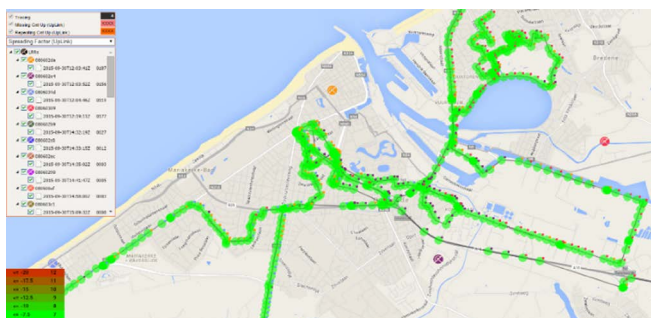
Dedicated to enterprise networks, ThingPark Enterprise streamlines your digital transformation, eliminating wiring of sensors, enabling indoor/outdoor tracking and many other use cases to optimize your activities. With 10+ years field experience worldwide, we support integration of remote sites for **all regional regulations and offer the widest device interoperability.**

Designed to make IoT projects secure, fast, simple, flexible and cost effective

ThingPark Enterprise offers **hardware-independent gateway management** with a complete set of O&M features, and **ready-to-use connectors** to all leading IoT back-end platforms. The user-friendly interface provides wizards to build a multi-gateway LoRaWAN® network and feed data to IoT applications, with **real-time monitoring** of your IoT network. You easily monitor device/application traffic flow through the display of decoded payloads and monitor your deployment status, traffic and device statistics.

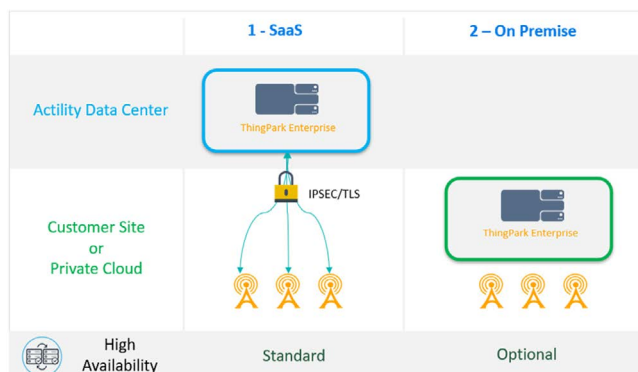


Our unique Network Survey application will ensure your network structure is optimized in every way, to get the best value out of your investment.



ThingPark Enterprise provides seamless interoperability among Smart Things, respecting and aligning with the market's norms, and is future-ready for this rapidly evolving technology.

Choose between our flexible deployment options to either leverage our regional ThingPark Enterprise SaaS platforms (Europe, USA, APAC/Australia, Russia...) or opt for local deployment on-premises (TPE-OCP).



ThingPark Enterprise (TPE) is tailored to the enterprise needs:

| | |
|--------------------------|---|
| Low touch | <ul style="list-style-type: none"> • Setup of an IoT use case in just a few clicks. • Simple installation process using Docker containers. • Dashboards provide key operational insights & alarm management. |
| Flexible | <ul style="list-style-type: none"> • Several deployment models: SaaS, private Cloud and On-premises (OCP). • Open/Multi-vendor solution, integrating with most Gateway vendors and all LoRaWAN devices. • Global solution supporting all regional ISM bands - any use case, anywhere. |
| Easy to integrate | <ul style="list-style-type: none"> • Built-in Cloud connectors for easy integration with popular IoT cloud services such as AWS, Azure, Watson, ThingWorx, MQTT and more... • Built-in device drivers for sensor's payload decoding. • REST APIs expose all network & device management functionalities for integration with third-party supervision dashboards. |
| Future proof | <ul style="list-style-type: none"> • Fully integrated device-agnostic Network-based geolocation solution, delivering low battery consumption tracking by leveraging sophisticated triangulation techniques. • Roaming with public LoRaWAN networks via peering hub to allow seamless service continuity across campuses, organizations and networks. • Multicast functionality, offering FUOTA services. |

ThingPark Enterprise (TPE) delivers a carrier-grade solution:

| | |
|----------------------------------|--|
| Reliable | <ul style="list-style-type: none"> • Dependable industrial infrastructure, leveraging the technology trusted by leading service providers worldwide. • Geo-redundant, high availability platform offering full disaster recovery and data replication. • Packet buffering on the gateway side when backhaul connection is down, avoiding data loss with graceful streaming of buffered traffic upon backhaul link recovery. |
| Secure | <ul style="list-style-type: none"> • End-to-End infrastructure security, trusted by major telecommunication operators. • VPN tunneling (IPsec or TLS) between the gateway and the core network, combined with secure TLS communication between core network and Application Servers. • Secure Key Management, use of AES-128 cryptography. • Integration with ThingPark Activation for easy, secure and large-scale device activation. |
| Scalable | <ul style="list-style-type: none"> • Upscale your network as needed. Start off with a single use case and expand several vertical solutions and thousands of devices. |
| State-of-the-art solution | <ul style="list-style-type: none"> • Actility is the world leader in IoT infrastructure, with 50+ service provider networks and thousands of operational enterprise networks. • Carrier-grade support and maintenance including 24/7 monitoring of the SaaS platform. • ISO9001 QA certified, covering the development and testing processes (1,000+ tests and 4 weeks of field testing). • Actility, as a founding member of the LoRa Alliance, is strongly committed to implement the latest evolution of the specifications as soon as possible after their official publication. |

Features:

ThingPark Enterprise is Actility's LPWAN solution implementing the LoRaWAN standards, delivering:

- Secure bi-directional communications
- Best in class device battery life optimization, leveraging field-proven self-organizing Adaptive Data Rate (ADR) algorithms
- Multi-vendor LoRaWAN gateway support: Cisco, Ufinspace, Kerlink, Multitech, Tektelic, Gemtek, Cloudgate...
- Carrier-grade Base Station management system with advanced O&M features (network interface failover, remote network configuration, packet buffering...)
- Embedded Join Server
- Supports all LoRaWAN versions and all regional profiles (EU-868, US-915, AS-923, AU-915, RU-864, IN-865, KR-920, CN-470, EU433, CN-779...)
- LoRaWAN 1.0.x and LoRaWAN 1.1 standards
- Supports class A, B and C devices
- Both OTA and ABP modes of LoRaWAN provisioning
- Seamless integration with AWS cloud applications (AWS Cloud Formation Templates)
- Easy troubleshooting through embedded Wireless packet Logger and Spectrum Analysis applications
- Ready to use device/base station/regional RF profile catalogues
- Packet deduplication
- Duty cycle optimization for base station downlink transmission
- Email alerts and notifications
- User permission management

Plan your ThingPark Enterprise On-Customer-Premise (OCP) Hardware Sizing

| | Extra-Small (XS) | Small (S) | Medium (M) | Large (L) | Extra-Large (XL) | Double-Extra-Large (XXL) | |
|---|--|------------------------|-------------------------|-------------------------|-------------------------|--------------------------|---------|
| Base stations (gateways) | Up to 5 | Up to 10 | Up to 50 | Up to 100 | Up to 200 | Up to 1000 | |
| Devices (sensors) | Up to 1000 | Up to 2 000 | Up to 10 000 | Up to 20 000 | Up to 50 000 | Up to 300 000 | |
| Average Traffic Rate (uplink + downlink) | 0.3 pkt/sec | 0.6 pkt/sec | 3 pkts/sec | 6 pkts/sec | 15 pkts/sec | 90 pkts/sec | |
| Peak Traffic Rate ⁽¹⁾ | 1.5 pkts/sec | 3 pkts/sec | 15 pkts/sec | 30 pkts/sec | 60 pkts/sec | 180 pkts/sec | |
| Hardware Sizing Requirements | Minimum CPU score ⁽²⁾ | 9 700 | 22 000 | 66 000 | 136 000 | 272 000 | 450 000 |
| | Minimum CPU mark (indicative) ⁽³⁾ | 1 776 | 2 760 | 6 280 | 11 880 | 22 760 | 37 000 |
| | RAM (GB) | 5.5 | 15 | 22 | 29 | 60 | 300 |
| | Disk OPS (write/s) | 100 | 100 | 300 | 600 | 1200 | 6000 |
| | Storage size (BG) ⁽⁴⁾ | 70 | 90 | 120 | 160 | 220 | 1 000 |
| Example of AWS EC2 sizing category | m5.large + gp2 volume | m5.xlarge + gp2 volume | m5.2xlarge + gp2 volume | m5.4xlarge + gp2 volume | m5.8xlarge + gp2 volume | m5.24xlarge + io1 volume | |

(1) Peak load (uplink + downlink packets/sec) cannot be sustained over more than 1 minute.

(2) CPU score can be assessed through ThingPark HW benchmark script, included in TPE-OCP image distribution.

(3) Indicative CPU mark refers to the PassMark "Average CPU Mark" referenced by <https://www.cpubenchmark.net/>. This value is given as an indication to the range of CPU models required on standalone appliance for each platform sizing segment, the definite CPU sizing must be validated against ThingPark's min CPU score assessed through the HW benchmark script.

(4) Refers to available storage space. For instance, if RAID1 is used for a Small Segment, the platform must have two disks of 90GB each.

Note: For TPE-OCP High Availability, 3 identical servers having the sizing requirements described above are needed.

About Actility : Actility is a world leader of industrial-grade Low-Power Wide Area Networks (LPWAN) for the Internet of Things. Over 50 public network services providers and thousands of enterprises trust the ThingPark Wireless platform all over the world. Actility also provides patented ultra-low power geolocation technologies through its subsidiary Abeeway. The ThingPark platform, ISO 9001 certified and demonstrating 10+ years of field experience in all regions of the world, is the dependable engine behind many innovations which improve the way we grow crops or livestock and enhance safety and productivity of many industries, contributing to a more sustainable economy. [ThingPark Market](#) provides the largest selection of interoperable gateways, devices and apps.

Actility

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