Industrie 4.0 Starter Pack

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Industrie 4.0

Outthink Complexity with Industrie 4.0

Industrie 4.0 StarterPack

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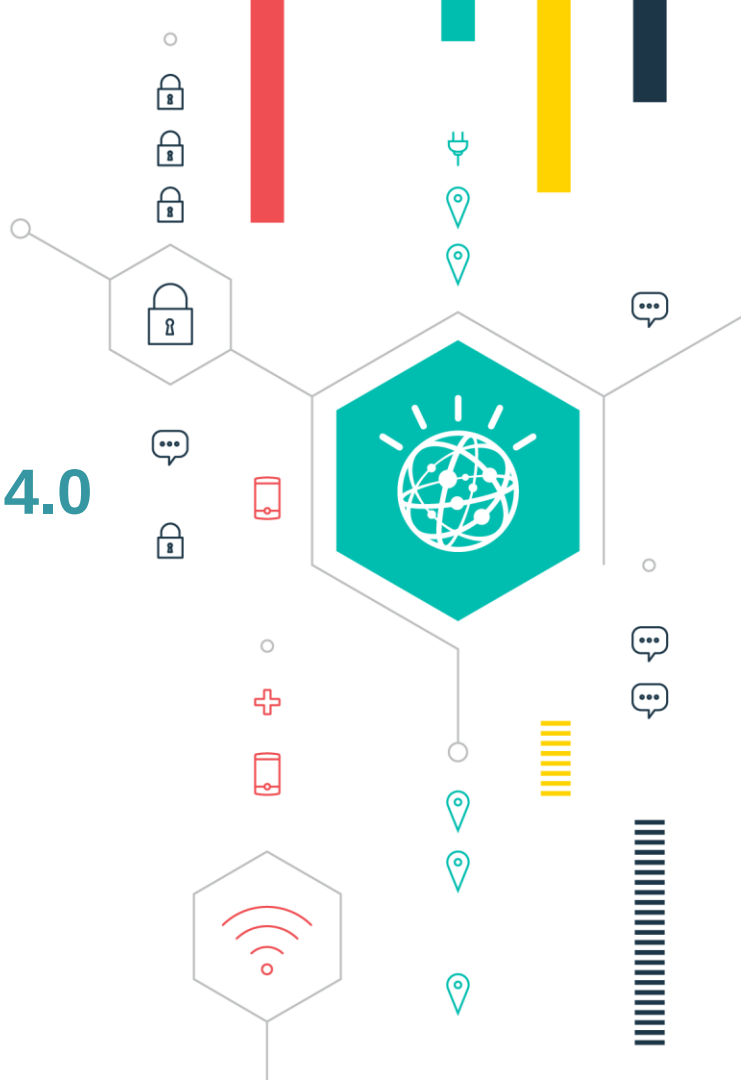
IBM



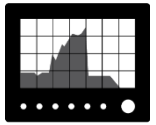
Typical Challenges in the production environment...

Separate Systems in Production

- **Different proprietary** protocols and data formats
- **Lack of communication** between machines, shopfloor and IT systems
- **Monolithic** inflexible systems (no modularity)

Data as raw material and information as gold

- Enormous **amount of data** created
  - **Decentralized** data storage, **overwritten** before used
  - Lack of **consistent data models and a holistic view**
- Differentiation between **gold and waste** in data



Lack of insights

- **Insufficient insights** concerning ideal setting of parameter in order to optimize machines and product quality

Increasing threat of Cyber-Hacks

- Increasing connectivity in production = more **potential targets** of attacks
- Security risk through to **safety risk** for human life
- **Loss of reputation** and trust

What would it be like if you could take advantage of…

Connectivity as enabler for data collection.

Vertical Integration in Production

- **Bidirectional communication** between machines, shopfloor and IT-systems
  Gain data out of your machine →
  Change parameter within your machine ←
- **Modularity** and **Flexibility**

Transparency of your company gold.

Collection of Production Data

- **Space-saving** and performant data collection
- Consolidated **data at factory level** and beyond

Turning Data into Insights. Insights into Actions.

Analysis of Production Data

- **Real-time** analysis
- Analysis of production parameter
- **Predict** failure patterns (predictive maintenance)

Maximize OEE: Availability ↑ *Scrap rate* ↓ *Optimized production speed* ↑

Close your Security gap. Connected Devices = Target of Hackers.

Industrial Security

- Secured network **transition from Office-IT to Shopfloor-IT**
- **Industrial security** from machine, to shopfloor, IT floor, even Internet
- **Detective** and **forensic** analysis of anomalies

IBM Industrie 4.0 StarterPack as fast and pragmatic approach for your first Industrie 4.0 Experiment

StarterPack 4.0 = Proved Software

➢Including **Self-Study** for fast start in your own project

Early- Bird - Promotion

The first **20 StarterPack User** receive a discovery workshop worth **5.000 €** for free

For Vertical Integration

Efficient Collection of historical data

Predictive Analytics

Security Intelligence in one solution

IBM Integration Bus

▪*Integration of **dozens** standard- , application-specific-, and shopfloor -protocols such as **OPC, OPC UA, OSIsoft PI, MQTT***
▪*Based on Service-orientated Architecture **(SOA)***

IBM Informix TS

▪***SQL-based Data Historian:** for efficient storage of **time series***
▪***Saving of disk** storage (60 %)*
▪*Higher **performance** (60K/s time series values)*

IBM SPSS Modeler

▪Intelligent algorithms and mathematical models used in **play mode**
▪**Productivity improvement** (e.g., 25 %)
▪**Scalable** towards Big Data

IBM Qradar SIEM

▪Centralized **Security Intelligence,** protection against advanced threats, network flow capture and analysis, sophisticated correlation of events, flows, assets, topologies, vulnerabilities, forensic

Content of the Industrie 4.0 Self-Study

Lab 1

MQTT: Set the prerequisite for the connectivity of the machines, sensors & IOT

- **Configure** the MQTT Service of WebSphere MQ. **Publish** and **subscribe** a Hello World message
- **Run** some MQ MQTT Client test and discover the options and run the **MQTT Java Script** client

Lab 2

IBM Integration Bus (IIB): Connect, transform & route a variety of transport protocols

- **Create, deploy** and **run** a simple **message flow** with IBM Integration Bus
- **Subscribe** and **publish** MQTT messages in the Integration Bus

Lab 3

IBM Integration Bus Manufacturing Pack: Invoke a message flow from OPC UA

- **Develop** an **IIB message flow using the OPC UA** node and get **values** from the **DA Server**
- Use the Manufacturing Pattern and **monitor** the flow

Lab 4

IBM IIB, Informix TS, SPSS Modeler: Start the Machine Data Insight Lab

- **Key Industrie 4.0 scenario** – **Collect** machine logs from different production modules into a **Data Historian** and apply **predictive analytics** in order to gain insight from this data

➡ **Self-Study as prerequisite for Discovery Workshop with IBM**

What are you waiting for?

Start your Industrie 4.0 experiment now

And what´s after your first Industrie 4.0 Pilot Project ?

Evaluation of your **individual** migration ways with IBM

- Focus on **Predictive Maintenance and Quality (PMQ)** http://www-05.ibm.com/de/pmq/
- **Scaling** of IBM Industrie 4.0 Starter Pack Solutions
- **Individual** constellation of IBM Solutions

Credit the StarterPack Fee on a follow-on IBM Solution.

How to get started….

Order Industrie 4.0 StarterPack

Get access to a Industrie 4.0 StarterPack test instance

First steps with Self-study

Discovery Workshop

Scale your Industrie 4.0 project

+ Only small budget needed

„Play & Adapt“ Approach

+ Involvement in Industrie 4.0 Strategy & Projects of the customer at an early stage

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Our three-step approach: maximum flexibility, control and advantage for the partners (focus on Discovery Workshop)