Changing Landscape

Enterprise GIS Program at the City of Portland

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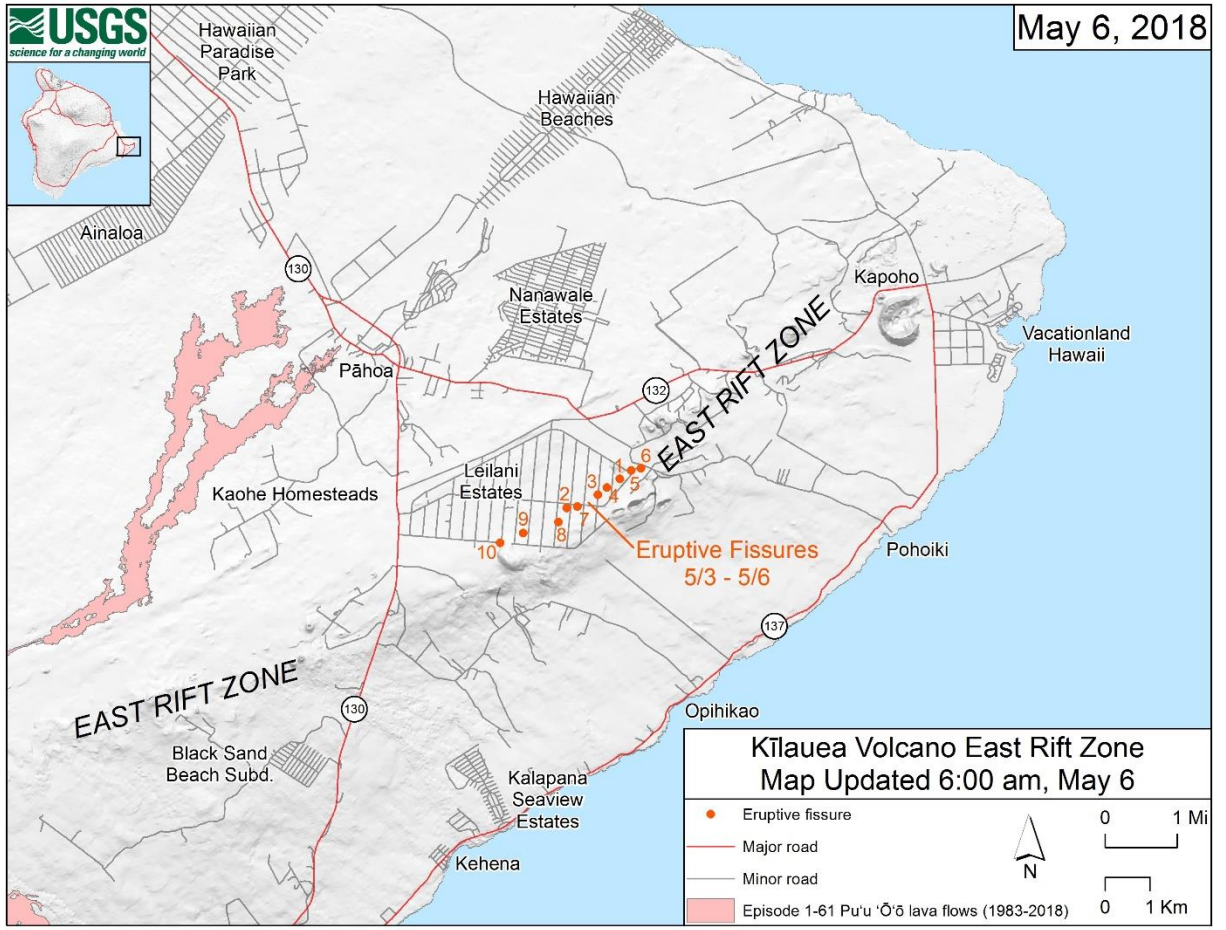
Are we providing this -



Or This -

How the landscape is changing

Transformation from client / server oriented GIS model to web based ones.

This changes what is required from an enterprise GIS implementation across the whole stack.

The roles and skills needed to build and support these systems are changing in parallel .

You are the GIS professionals that are driving this change and the ones needed to create these new systems.

Enterprise GIS for PDX

Provide an authoritative source for spatial and related tabular datasets to city staff and external users

Make the data discoverable and accessible through desktop and web applications

Corporate GIS Program

City of Portland has 30 bureaus providing water, sewer/storm water, transportation, planning, police, fire and permitting services.

6500 employees with 2000 GIS desktops and about 1000 active users

Provide 1600 datasets and applications to access it.

Web based access at www.Portlandmaps.com provides data to thousands of citizens and business daily.

Client / Server Model

The HUB – Collect data from across the enterprise and load it to a read-only SQL tier. Lots of .NET, Python, ArcPY, FME, SQL.

Extensive use of ArcMap by internal staff, as well as our MapWorks application built in house using ESRI SDK's.

GIS Analysts can configure installed windows applications but hard to do more without complex programming. Hard to use without a PC attached to the network.

Publicly available web application www.Portlandmaps.com widely used by city staff and citizens but can only be changed by a few programmers.

Web Mapping Model

Same workflow for data collection but publishing to web mapping servers including reprojection, duplication and lots of tile generation.

Create public and private WMS used for web and native apps. GIS Analysts use these in ArcGIS Online, Collector, Survey 123, etc.

Building out internal system to support easy creation of private WMS and applications which can be accessed anywhere securely. Uses ArcGIS for Enterprise, PostGreSQL, GeoCortex.

Makes building and deploying applications much easier. More people can make them and users can access them anywhere.

System Architecture

Client / Server required a production SQL server, some others for data loading and licenses. Along with that 1000's of installations on PC's.

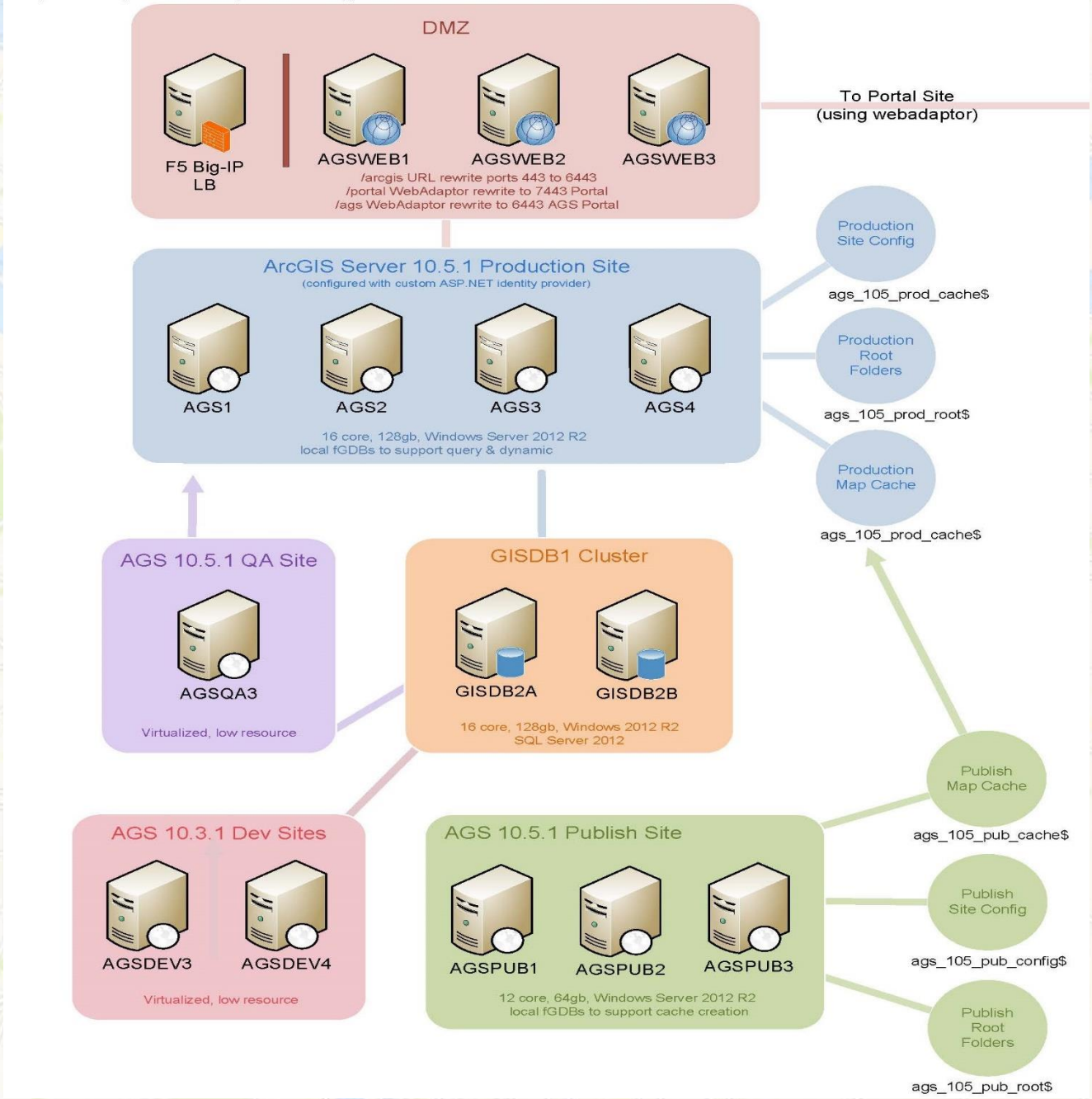
Web requires servers for WMS, SQL, Portal, PostGreSQL, Web, GeoCortex, Geoprocessing, Streaming …. Many in triplicate for high availability, dev/test/production deployments.

Fundamental shift to server side = exponential increase in backend complexity in direct proportion to the simplification of the client.

Lots of GIS professionals needed in the coming years to build out these kinds of systems.

City of Portland ArcGIS Server 10.5.1 Deployment

http://www.portlandmaps.com/arcgis/rest/services



Roles and Skills

My team consists of nine members – Programmers, DBA, Systems Analyst, GIS Analysts and Technicians.

Core skills:

- GIS – Analysis, Data Wrangling, Data Visualization
- Programming – Python, ESRI SDK's, HTML/CSS
- Data – SQL Server
- Server – mostly internal with more software on clients

New skills:

- Web – **Javascript**, JSON parsing, Arcade
- Server – web architecture with lots of integration, security, monitoring, and server side software
- Data – API's, non-structured data, PostGreSQL
- GIS – It's still important !!!!

Demo Time

API's and Management Tools

Metadata

Open Data

Open Data Service

Questions ?

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