

Geocortex Viewer for HTML5 (GVH) - VertiGIS Studio Web (VSW) Feature Comparison Matrix	Geocortex viewer for HTML5 (GVH) Current	VertiGIS Studio Web (VSW) 5.18
Environment & Architecture <span style="float: right;"><i>alternative = done differently</i></span>		
<b>Framework Architecture</b>		
XML and JSON based configuration	x	x
Site configuration inheritance to eliminate duplicated settings across applications	x	alternative
Referencable configuration at granular component level supporting re-use		x
Web-based application builder and configuration interface	x	x
Live interactive preview directly in configuration interface		x
Manage multiple applications from single installation	x	x
<b>Management Tools</b>		
<i>In GXW configuration of the webmap drives a significant portion of application behavior</i>		x
Separate administrative web application	x	x
Manage map resources / map services	x	x
Manage layer settings	x	x
Manage application settings (attributes / fields, layer reports, etc.)	x	x
Manage feature layer symbology	x	x
<b>Device Support</b>		
Support for desktop browsers on Windows and Mac OS X	x	x
Use the same application on a variety of popular devices	x	x
Support for iPhones and iPads	x	x
Support for Android smartphones and tablets	x	x
<b>Browser Support</b>		
Internet Explorer 9-11 on Windows (Esri JavaScript 4.x API does not support IE)	x	not planned
Microsoft Edge on Windows	x	x
Firefox on Windows	x	x
Chrome on Windows	x	x
Safari on iOS	x	x
Chrome on Android	x	x
<b>Security</b>		
<i>In GXW configuration of portal security drives a significant portion of application behavior</i>		x
Secure applications based on users and roles	x	x
Fine-grained user-level authorization on map services, feature services, layers, and attribute fields	x	GXAC
Fine-grained user and group level visibility for UI components and menu items (tools)		x
Active Directory / LDAP / Windows authentication / etc	x	x
Support for Active Directory Federation Services	x	x

Single Sign-On using Windows Authentication	x	x
Enable anonymous / guest access	x	x
Sign-in and sign-out links	x	x
Support for ArcGIS Server secured map services	x	x
Support for ArcGIS Online secured content	x	x
Support for Portal for ArcGIS secured content	x	x
<b>Application Integration</b>		
Launch from selected features to external applications	x	x
Embed map in third-party applications, highlight features from external systems	x	x
Invoke viewer commands from third-party applications	x	x
Listen to viewer events from third-party applications	x	x
Support for launching external maps (Google StreetView, Bing Maps, etc.)	x	x
Support for bi-directional navigation with viewer and Bing or Google StreetView	x	x (SDK)
Support for bi-directional navigation with viewer and Pictometry	x	x (SDK)
Links to share URL and state with Facebook, LinkedIn, Twitter and Google+	x	x
Link to share URL and state via email	x	x
<b>URL Parameters</b>		
Pass parameters / instructions to the viewer on startup	x	x
Zoom to extent / identify / query / search >> via GXWF	x	x
<b>Developer APIs</b>		
API documentation, SDK, and samples	x	x
TypeScript-based Essentials API	x	x
Extensibility framework	x	x
JavaScript Integration API (enable bi-directional communication between the viewer and third-party applications)	x	x
ArcGIS API 3.x for JavaScript	x	does not apply
ArcGIS API 4.x for JavaScript		x
<b>Logging</b>		
System event and application usage logging	x	x
Performance monitoring and system statistics	x	GXA
<b>Internationalization</b>		
Viewer and management UIs internationalized for foreign language support	x	x
Toolkit / documentation resources for translators	x	Transifex
<b>Esri &amp; Mapping</b>		
<b>Map Service / Layer Types Support</b>		
ArcGIS Server dynamic, tiled, feature, raster and image services	x	x
Bing Maps layers	x	
OGC WMS layers (visualization)	x	x
OGC WMS layers (identify support)	x	x

OGC WFS layers (find, identify and query support - not visualization)	X	X
OGC WFS layers (visualization)	X	
OGC WMTS layers	X	X
Graphics and feature layers	X	X
Imagery layer identify support	X	X
GeoRSS layers (including point-, line- and polygon-based layers)	X	X
OpenStreetMap layers	X	X
General web tile layer	X	X
Graceful handling of intermittently available services	X	X
KML layers	X	X
ArcGIS Server time-aware layers (base support added, incubator time-slider available)	X	X
ArcGIS Server stream layers	X	X
Manage a catalog of dynamic layers (with ArcGIS Server 10.2+)	X	X
<b>ArcGIS Online &amp; Portal for ArcGIS Support</b>		
Search for Web Maps and services hosted on ArcGIS Online	X	X
Search for Web Maps and services hosted on Portal for ArcGIS	X	X
Reference ArcGIS Online Web Maps within applications	X	X
Reference Portal for ArcGIS Web Maps within applications	X	X
Override ArcGIS Online Web Map settings to enhance capabilities	X	X
Access to secured ArcGIS Online and Portal content using OAuth2	X	X
Sign-in using ArcGIS Online or Portal identity	X	X
Export map as web map and store in ArcGIS Online or Portal	X	
Publish a viewer as an application item in Portal for ArcGIS or ArcGIS Online	X	X
<b>Map Service Functionality</b>		
View multiple, concurrent services (mash-ups)	X	X
Render client-side graphics	X	X
Control map service and layer visibility (transparency cfg is in webmap)	X	X
Control scale dependency of basemaps	X	X
Toggle map contents in bulk by switching between layer themes	X	X
Group multiple services together into a single basemap	X	X
Support for feature clustering	X	X
Support for feature heatmaps	X	X
Apply field-based weighting to heatmaps	X	X
Support legends for heatmaps and clusters	X	X
Specify time extent on time-aware layers with time sliders (Esri time-slider in incubator)	X	partial
Dynamically symbolize layers based on attributes with class breaks and unique value renderers	X	
Dynamically modify layer labels - choose fields, fonts and styling	X	
Dynamically modify layer drawing order	X	
Automatically update layers on configured intervals	X	x (GXWF)
<b>Tools &amp; Features</b>		
<b>Map Control</b>		
Tile-based maps	X	X
Continuous panning	X	X

World wrap-around support (continuous panning around dateline)	X	X
Keyboard navigation	X	X
Configurable on-map display of copyright information and attribution	X	X
Right-click context menu (added support for touch devices)	X	X
<b>Navigation</b>		
Full & initial extent commands	X	X
Zoom to layer extent	X	X
Scale slider / zoom level	X	X
Zoom and pan tools	X	X
Bookmarks / jump to extent	X	X
Save bookmarks on the end-user workstation	X	X
Mouse wheel zoom / double-click zoom	X	X
Keyboard arrows for panning	X	X
Zoom and pan with hand gestures	X	X
Zoom to current user location using GPS, WiFi or IP	X	X
Follow current user location using GPS, WiFi or IP	X	X
Track current user location using GPS, WiFi or IP	X	X
Scale input box	X	X
<b>Widgets &amp; Controls</b>		
Base map toggle control	X	X
Scale bar	X	X
Bookmarks / jump to extent	X	X
Map tips / pop-ups (hover on top of features for data)	X	X
Mouse coordinates (XY location of mouse)	X	X
Aerial imagery basemap time slider - not yet (try layer comparison swipe tool)	X	
Time sliders for time-aware layers (Esri time-slider in incubator)	X	X
Ratio scale information and input box	X	X
Right-click context menu	X	X
Interactive overview map	X	X
<b>Layer List / TOC</b>		
Toggle map service and layer visibility	X	X
Control layer transparency	X	X
Organize and re-order layers and services into a custom structure with folders	X	via webmap
Show symbols for layers inline, or in a separate panel	X	X
Option to hide symbols for non-visible layers	X	
Standalone legend viewer	X	X
Respect group layers and group layer behavior	X	X
Respect map service layer visibility	X	X
Display graphics layers	X	X
Layer name aliasing	X	
Zoom to layer scale / layer extent	X	X
Toggle visibility of layer labels	X	X
Filter / search for layers	X	
Symbolize uploaded graphics layers	X	X

Group multiple layers into a single "composite" layer to toggle visibility of multiple layers at once (layer list component in GXW Designer)	x	x
Support "radio button" style layer visibility so only one layer can be visible at a time within a group (layer list component in GXW Designer)	x	x
<b>Application Interface / Layout</b>		
Dynamic, explorable UI hides and shows relevant components when needed	x	x
Configurable welcome / intro panel describes application purpose	x	x
Application splash screen configurable per-viewer	x	not planned
Completely customizable "wireframe"-based layout	x	x
Configurable themes (colors and fonts)	x	x
Configurable banner, title page, toolbar, legend	x	x
Preconfigured toolbar options for full functionality	x	x
Quick "Google-style" search box in banner	x	x
Multiple toolsets (tool boxes)	x	x
"I Want To..." Menu	x	x
Resizable data frame supporting multi-view controls	x	x
Tabular report frame	x	x
Maximize report frame to cover map	x	x
Multiple views to support a variety of form factors (desktop view, tablet view, and handheld view)	x	x
Dynamic responsive layouts to form factors with support for multiple dedicated layouts		x
Accessibility (WCAG 2.0 AA Compliance) for users with disabilities	x	x
Complete keyboard interface navigation and keyboard tool usage support	x	x
Complete screen reader support	x	x
Application footer with configurable hyperlinks	x	x
Compact toolbar option for applications with a small number of tools	x	x
Multi-tool element for grouping tools that support multiple shapes	x	x
Context-sensitive toolbars that display when specific tools are activated	x	x
Keyboard skip link navigation	x	x
Right-click context menus	x	x
<b>Identify / Selection</b>		
Identify tool	x	x
Identify by rectangle	x	x
Identify by polyline	x	x
Identify by polygon	x	x
Select from multiple layers simultaneously	x	x
Zoom to selection	x	x
Launch reports and actions from identify results	x	x
Buffer identify results	x	x
Configurable map tips / pop-ups	x	x
Map tips drill down through multiple layers/features	x	x
Identify by freehand polygon	x	x
Choose identifiable layers	x	x
Buffer identify / select tools	x	x
Store selected sets	x	
Maintain multiple selected sets	x	

Union selected features / clear selected features	X	
Toggle selection highlighting, and buffer selection	X	X
Launch reports and actions from selection	X	X
<b>Search / Find</b>		
Index-based instant search results	X	GXS
Routinely scan map services and feature services for data to index	X	GXS
Sort search results by relevance to search term	X	X
Automatically and instantly display search results on the map	X	X
Display search hints while the user is typing	X	X
Search through one or more layers	X	X
Define simple or advanced queries with the dynamic query builder	X	
Create advanced queries that join expressions with AND as well as OR conjunctions	X	
Filter features in layers based on queries	X	
Configurable search input forms	X	
Geocode address / intersection	X	X
Support multi-line geocoders	X	X
Support secured geocode services	X	X
Reverse geocode (find address at location)	X	X
Locate lat / long, and locate coordinate	X	X
Search non-spatial data	X	X
Query non-spatial data with Query Builder	X	
Administrator defined queries	X	
<b>Displaying Attribute Data</b>		
Interactive feature list, details and tabular views	X	X
Dynamic list / table paging and sorting	X	X
Configurable map tips / pop-ups	X	X
Feature labels and descriptions for readability	X	X
Enhanced feature display including basic HTML markup	X	X
Display external images associated with features	X	X
Attribute aliasing and attribute visibility settings	X	X
Hyperlink attribute values	X	X
View results for multiple layers simultaneously	X	X
Configurable "per-feature" hyperlinks (to external content)	X	X
Launch feature report	X	X
Display related, non-spatial data	X	X
Display data from ArcGIS Server Relationship Classes	X	X
Display / download feature attachments	X	X
Display coded value domains	X	X
Supply field value formatting for dates and numbers	X	X
Convert dates to local timezone	X	X
Configurable field order in list and tabular display of attribute data	X	X
Verify hyperlinks before displaying to user	X	
<b>Markup / Drawing</b>		
Markup by Point, Line / Polyline and Freehand Line	X	X
Markup by Rectangle, Square, Circle (no Oval or Arrow supported in Esri API yet)	X	X

Markup by Freehand Polygon	X	X
Markup by Text	X	X
Move markup, and vertex of markup	X	X
Fill / line / point type, text color and transparency (point still coming)	X	X
Boundary color / width / type / transparency	X	X
Extract markup to Shapefile	X	X
XY Coordinate Markup	X	X
Choose markup symbology	X	X
Configure detailed markup symbols including boundary and fill options	X	X
Undo and redo markup actions >> z undo last vertex   r redo last vertex	X	X
Single-click on markup features to begin editing them (can be configured)	X	X
<b>Analysis Tools</b>		
Measurement tools	X	X
Measure line / measure area	X	X
Measure rectangle, circle, oval, freehand line and freehand polygon	X	X
Change measurement units	X	X
Display measured perimeter	X	X
List shape measurements in a tabular grid	X	
Display linear segment angle and bearing	X	
Export shape measurements to CSV	X	
Zoom-to-coordinate tools	X	X
Plot coordinates in map units / DD / DMS	X	X
Re-project coordinates	X	
Support coordinates with any coordinate system that uses a WKID	X	X
Support coordinates using MGRS and USNG	X	X
<b>Charting</b>		
Configuration of multiple charts on a layer-by-layer basis	X	X
Support for pie charts	X	X
Support for linear charts (scatter plot, line, bar, spline, etc.)	X	X
Display of chart for a collection of features	X	X
Display multiple charts at once	X	X
Display a chart for an individual feature	X	X
Configure which chart(s) to display	X	X
Configure chart styling (colors, legend, titles, fonts, etc.)	X	X
Chart components highlight data on the map	X	X
KPI indicator cards		X
<b>Editing</b>		
Editing of features belonging to a spatial feature class	X	X
Create spatial features (points, polylines, polygons)	X	X
Create point-based features using geolocation/GPS	X	X
Move / modify / delete spatial features and vertices	X	X
Edit feature attributes one feature at a time	X	X
Add attachments to features	X	X
Use subtypes, domains and field validation feature editing forms	X	X
Add, edit and delete related records associated with editable feature layers	X	

Union and cut geometries	X	
Union and cut geometries APIs	X	
Snapping	X	
Edit feature attributes within a data grid	X	
<b>Printing</b>		
Invoke GP5 printing	X	X
<b>Reporting</b>		
Invoke GR5 report from features	X	X
<b>Workflow</b>		
Run GW5 workflows	X	X
Execute ArcGIS geoprocessing task / model	X	X
Prompt user for inputs to geoprocessing task	X	X
<b>Save / Open Project</b>		
Save current application information	X	X
Save feature selections	X	X
Save graphics / markup / drawings / map extent / map service visibility & transparency	X	X
Save layer visibility	X	X
Share projects with URL (currently file based)	X	
Save project files privately (don't share with others)	X	X
Open previously saved projects	X	X
Filter between private, public and all saved projects	X	
Choose group-level and user-level permissions for saved projects	X	
Manage saved projects on the server	X	
<b>Download / Extract Data</b>		
Extract feature geometry and data workflow (clip, zip & ship) >> fme activity pack	X	X
Extract features to Shapefile	X	X
Extract features to File Geodatabase (GDB)	X	
Extract features to CAD formats	X	
Extract raster data to a variety of raster formats	X	
Clip geometry to current extent, or user-defined geometry	X	
Extract / copy map image	X	
Extract feature attributes to excel files (XLSX and CSV)	X	X
Extract data from related records and data links to excel files (XLSX and CSV)	X	
Extract markup to Shapefile	X	X
<b>Upload / Import Data</b>		
Attach files and images to features from mobile devices	X	X
Upload Shapefile to dynamic feature layer	X	X
Upload CSV file to dynamic feature layer	X	X
Upload address file (Excel or CSV) and perform batch geocode	X	
Upload FileDGB to dynamic feature layer	X	
Upload KML to dynamic feature layer	X	
Upload GPX to dynamic feature layer	X	



Search and identify data in uploaded layers	x	x
Search, discover, dynamically add WMS layers, ArcGIS Server map services and feature layers	x	x
<b>Data Linking</b>		
Connect layer features to external, non-spatial data sources	x	
Support for all ADO.NET data sources (Oracle, SQL Server, XML files and others)	x	
One-to-one and one-to-many relationships	x	
Many-to-many and many-to-one relationships	x	
Display data links in dynamic list report / table report	x	
<b>Collaboration</b>		
Real-time, map-based collaboration tools	x	not planned