

An abstract graphic on the left side of the slide. It features a white silhouette of a person standing with arms outstretched. Several thick, curved lines in shades of blue, green, and white flow around the person, creating a sense of movement and connectivity.

Azure IoT aus der Praxis

Roland Krummenacher




Roland Krummenacher

- Software-Architekt bei der bbv Software Services
- Leiter der bbv Cloud Community
- Seit 8 Jahren Lead-Entwickler, Software-Architekt oder Berater in div. Cloud und IoT Projekten
- Seit 2014 Microsoft MVP für Azure







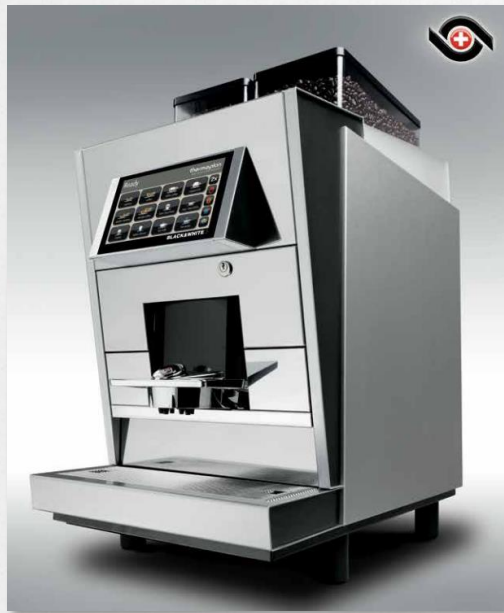
In der Schweiz produziert,
rund um den Globus geschätzt

Thermoplan produziert ausschliesslich in der Schweiz. Aus guten Grund, denn qualifizierte Mitarbeitende und moderne Produktionsstätten sind die Grundlage für Präzision, Zuverlässigkeit und höchste Qualität, wie sie die Partner von Thermoplan kennen und schätzen. Diese zentralen Werte pflegt das Unternehmen in jedem Bereich mit grossem Engagement und auf höchstem Niveau: Das Schweizer Kreuz auf jedem Thermoplan Produkt ist Verpflichtung und Ansporn zugleich.



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Produkte



Black&White 3



Black&White 4c

Asset-Management

Devices

Q Search for Serial, Errors, Service Threshold, Store, Street, City, Country

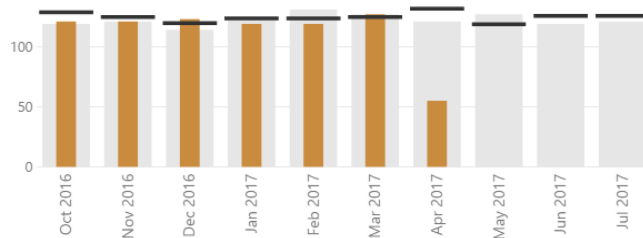
Serial	Milk Temp. Now	Offline Now	Cleaning Error Now	Errors Last 24h	Service Forecast	Service Threshold	Last Maintenance	Store	Street, Nr.	City	Country
43-0862-78	10 °C			2	11.12.17	6 M	18.09.16	THP Schweiz	Thermoplan-Platz 1	Weggis	Schweiz
43-0862-73	5 °C		07.05 00:00	0	05.04.18	30,000 L	29.05.16	THP Schweiz	Thermoplan-Platz 1	Weggis	Schweiz
43-0862-67	5 °C			0	16.05.18	12 M	13.02.16	THP Deutschland	Altriperstrasse 1	Hockenheim	Germany
43-0862-68	4 °C			0	05.10.17	40,000 P	10.08.16	THP Austria	Dorfstrasse 43	Lans	Austria
43-0862-69	5 °C			0	16.11.17	40,000 P	24.07.16	THP Schweiz	Thermoplan-Platz 1	Weggis	Schweiz
43-0862-70	4 °C			0	16.11.17	12 M	06.05.16	THP Schweiz	Thermoplan-Platz 1	Weggis	Schweiz
43-0862-71	5 °C			0	22.04.18	40,000 P	28.06.16	THP Schweiz	Thermoplan-Platz 1	Weggis	Schweiz
43-0862-66	4 °C			0	01.04.18	30,000 L	12.11.16	THP Deutschland	Altriperstrasse 1	Hockenheim	Germany
43-0862-65	4 °C			0	03.09.17	12 M	07.07.16	THP Deutschland	Altriperstrasse 1	Hockenheim	Germany
43-0862-74	4 °C			0	29.06.17	6 M	16.03.16	THP Schweiz	Thermoplan-Platz 1	Weggis	Schweiz
43-0862-75	4 °C			0	16.05.18	6 M	20.10.16	THP Schweiz	Thermoplan-Platz 1	Weggis	Schweiz
43-0862-76	4 °C			0	25.06.18	30,000 L	12.02.16	THP Schweiz	Thermoplan-Platz 1	Weggis	Schweiz
43-0862-77	5 °C			0	15.10.17	6 M	10.07.16	THP Schweiz	Thermoplan-Platz 1	Weggis	Schweiz
43-0862-72	5 °C			0	18.02.18	12 M	08.03.16	THP Schweiz	Thermoplan-Platz 1	Weggis	Schweiz

Service-Management

Machine Health

Customer	Milk Temp	Offline	Cleaning Error	Error
Cafe Lake View	6	2	6	1
Customer a	5	4	2	1
Customer b	7	2	5	2
Customer c	4	3	7	5
Customer d	4	3	5	4
Customer e	1	4	3	7
Customer f	7	3	7	2
Customer g	5	3	4	4
Customer h	4	4	4	7
Customer i	5	1	7	3
Customer j	2	3	2	4
Gesamt	50	32	52	40

Completed Services



- ☐ Oct 2016
- ☐ Nov 2016
- ☐ Dec 2016
- ☐ Jan 2017
- ☐ Feb 2017
- ☐ Mar 2017
- ☐ Apr 2017
- ☐ May 2017
- ☐ Jun 2017
- ☐ Jul 2017
- ☐ Aug 2017
- ☐ Sep 2017
- ☐ Oct 2017

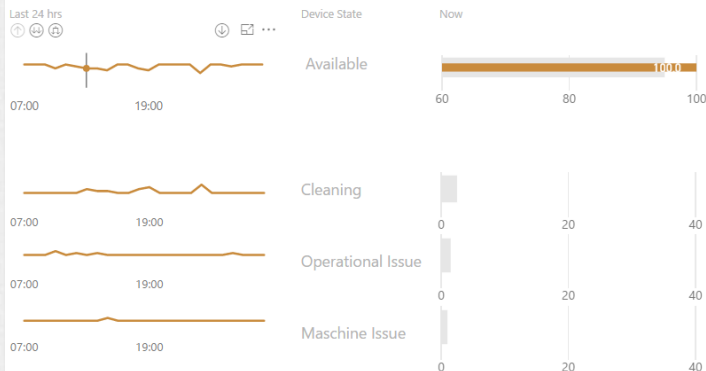
Upcoming Maintenance Tasks

Customer	Interval Counter Total Devices	Now		Filter Due		Period Due		Next Month		Filter Due		Period Due		Next three Months		Filter Due		Period Due	
		Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%
Cafe Lake View	260	1	0%	10	4%	15	6%	20	8%	20	8%	18	7%	5	2%	20	8%	23	9%
Customer a	50	18	36%	15	30%	11	22%	26	52%	15	30%	20	40%	1	2%	14	28%	19	38%
Customer b	30	13	43%	14	47%	7	23%	2	7%	17	57%	21	70%	27	90%	8	27%	19	63%
Customer c	30	14	47%	7	23%	8	27%	29	97%	18	60%	28	93%	10	33%	11	37%	9	30%
Customer d	30	9	30%	8	27%	9	30%	27	90%	29	97%	29	97%	26	87%	29	97%	3	10%
Customer e	30	5	17%	8	27%	24	80%	27	90%	28	93%	25	83%	6	20%	1	3%	25	83%
Customer f	30	25	83%	28	93%	23	77%	23	77%	23	77%	12	40%	28	93%	20	67%	14	47%
Customer g	30	15	50%	18	60%	27	90%	13	43%	16	53%	5	17%	11	37%	22	73%	7	23%
Customer h	30	11	37%	15	50%	14	47%	8	27%	6	20%	17	57%	19	63%	22	73%	29	97%
Customer i	30	25	83%	17	57%	8	27%	13	43%	23	77%	17	57%	3	10%	14	47%	13	43%
Customer j	30	16	53%	15	50%	14	47%	26	87%	29	97%	9	30%	16	53%	11	37%	11	37%

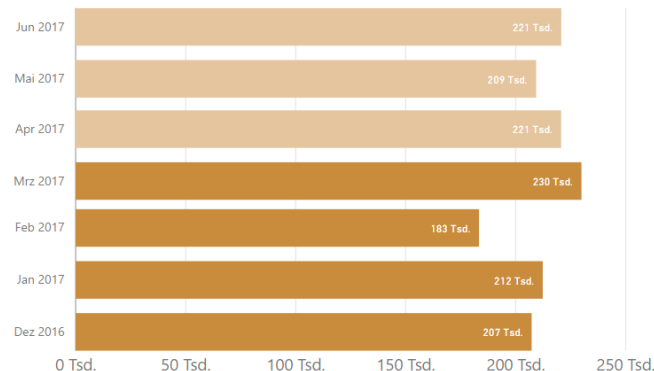
- ☐ (Blank)
- ☐ Cafe Lake View
- ☐ Customer a
- ☐ Customer b
- ☐ Customer c
- ☐ Customer d
- ☐ Customer e
- ☐ Customer f
- ☐ Customer g
- ☐ Customer h
- ☐ Customer i
- ☐ Customer j

Telemetrie und Statistiken

Device Availability



Coffee Consumption (in kg)



Products



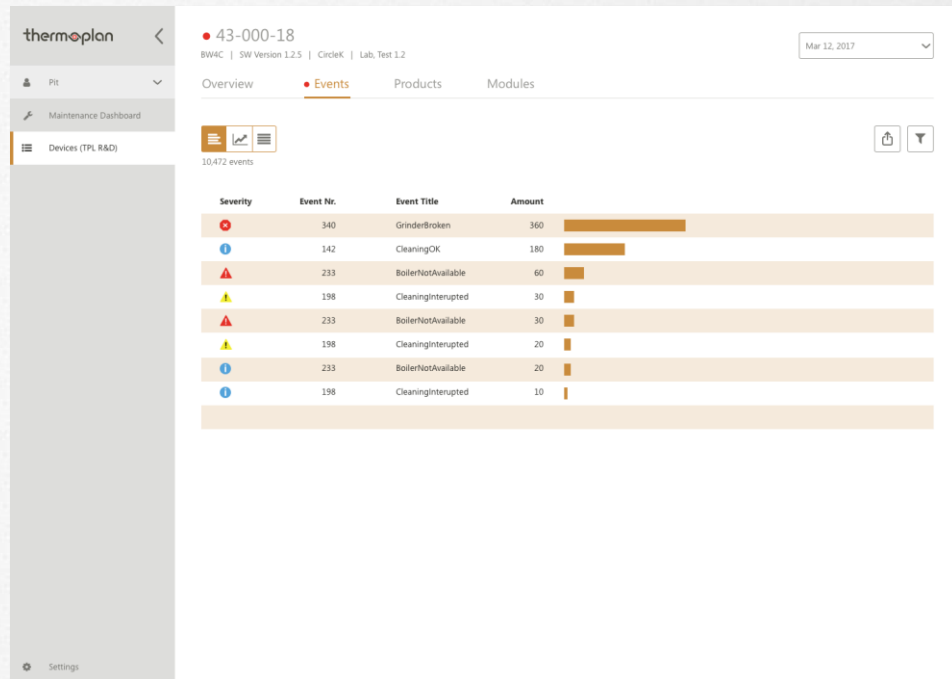
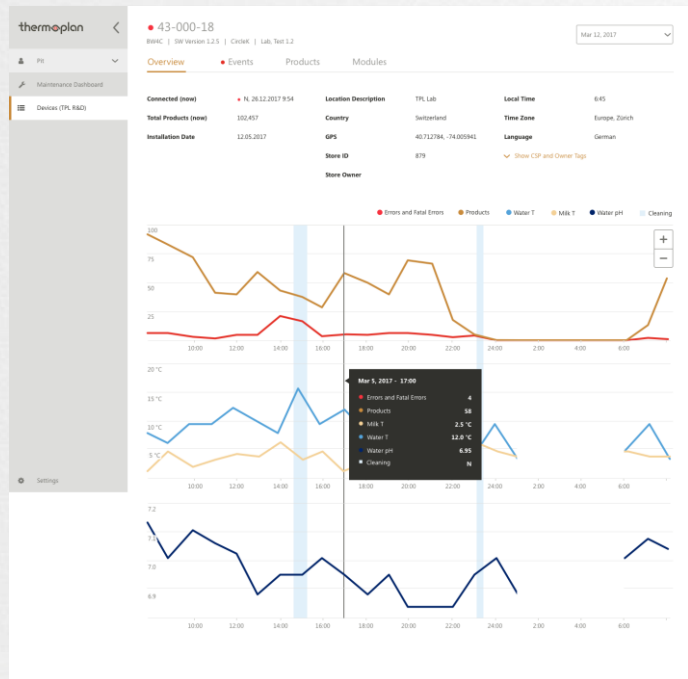
Yesterday and Variance 7 days ago

6875!
Ziel: 7204 (-4.57%)

Region

- ☐ Alles auswählen
- ☐ (Leer)
- ☐ AT
- ☐ CH
- ☐ DE

Events und Errors





Remote Update und Remote Maintenance

Jobs

🔍 Search for State, Job ID, File, Device, Commissioner

New

State	Job ID	Date ▼	Store ID	Device	File
Accepted	174	24.05.17		TestZurich	TEST3 - Copy.raucb
Accepted	173	24.05.17		TestZurich	TEST3 - Copy.raucb
Failed	172	24.05.17		TestZurich	TEST3 - Copy.raucb
Failed	171	24.05.17		TestZurich	TEST3 - Copy.raucb
Failed	170	24.05.17		TestZurich	TEST3 - Copy.raucb
Failed	169	24.05.17		TestZurich	TEST3 - Copy.raucb

Device Detail



B1-134528

Oct 31, 2017 - Oct 31, 2017



BW4c CTM-RS | BW4_PROTO_tc3-14-g5b22877 | bbv



Overview Events Products Modules Network Interfaces History



2 of 2 products

Date ▼	Product Name	Product Category	Success	Extraction Time	Total Time
31.10.17 10:51	@RinseProduct	_RinseScheduled	Y		
31.10.17 10:46	Ristretto1_single_grinder0_undefined_undefined	Ristretto	Y	3.9 s	



Win – Win

Kunde

- Massive Vereinfachung bei Produktlancierungen
- Kosteneinsparungen dank Automatisierung
- Aktuelle Übersicht über die gesamte Geräteflotte
- Weniger Ausfälle & kürzere Ausfallzeiten
- Bessere Qualitätskontrolle

Thermoplan

- Stärkere Kundenbindung
- Datengrundlage für
 - Produkt- und Qualitätsoptimierungen
 - Prozessoptimierungen
- Basis für weitere Innovationen, Dienstleistungen und Produkte:
 - Von präventivem zu vorausschauendem Service
 - Technische Innovationen
 - Neue Businessmodelle



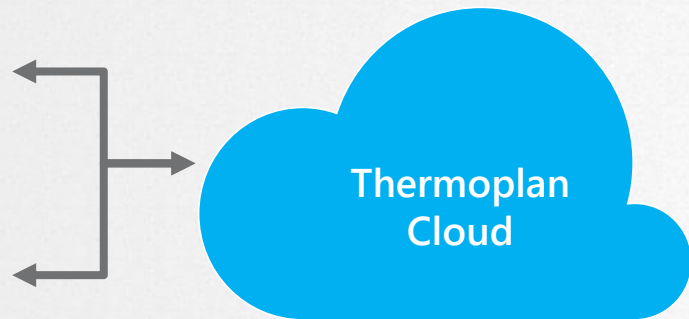
Mengengerüst

- Mehrere zehntausend Maschinen
- Mehrere tausend Nachrichten pro Sekunde
- Rund 100 GB Neudaten pro Tag



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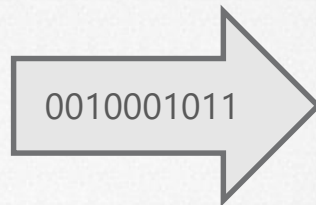
Umsetzung



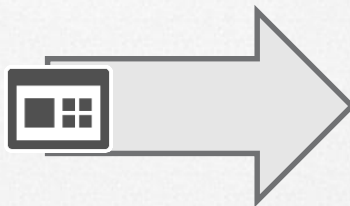
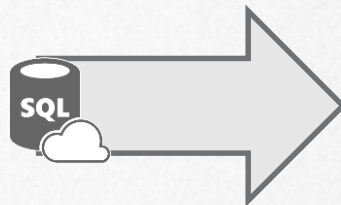
Thermoplan
Cloud



Thermoplan



0010001011



"Big Data"
Cloud



Global
Players



Mid-sized
Customers



Small
Customers

Developer Services



Visual Studio Team Services



Azure DevTest Labs



VS Application Insights*



HockeyApp



Developer Tools

Management & Security



Azure Portal



Scheduler



Automation



Log Analytics



Key Vault



Security Center*

Compute



Virtual Machines



Virtual Machine Scale Sets



Cloud Services



Batch



RemoteApp



Service Fabric



Azure Container Service

Web & Mobile



Web Apps



Mobile Apps



Logic Apps*



API Apps



API Management



Notification Hubs



Mobile Engagement



Functions*

Data & Storage



SQL Database



DocumentDB



Redis Cache



Storage: Blobs, Tables, Queues, Files and Disks



StorSimple



Search



SQL Data Warehouse*



SQL Server Stretch Database*

Analytics



Data Lake Analytics*



Data Lake Store*



HDInsight



Machine Learning



Stream Analytics



Data Factory



Data Catalog



Power BI Embedded*

Internet of Things & Intelligence



Azure IoT Suite



Azure IoT Hub



Event Hubs



Cortana Intelligence Suite



Cognitive Services*

Media & CDN



Media Services



Content Delivery Network

Identity & Access Management



Azure Active Directory



B2C*



Domain Services*



Multi-Factor Authentication

Hybrid Integration



BizTalk Services



Service Bus



Backup



Site Recovery

Networking



Virtual Network



ExpressRoute



Traffic Manager



Load Balancer



Azure DNS*

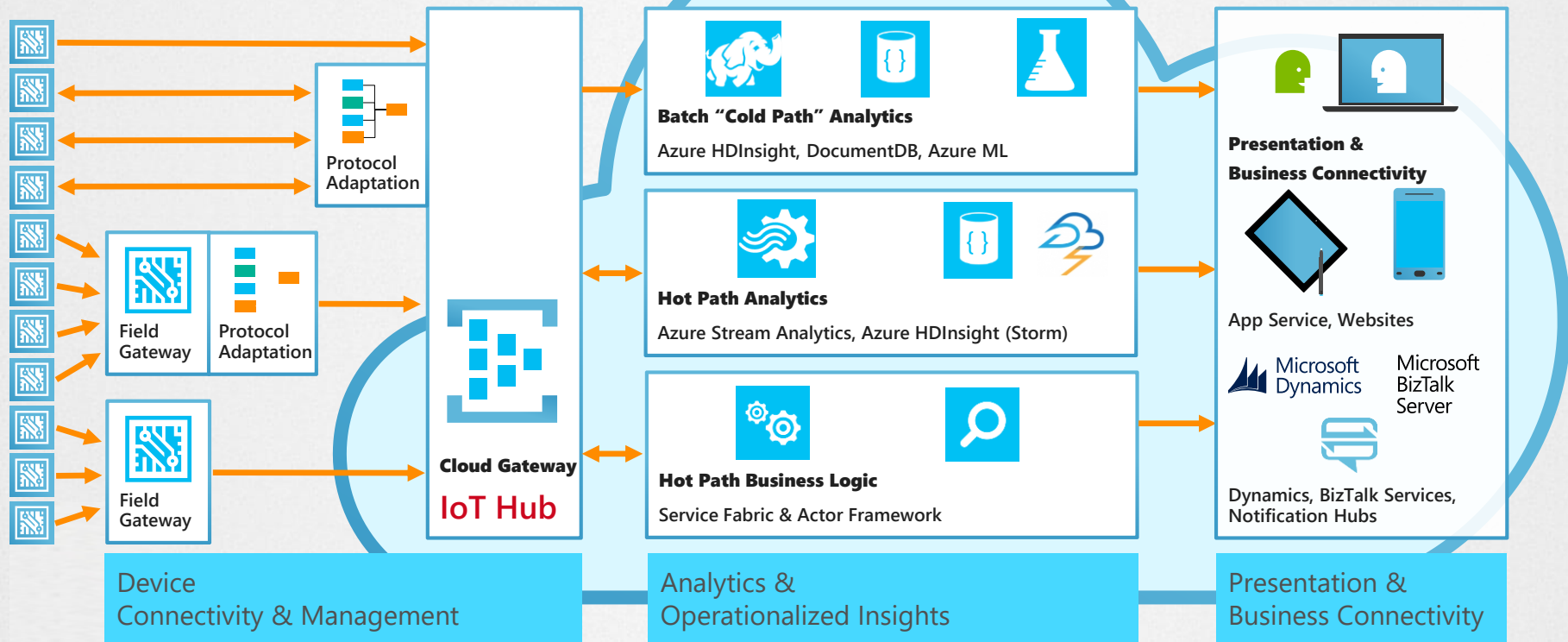


VPN Gateway



Application Gateway

Microsoft Azure IoT Suite





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Demo

Azure IoT Hub & Time Series Insight






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Azure IoT Central

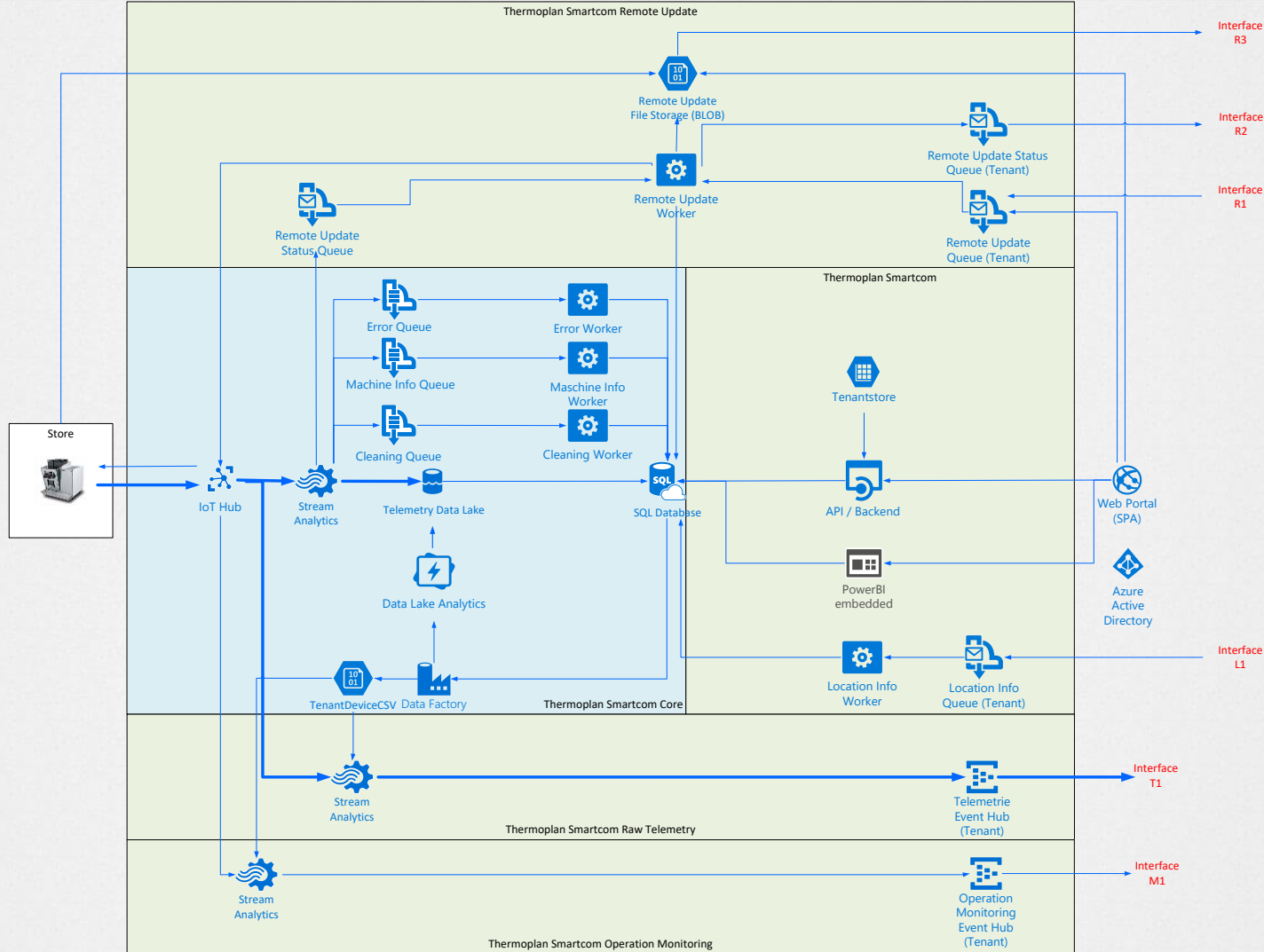
Microsoft buys a tiny Italian startup to boost one of its biggest bets



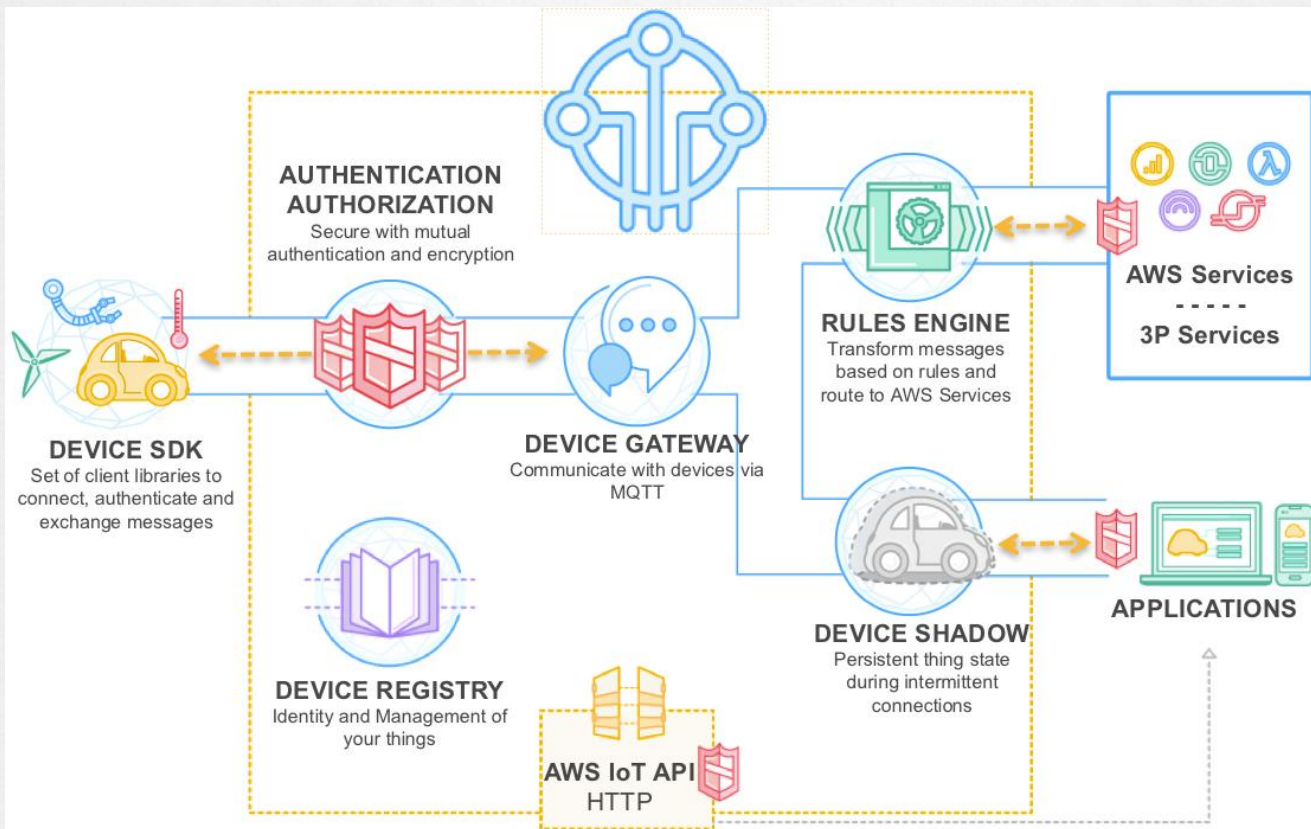
Matt Weinberger  

🕒 May 3, 2016, 6:48 PM  1,113





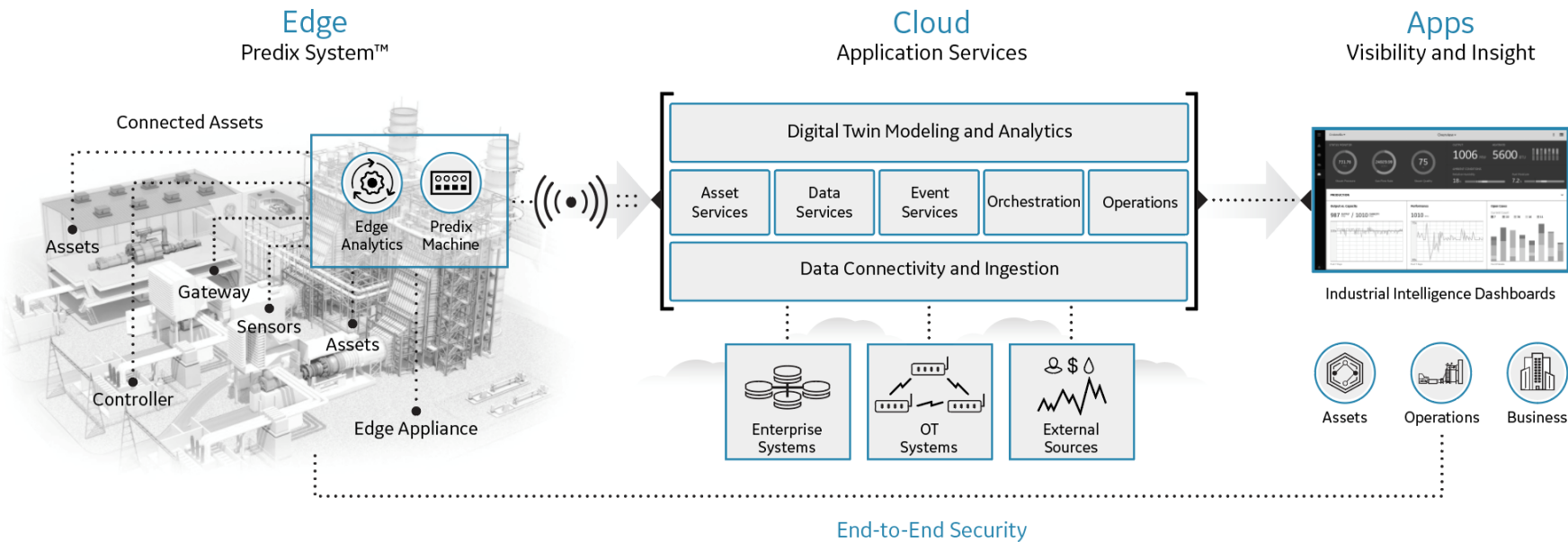
Amazon AWS IoT



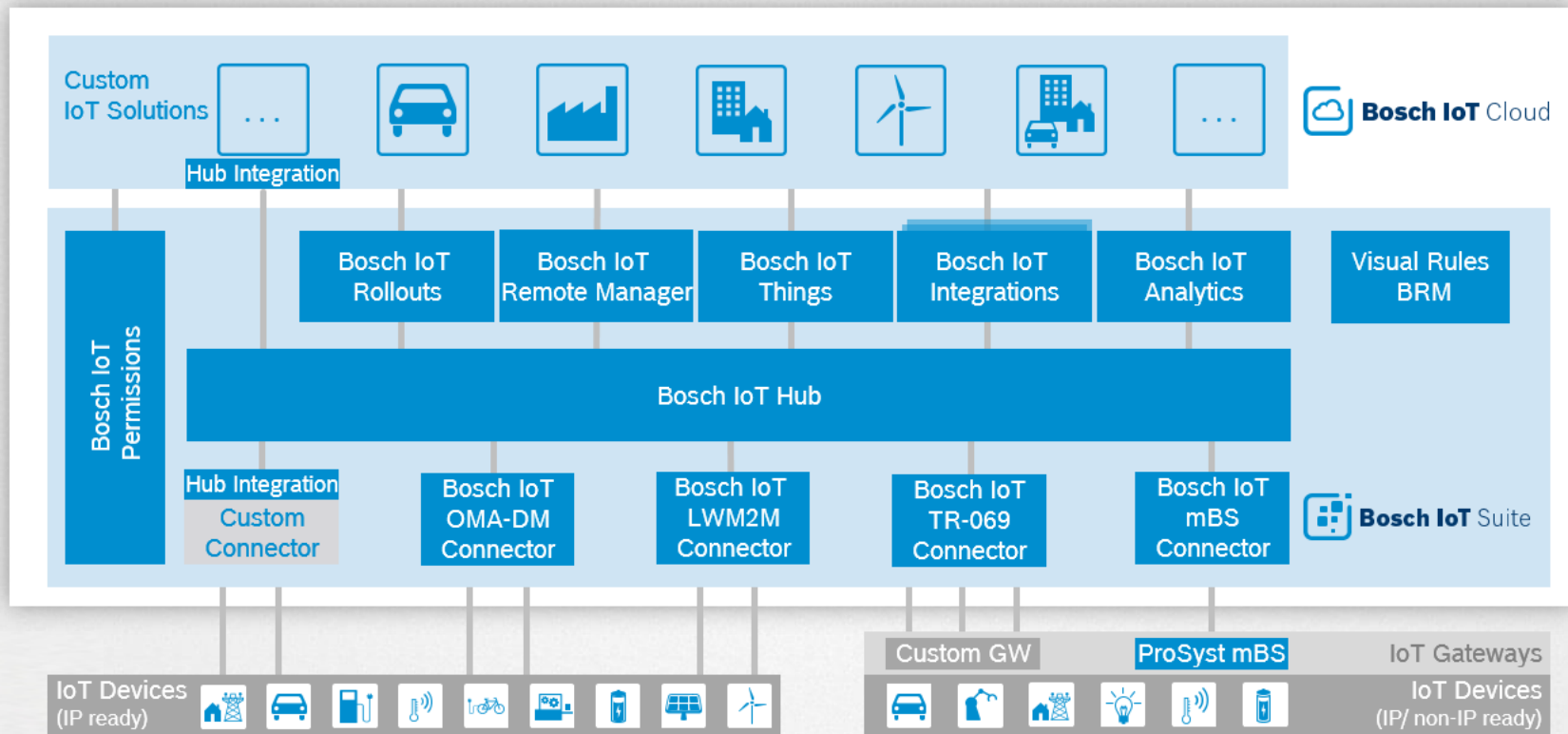


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Predix IoT Cloud (General Electric)



Bosch IoT Suite



An abstract graphic on the left side of the slide. It features a white silhouette of a person climbing a rope. The rope is represented by several thick, curved lines in shades of blue, green, and yellow. The person is positioned on the left, with their arms and legs extended as if they are climbing. The background is a solid blue color.

<Next session 00:00 – 00:00 uur>

<Title next session>

<Name speaker next session>