



Assessing, selecting and upgrading GIS systems with minimal business disruption

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25th November 2020

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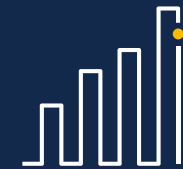
Foundations of Utility GIS



Acquiring versus
building a network
GIS model



Utility GIS drivers –
what does your GIS
need to support?



Evolve rather
than replace

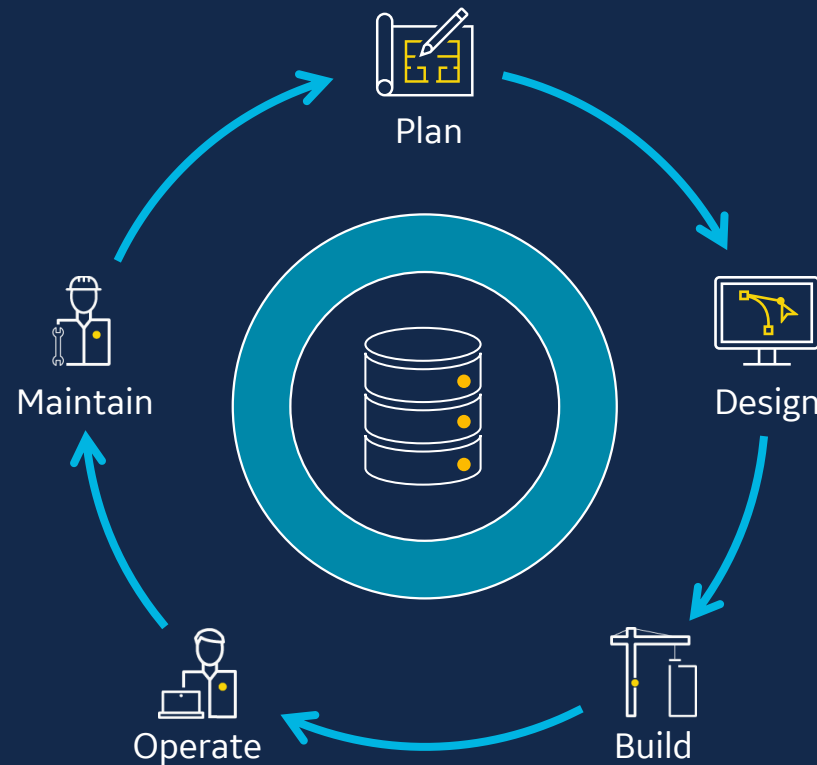


Asset Management Lifecycle

- New connection requests for DER (PV gen, EV load, battery storage)
- Automated planning
- Geospatial analysis for decision support (build or upgrade)

- Inspect & collect
- Asset maintenance planning
- Business analysis & reporting

- Network model synch with ADMS for switch planning and control
- Network schematics & single line diagrams



- Design pre-check from field
- Design state model
- Design layout tools & costing
- Business rules & data quality

- As built updates from field
- Redline sketches
 - Attribute updates
 - Intelligent network capture



Utility GIS Drivers



People

- **Increasing capability in web/mobile**
- Access information on any device at any time...online or offline
- Best in class user experience (UX)



Process

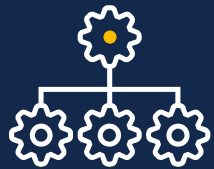
- **Process automation & simplification**
- Effortless data access with industrial strength security
- Collaborative data governance



Technology

- **Utilise cloud technologies**
- **Keep pace with utilities technology**
- Enable transformations with Agile and DevOps

Utility Industry Drivers



Process automation & system integration



Workforce transformation



Regulatory reform



DER expansion



Adoption of cloud



Digital transformations



Utility GIS In operation



Cloud Native
technology



Meeting demand



DevOps for utilities



Cloud Native



Cloud native technology is enabling flexible scalability **on-premise, on-cloud** and **hybrid deployments**



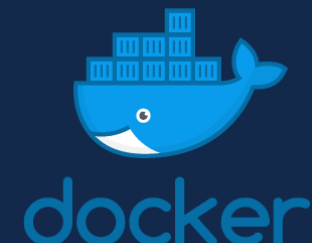
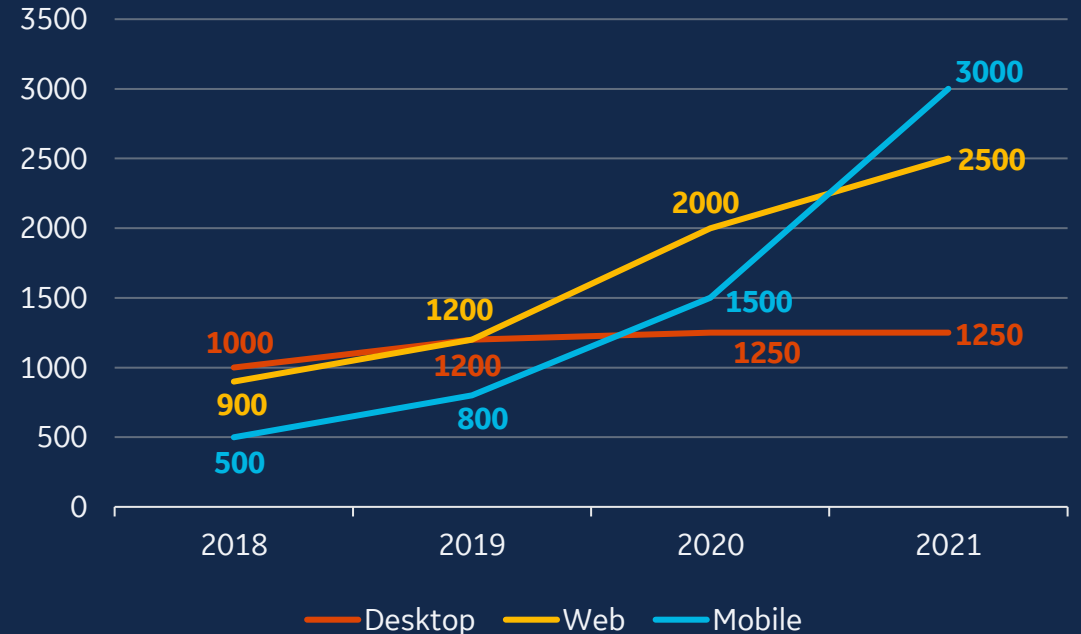
Cyber-security critical to business sustainability. Mainstream technology & practices **improve security**



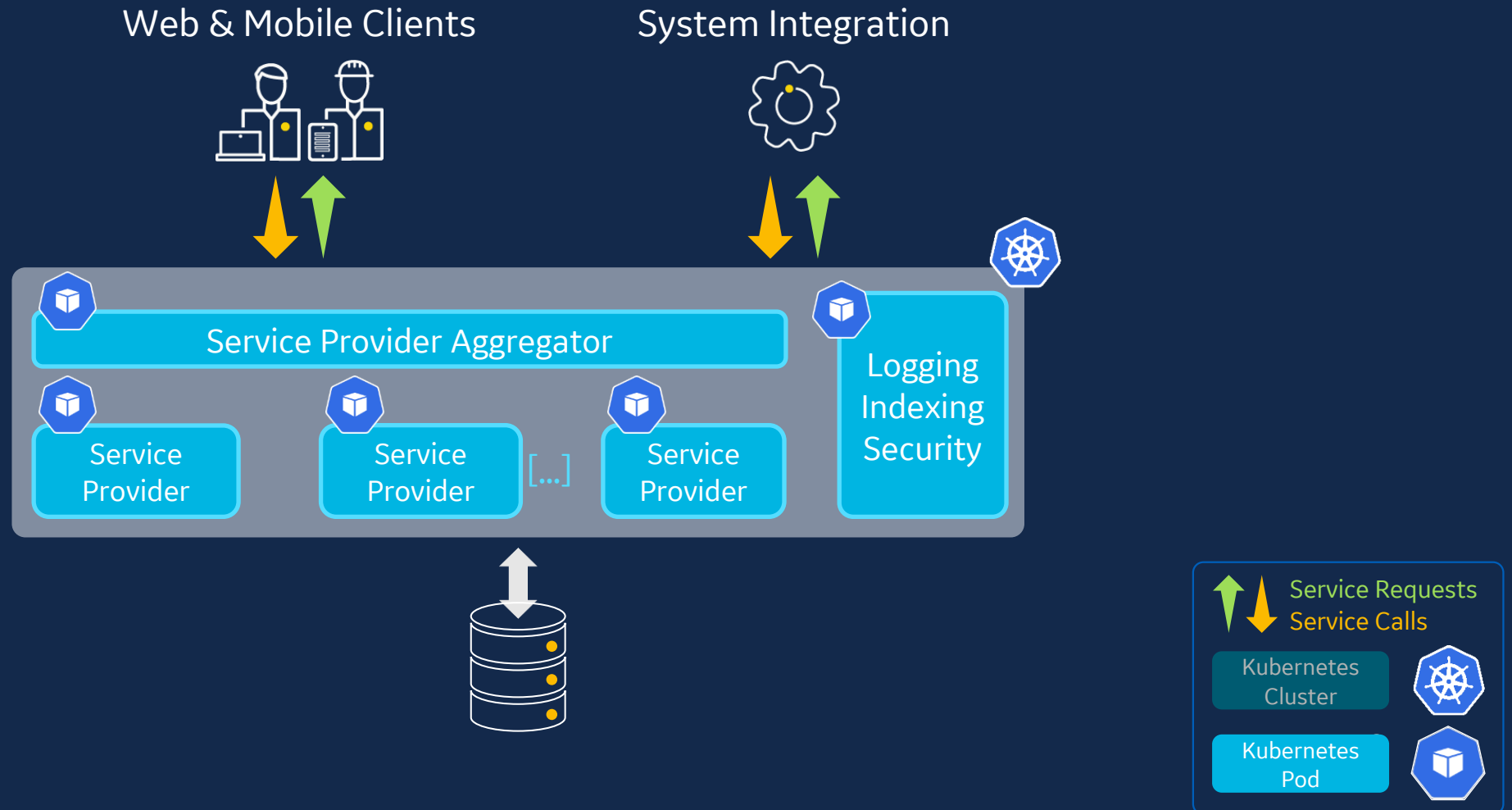
Ability to **monitor and maintain** – ease of **scaling and deployment** with Kubernetes & Docker



Microservices with a lightweight service architecture, providing **modularity, security, and scalability**



Meeting demand



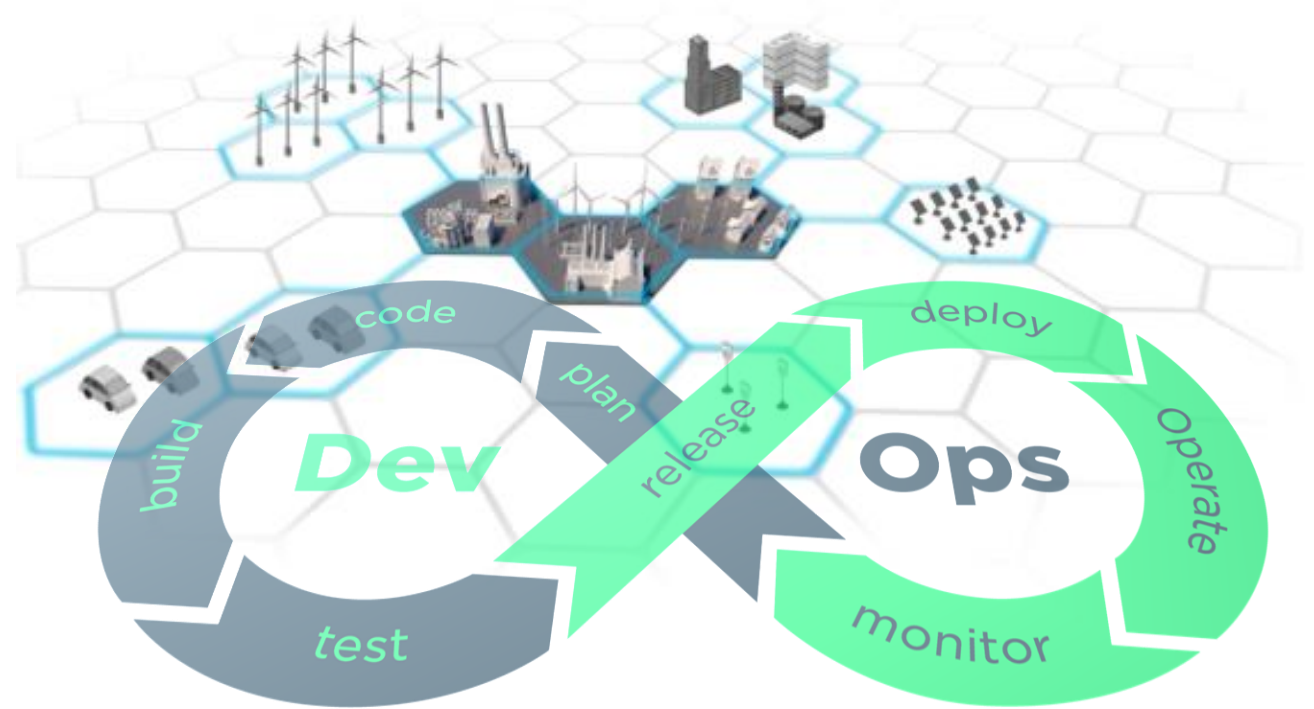
DevOps for Utilities

Utility IT organizations' serve evolving customer needs and regulator demands - looking to partner with their IT vendors to create business agility and reduce risk.

Adopting DevOps practices is a solution that enables:

- Accelerated time to value
- Rapid response to security threats
- Design and deploy solutions to emerging needs
- Built-in feedback cycles

DevOps is a partnership between vendor and customer



Applying Analytics



Support for ingestion of all major visual inspection files types: RGB, LIDAR, IR, Hyperspectral & Multispectral...



Improved GIS network model accuracy with image AI driven updates to GIS



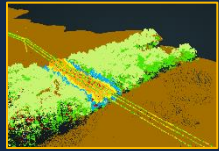
Up to 90% data processing productivity gain for vegetation management and asset inspection programs



Vegetation Management



Key Features



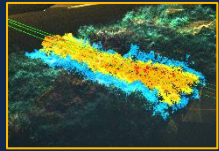
Automated Classifications

AI-based classification for LiDAR point clouds and photogrammetry



Conductor Vectorization

Vector files and sag modeling



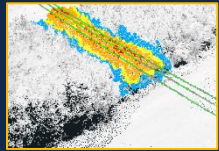
Vegetation Encroachment Risk Analysis

Configurable risk analysis for priority-based trimming



3D and 2D Reports & Easy Integration

Flexible reporting engine and secure APIs for Data Integration



Growth Prediction

Timeseries and multivariable trees growth modeling

Value to customers



Asset Inspection

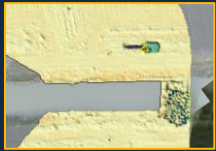


Key Features



Asset and Defect Recognition

Mitigating failure threats with automated Asset and Defect Recognition



Change Detection

2D and 3D change detection analytics



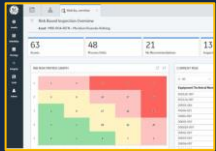
Hotspots detection

Identifying overheating assets from thermal (IR) imagery



Storm Damage Assessment

Quickly assessing storm damage and broken equipment



Easy Integration

With Asset Performance Management (APM) and ERPs

Value to customers



Reduced

Risk exposure by detecting & mitigating failures early



Reduced

Unplanned outages frequency



Reduced

Maintenance and mobilization costs



Improved

Incident response and customer satisfaction



Asset Inventory

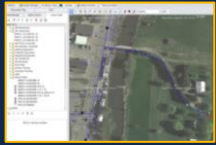


Key Features



Asset Identification

Get a holistic picture of your assets to help manage problems in a more comprehensible way.



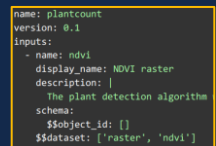
Build or Improve Network Model

Improved GIS accuracy



Mobility

Mobile data capture and easy integration with field work applications



Workflows and Apps Development

Develop your own workflows and applications using our SDK

Value to customers



Reduction of Data Management and Integration costs



Improved
GIS Network
Model Accuracy



Improved
Productivity with
customer-developed
visual analytics apps



Recap

- Anticipate your needs for GIS. Industry patterns are available
- You have options on how you operate and scale GIS
- Automation through AI/ML has become a practical upgrade to GIS





GE Digital

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