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The Hunt for Zombie Servers

How the PI Redfish Connector Delivers Value in the Data Center World

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Use Case

The photo below shows a typical highly efficient DC in it's lights-out state. Right?

But Wait!!!

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Zombie Servers Will Kill…

Your energy bill!

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Why should we care?

Undead Machines

The estimated number of zombie servers, those powered on but doing nothing in data centers, and the electricity they are burning

U.S. ZOMBIE SERVERS: 3.6 Million
ENERGY DRAW: 1.44 gigawatts
EQUIVALENT TO: Power from three large power plants; power used by 1,152,000 households, roughly the number in Chicago
GLOBAL ZOMBIE SERVERS: 10 Million
ENERGY DRAW: four gigawatts
EQUIVALENT TO: Power from eight large power plants; power used by 3.2 million households, roughly the number in New York City

Sources: Jonathan Koomey, Steyer-Taylor Center for Energy Policy and Finance at Stanford University; WSJ (city calculations)

THE WALL STREET JOURNAL.

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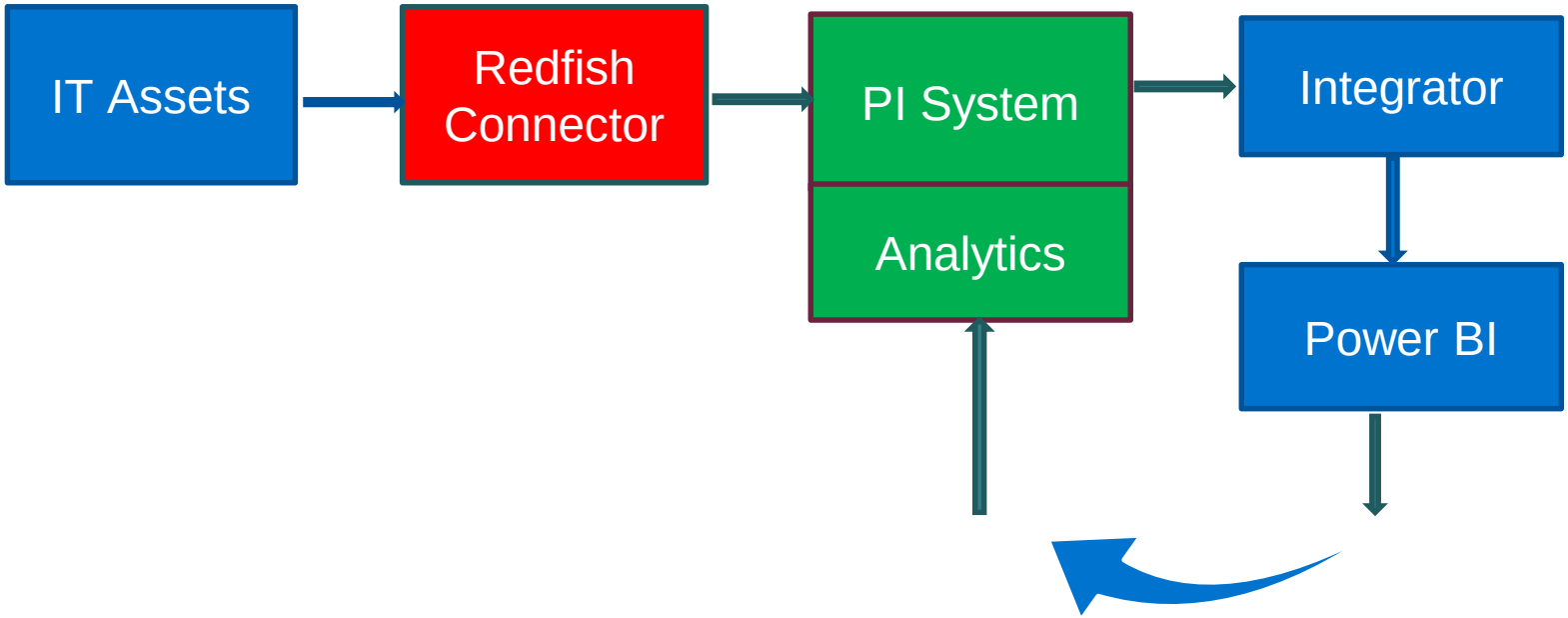
System Overview



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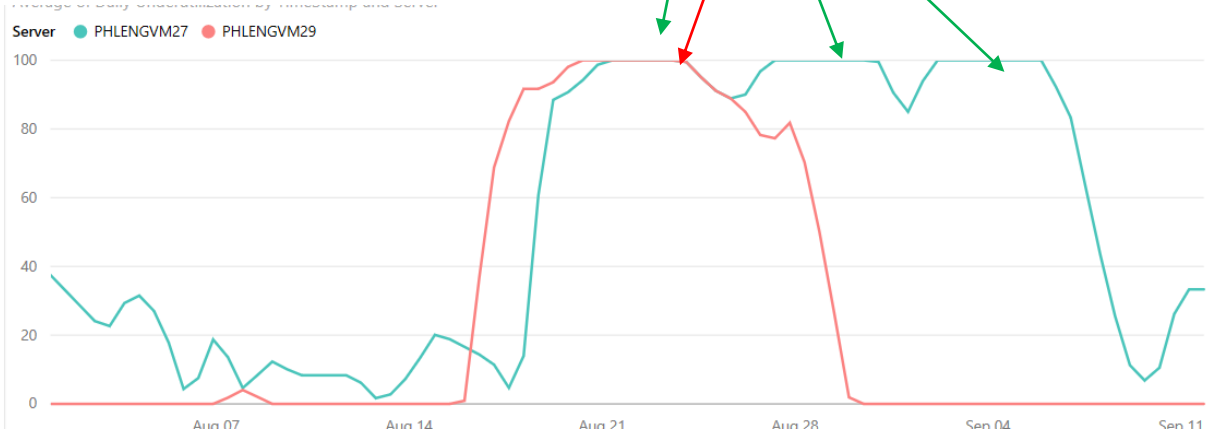
Zombie Servers with Event Frames

PI System

Template: Zombie					
2016-09-06.PHLENGVM25	5:16:23:30.121	9/6/2016 12:00:00...	9/11/2016 ...	E	
Root Cause	1:0:00:00	9/5/2016 12:00:00...	9/6/2016 1...		
2016-09-02.PHLENGVM27	5:0:00:00	9/2/2016 12:00:00...	9/7/2016 1...		
Root Cause	1:0:00:00	9/1/2016 12:00:00...	9/2/2016 1...		
2016-08-27.PHLENGVM27	5:0:00:00	8/27/2016 12:00:0...	9/1/2016 1...		
Root Cause	1:0:00:00	8/26/2016 12:00:0...	8/27/2016 ...		
2016-08-21.PHLENGVM27	4:0:00:00	8/21/2016 12:00:0...	8/25/2016 ...		
Root Cause	1:0:00:00	8/20/2016 12:00:0...	8/21/2016 ...		
2016-08-20.PHLENGVM29	5:0:00:00	8/20/2016 12:00:0...	8/25/2016 ...		
Root Cause	1:0:00:00	8/19/2016 12:00:0...	8/20/2016 ...		



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Integrator

Demo

Collect the REDFISH data and define the attributes to explore

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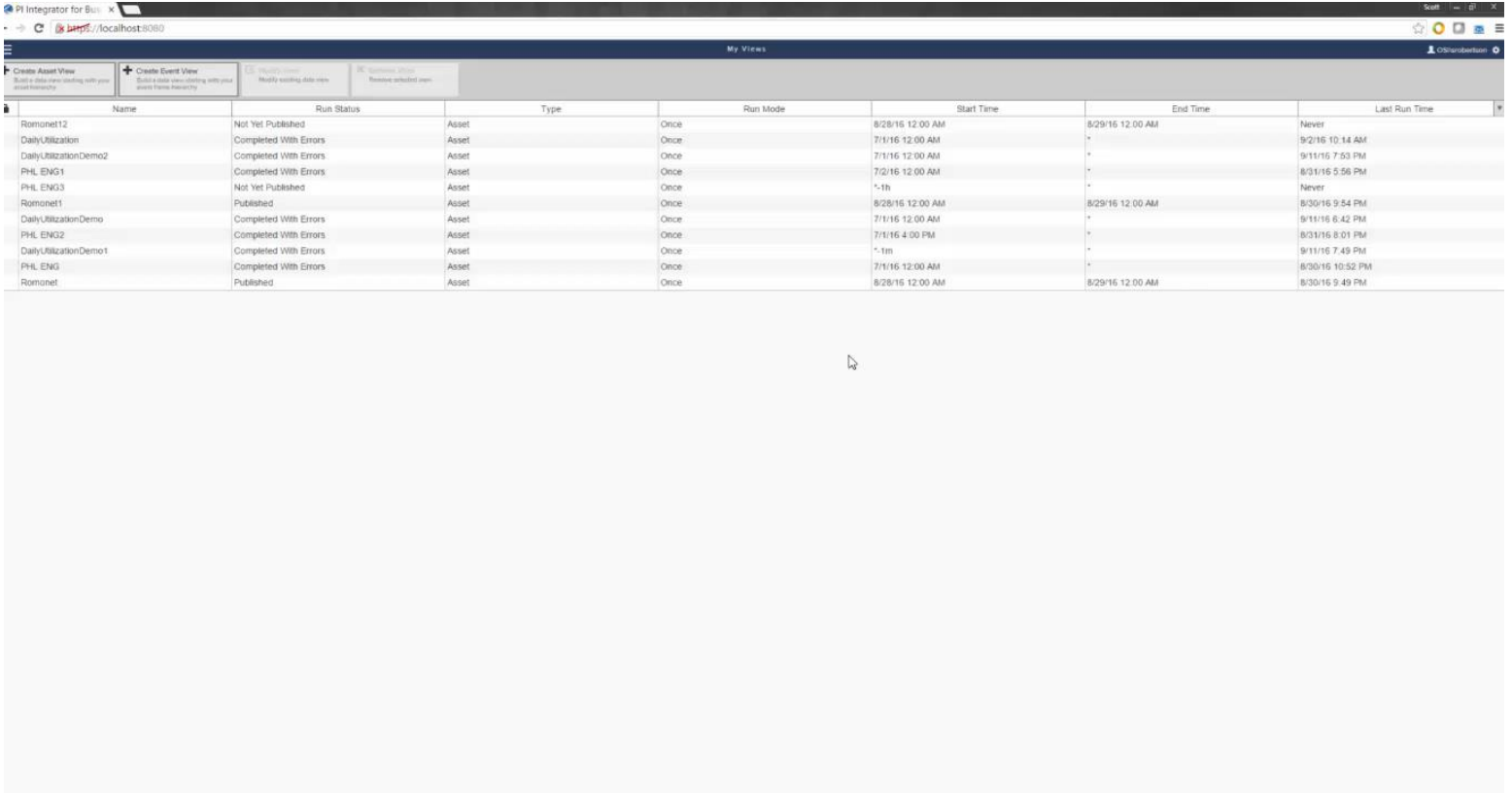

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Power BI

Using Power BI to look for correlations to CPU utilization

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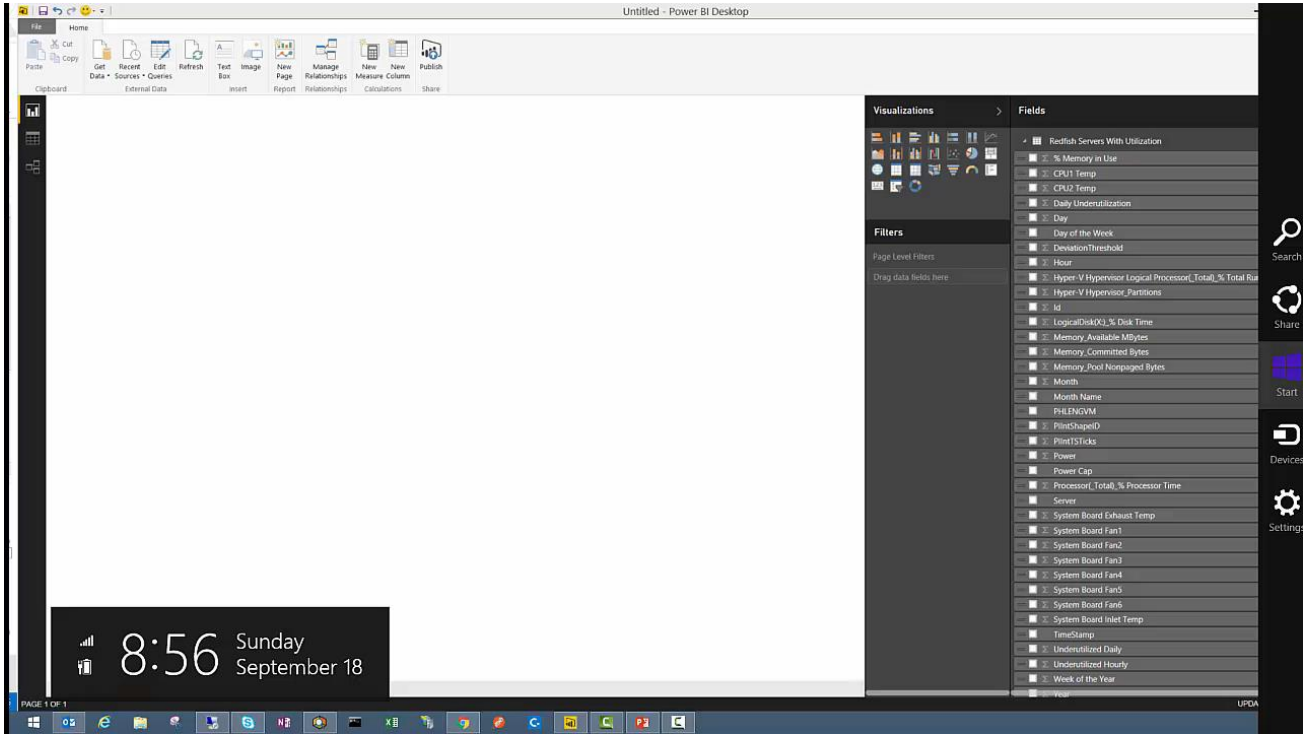

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PI System | Analytics

Create Event Frames that can point to specific potential Zombie Servers

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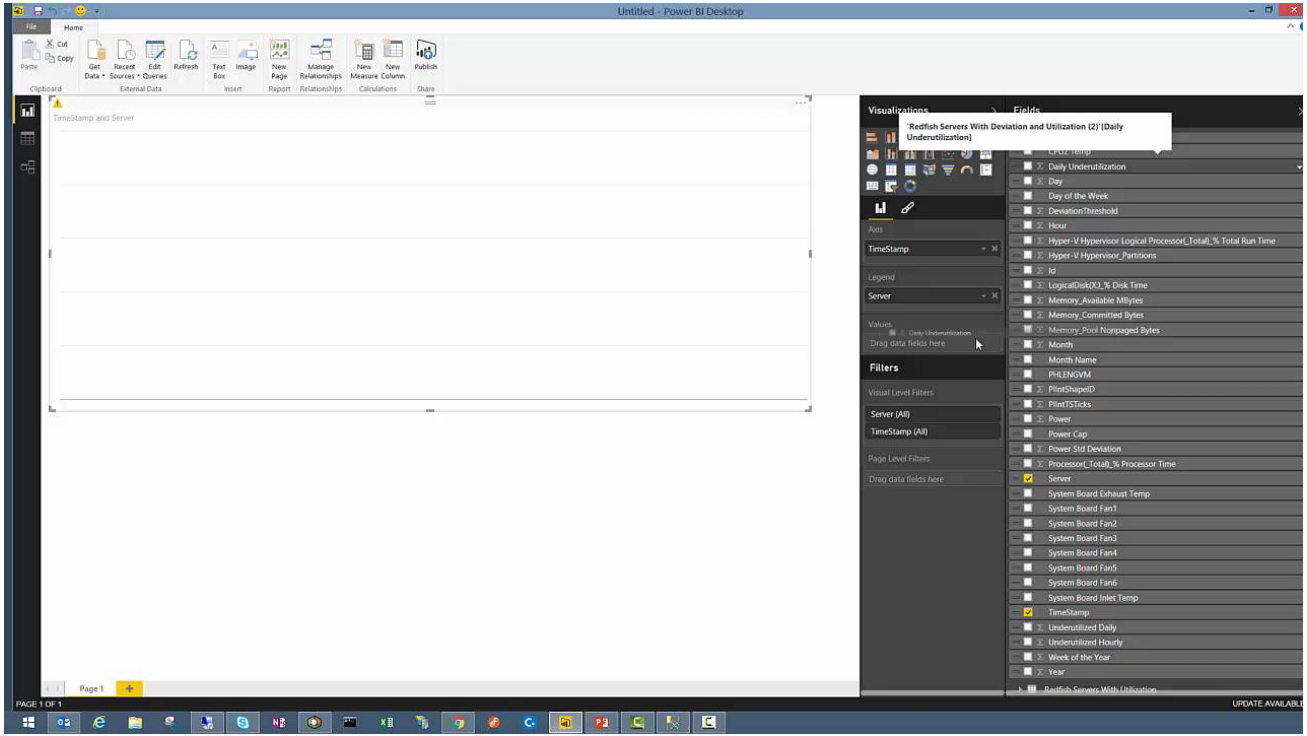

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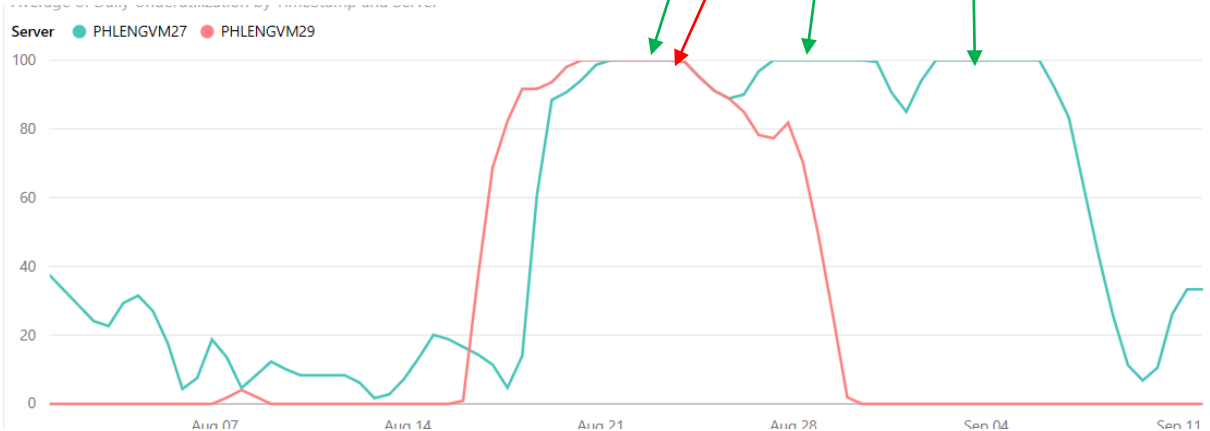

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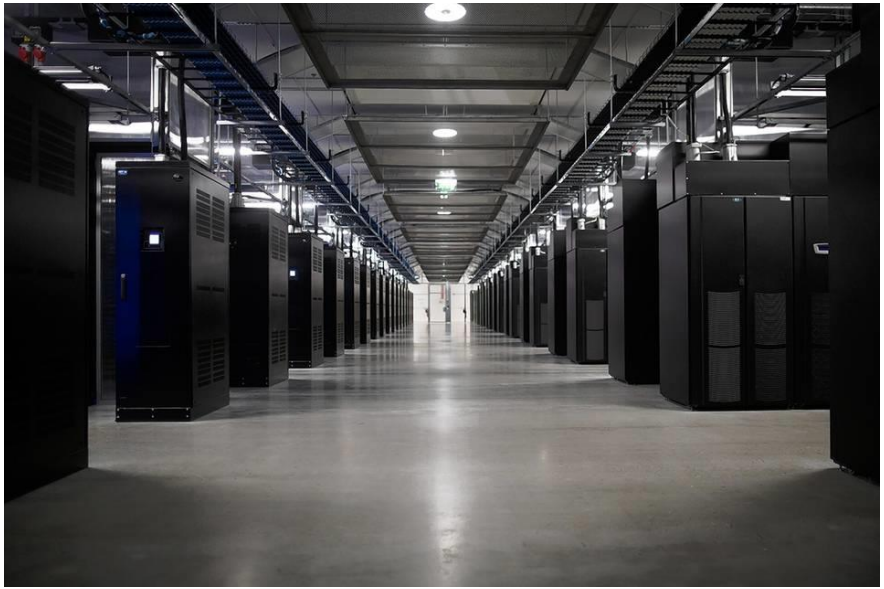
Challenges



- How do we monitor server usage?
- How do we locate specific servers?
- What criteria do we apply to label it a “zombie”?
- How do we proactively find these assets?
- How do we handle adds/moves/changes?

These are traditional challenges handled by the PI System!

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Redfish Goals

Redfish is an open industry standard specification and schema that meets the expectations of end users for simple, modern and secure management of scalable platform hardware.

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Redfish Scope

- RESTful interface over HTTPS in JSON format based on OData v4
- Usable by client applications and browser-based GUIs
- A secure, multi-node capable replacement for IPMI-over-LAN
- Schema-backed but human-readable output
- Covers popular use cases and customer requirements
- Intended to meet OCP Remote Machine Management requirements

Enable easier management of IT assets in a 21st century Internet (Cloud) world!

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REDFISH and its IT Industry Adoption?

It's happening much faster than predicted

Promoters (13)	Supporters(13)
Broadcom Limited	American Megatrends, Inc.
Cisco	Fujitsu
Dell, Inc.	Huawei
EMC	IBM
Emerson Network Power	Insyde Software Corp
Ericsson AB	Mellanox Technologies
Hewlett Packard Enterprise	Microsemi
Inspur	NetApp
Intel Corporation	Oracle
Lenovo	OSIsoft, LLC
Microsoft Corporation	Quanta Computer Inc
Supermicro	Seagate
VMware Inc.	Western Digital Corporation

Most IT device vendors – servers – storage – network – BMC – etc. are committed to REDFISH and either shipping in volume or have given a date to start volume ships.

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Actions

- Go to the PI Connector Expo Booth for more information.
- Contact John Daniels or Scott Robertson for further information.
  - srobertson@osisoft.com
  - jdaniels@osisoft.com

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감사합니다

谢谢

Danke

Gracias

Merci

Thank You

ありがとう

Спасибо

Obrigado

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Backup slides

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