BEWATEC.**ConnectedCare**

BEWATEC®
Communications
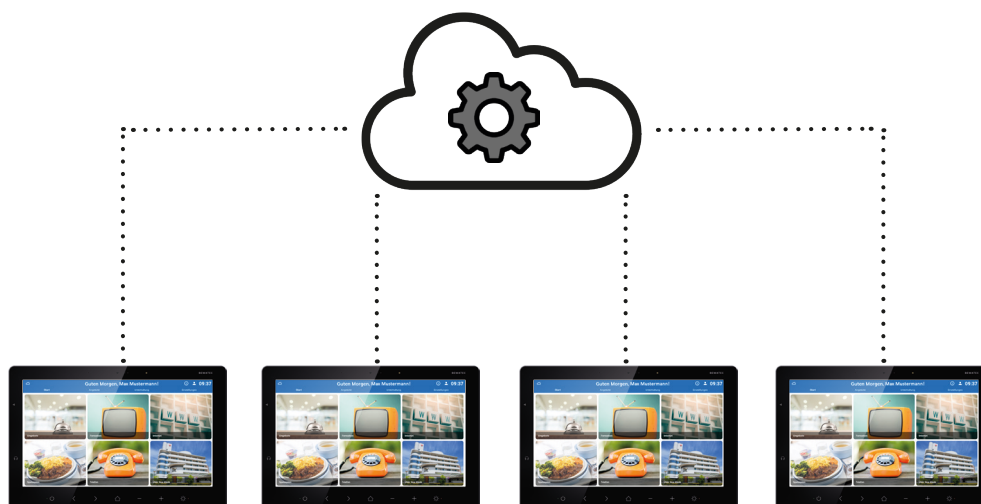
BEWATEC.DeviceManagement
The smart administration tool for your BEWATEC devices.

With the BEWATEC.DeviceManagement, hospitals have a centralised system at their disposal with which all BEWATEC devices can be managed easily and efficiently. From a detailed status overview in the form of a dashboard to the targeted rollout of updates to predefined groups of locations and the integration of third-party apps: BEWATEC.DeviceManagement offers full control and at the same time technological flexibility for hospitals of all sizes. Thanks to in-house developed software made in Germany, hospitals also benefit from the extremely high safety and quality standards of the system.

For Sales and Support please contact your local BEWATEC partner

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Better Ideas. Better Communication.

BEWATEC.DeviceManagement

BENEFIT

· Full modularity and scalability of the system
· In-house developed software made in Germany guarantees highest security standards
· Easy integration of third-party suppliers thanks to flexible interfaces
· All information about the devices, release status and much more at a glance
· Increased efficiency in the management of BEWATEC tablets
· The administration of the devices is significantly simplified – even with a heterogeneous device pool
· Turnkey service without administration effort
· Simple and fast remote administration of BEWATEC tablets: From configuration and updates to installing, removing and managing apps on the devices
· More efficient communication through push messages
· Modern and user-friendly look & feel

SCOPE OF SERVICES

1. General performance characteristics

Asset Management

· Multi-client capable user administration with Single-Sign-On
· Detailed status overview in the form of a dashboard
· Various filter and sorting functions
· Definition of Device Profiles and Device Groups
· Definition of Location Groups (via LLDP / CDP / OneWire)
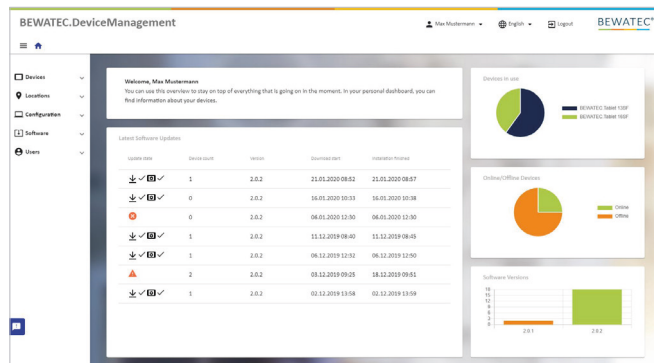
Updates

· Automated scheduling of updates
· Update of the operating system BEWATEC.OS
· Updating the various applications
· Monitoring of the update process

2. Configuration options

General configuration

· Configuration of the operating system BEWATEC.OS
· Configuration of various applications
· Configuration adjustments can be made on all devices with just one click in real time and without restart
· Creation of Device Profiles, Patient Profiles, Device Groups or Location Groups
· Definition of a device- or location-based configuration

Device Profiles

· Setting the basic configuration parameters of BEWATEC.OS
· Configuration of various applications (e.g. TV / Radio) and third-party apps
· Basis for configuration, before patient-specific settings are made if necessary (Patient Profiles)
· Device Profiles can be linked to Device Groups or Location Groups.

Device Groups

· Classification of the existing BEWATEC tablets into desired Device Groups (e.g. into the device group „test devices")

Location Groups

· Simplification of the configuration by structuring the locations into Location Groups
· Creation of Location Groups based on site-specific characteristics such as building, department, room, bed
· Optional parameters: SIP User / SIP Password
· Possible location data sources: LLDP / CDP / One Wire
· A configuration (device profile) can be permanently linked to the location (independent of the serial number of the tablet)

Patient Profiles

· Dynamic adjustment of the configuration of BEWATEC.OS depending on the characteristics of the patient (e.g. age or gender)
· Patient Profiles can be linked to Device Profiles

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3. Technologies and frameworks

Backend: Microservices
- Spring Boot 2
- State of the Art APIs: REST / MQTT / WebSockets

Frontend: Responsive web
- Angular, Material Design
- HTML5 / CSS3, TypeScript

Deployment: AWS Infrastructure
- Amazon Web Services: EC2 / ALB / RDS
- Infrastructure As Code
- ContainerizedServices
- SSO mit OpenID / OAuth2

Development process: Continuous integration / design
- Automated tests
- Reproducible builds
- Automated deployment, including staging environment

4. Interfaces and communication protocols

REST (Representational State Transfer)
- Transfer of the configuration data
- Communication based on HTTPS (SSL / TLS)
- Client authentication by means of token: Keycloak as Single-Sign-On (SSO) system
- Encoding of the data in the form of JSON (Javascript Object Notation)

MQTT (Message Queuing Telemetry Transport)
- Communication of events such as control break, updating of configuration profiles
- Transmission of the online status (asset overview)
- Encrypted connection for secure communication (MQTTS / TLS)
- Push protocol for IoT applications
- Efficiency and scalability
- Topic-based (Publish / Subscribe), event-based triggers
- Developed by IBM

5. System architecture
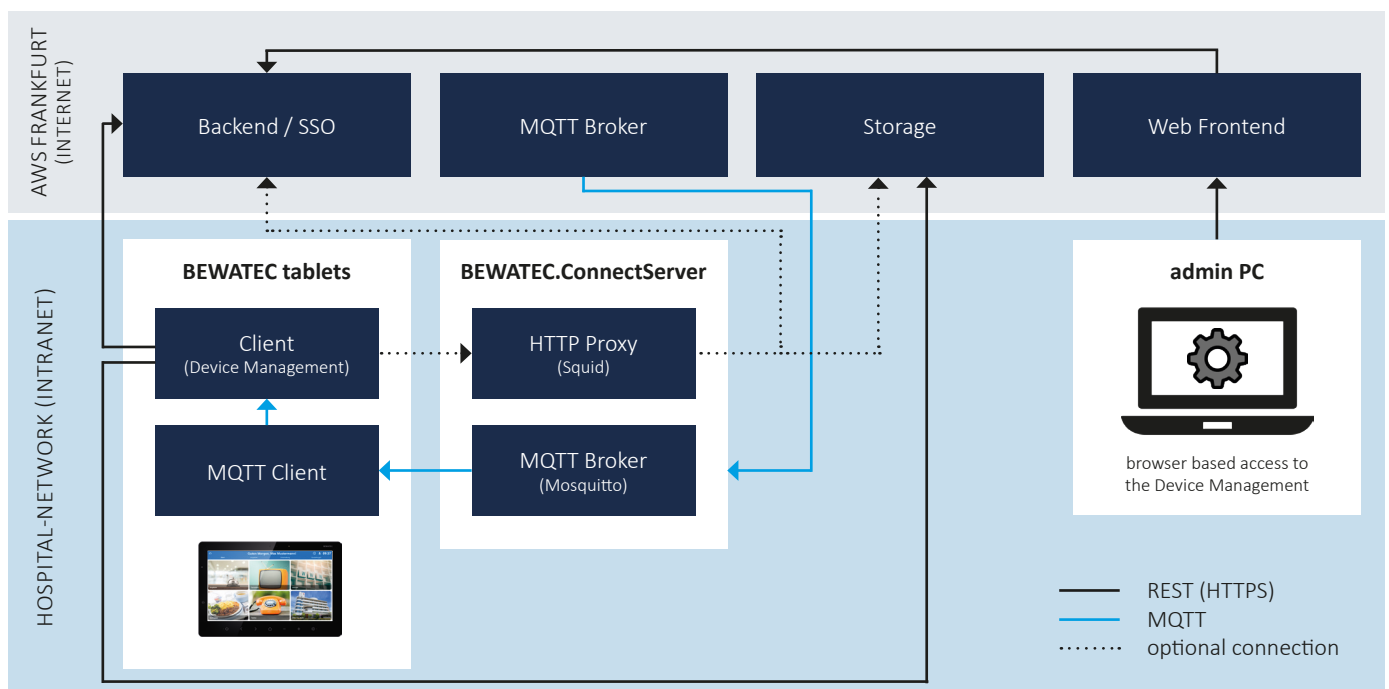
REQUIREMENTS

- Extension of the modules on the BEWATEC.ConnectServer: MQTT Broker mosquitto
- Firewall permissions:

Host source	Port source	Target host		Target port	Protocol
BEWATEC tablet	any	api.bewatec.io		443	TCP
admin PC	any	dm.bewatec.io		443	TCP
admin PC	any	sso.bewatec.io		443	TCP
BEWATEC tablet	any	sso.bewatec.io		443	TCP
BEWATEC.ConnectServer	any	mqtt.bewatec.io		8883	TCP
BEWATEC tablet	any	bewatec-mcs (BEWATEC.ConnectServer)	Connection via DNS names bewatec-mcs	8883	TCP
			or connection via local IP	1883	TCP
BEWATEC tablet	any	bewatec-update.s3.eu-central-1.amazonaws.com		443	TCP
BEWATEC tablet	any	bewatec-update.s3.eu-central-1.amazonaws.com		80	TCP