netFIELD OPERATING SYSTEM

THE HEART OF CENTRAL OR DECENTRAL MANAGED IIOT DEVICES
THE SECURE OPERATING SYSTEM FOR AN INTELLIGENT EDGE

Hilscher netFIELD OS is a lean and secure operating system that makes it easy to program, deploy, connect edge devices. Hilscher netFIELD OS extends the Linux kernel with software libraries to securely connect operation technology like PLC, MES, Historians, Files or other on-premise systems with IT services like the netFIELD Cloud. Our netFIELD OS lets you innovate faster embracing container technologies managed by the netFIELD Cloud platform point or locally at the edge.

netFIELD OS DATACENTER

While netFIELD OS is used to run natively on a hardware device, netFIELD OS Datacenter is running in a virtualization environment. Since the software architecture of netFIELD OS is the same, the user will not recognize, whether OS and the Device Manager is running natively on a hardware device or virtualized as a guest on a hypervisor.

TYPICAL SCENARIOS FOR netFIELD OS DATACENTER

In a distributed scenario with multiple machines and/or locations a central instance of the netFIELD OS should be the interface to the netFIELD Cloud.

ADVANTAGES

- Hardware resources of the Host system can be shared with guest systems as required
  - CPU cores
  - RAM
  - Network Interfaces
  - Persistent Storage
- High Availability / Reliability Strategies
- Hardware independence of guest applications (netFIELD OS)
- Access to remote storage systems via NFS or iSCSI including RAID n redundancy
- Contribution to Green IT

In this case a central running netFIELD App Platform Connector or another cloud connector (to connect Azure, AWS, or Google) may be the interface between between the enterprise network of the customer and one or more cloud providers.

The MQTT Broker can also run in this virtualized environment to receive aggregated or raw data from distributed edge devices on the machine sites.

The performance is scalable and depends from the number of datapoints as well as from the customer requirements in which time periods the data should be proceeded.

Additionally a database can store, aggregate and forward the received data as required to an IT System, the netFIELD Cloud platform or to another preferred cloud provider.

A local dashboard (e.g. provided by Node-RED) may offer an overview about the machine park condition.

For example the Advanced Vector Extensions are required for an Application Container using KI (e.g. Tensorflow).

In this case the virtual edge appliance can be used without additional effort for testing.
## netFIELD OS CHARACTERISTICS

<table>
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<tr>
<th>Item</th>
<th>Description</th>
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<tr>
<td><strong>Docker Technology</strong></td>
<td>netFIELD OS based edge devices can run every application build on the Docker technology.</td>
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<tr>
<td><strong>Application Deployment</strong></td>
<td>Applications can be served centrally by using the netFIELD Cloud or locally by using any accessible Docker Registry.</td>
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<td><strong>netFIELD OS Datacenter</strong></td>
<td>The scalable virtual edge appliance is running as a guest OS in VMware or KVM host environments.</td>
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<td><strong>Firmware Update</strong></td>
<td>The netFIELD OS can be updated for functional or security reasons locally or remote by using the netFIELD Cloud.</td>
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<td><strong>netFIELD Extension</strong></td>
<td>Every device running a Debian or Ubuntu OS can be extended with the required services to connect to netFIELD Cloud for application deployment and remote access.</td>
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<td><strong>Internet Connectivity</strong></td>
<td>Internet proxies in enterprise networks can be a hurdle to connect devices to the internet. The netFIELD OS is supporting proxy settings for such LAN infrastructures. The proxy configuration covers the connectivity of the operating system, the Docker framework and application containers with the internet.</td>
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<tr>
<td><strong>OT Network Protection</strong></td>
<td>Edge devices with netFIELD OS can protect the OT network using the integrated firewall. This allows IT and OT networks to be isolated, e.g. using the NAT functionality.</td>
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<td><strong>WiFi Connectivity</strong></td>
<td>netFIELD Edge devices with WiFi support can be connected to Enterprise and Personal WPA protected networks.</td>
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<td><strong>Application Container UI Plugins</strong></td>
<td>Custom application containers can add a user friendly UI to the local Device Manager for setting up the application container.</td>
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**HEADQUARTERS**

Germany  
Hilscher Gesellschaft für Systemautomation mbH  
Rheinstraße 15  
65795 Hattersheim (Frankfurt)

**SOCIAL MEDIA**

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