Release guide

M.App Enterprise 2023

Version 16.8.2287.0

4 October 2022

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About this release

This document describes the enhancements for M.App Enterprise 2023. The information in this document is current as of the product release. For the most current version, visit the Support Portal.

This release includes fixes and enhancements to M.App Enterprise 2023. For information on product fixes, please review the “Issues resolved” section. For information on enhancements, read the “New technology” section.

This document is only an overview and does not provide every detail about M.App Enterprise’s capabilities. For additional information about M.App Enterprise, please read our online help and other product documentation.

Important Note

As announced in the previous release, configurations/apps based on Leaflet (browser and feature analyzer) are no longer working in M.App Enterprise 2023. The only option is to delete them from your list(s).
Spatial Workshop will be deprecated in the M.App Enterprise 2024 release. This will be replaced by the new Geoprocessing setup/front end.

New platforms: M.App Enterprise 2023

.NET Framework 4.8

Among other things we upgraded the .NET framework to version 4.8 because of the latest security standards like TLS 1.3.

Microsoft Windows® Server 2022

Windows® Server 2022 is now also officially supported in M.App Enterprise. Test cycle was successfully completed since the official release of the server OS beginning of October 2021.

Microsoft Windows® 11

Windows® 11 is now also officially supported in M.App Enterprise. Test cycle was successfully completed since the official release of the server OS beginning of October 2021.

Java 18

This major version of Java is now also officially supported in M.App Enterprise. Test cycle was successfully completed since the official release of the software mid of April 2022.

New technology: M.App Enterprise 2023

General

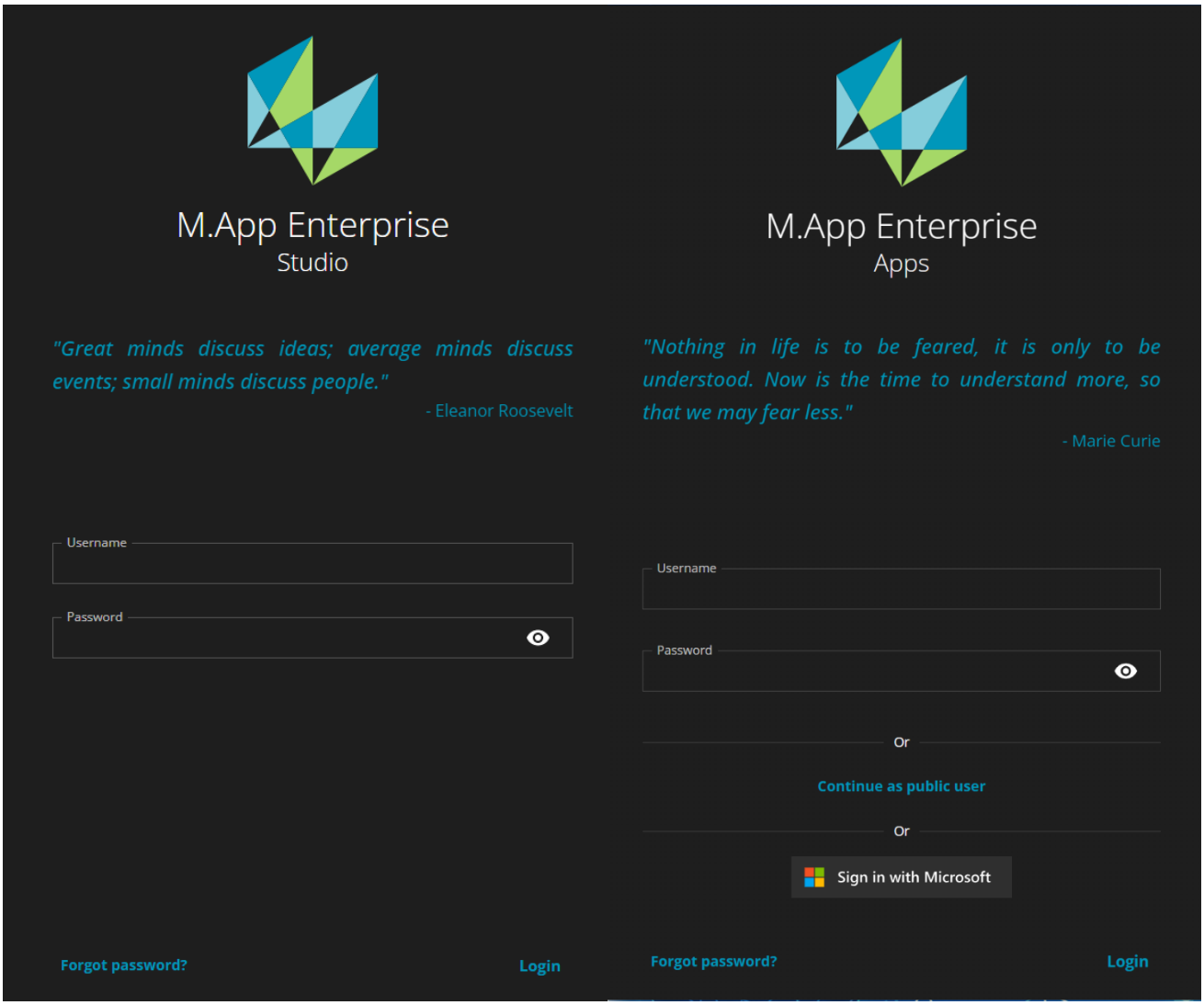
Community ideas

As always, we looked at the ideation board, took some ideas from there and implemented them into the core platform of M.App Enterprise. For the release of M.App Enterprise 2023 the following ideas were picked:

- MAE Browser/Analyzer View: User defined date/time filtering (see Date Widget Enhancements)
- Ability to clone apps in M.App Enterprise (see Clone button)
- MAE Browser/Analyzer View: Re-add support for Tile Servers in RIA maps (see Support of TMS)
- MAE Browser/Analyzer View: Re-add support for multi-selection tooltips in RIA maps
- Feature Analyzer: WMS GetFeatureInfo (available for all browser-based apps; see GetFeatureInfo on WMS)
- Show thematic legend classes in map (see Thematic legend entries)
- Option to add a legend to the Feature Analyzer M.App (see Dashboard and Thematic legend entries)
- Configurable Legend Widget for browser applications (see Thematic legend entries)
- Feature Analyzer - One-to-Many relationship support (see Dashboard)
- M.App Enterprise Desktop: Fit to Layer (see Fit to layer extents)
- Selection Style missing in Browser App (see New code snippets)
- Style Editor: Background and scale (see Style Editor improvements)
- Feature Analyzer: Ability to choose European notation in the "Number Display" Chart (see Dashboard)
- Redesign user settings in M.App Enterprise Management/Studio and Apps page. (see New user menu)
- Displaying measure values in cluster, not only feature count. (see Dashboard)
- Feature Analyzer: Detects the current location of the user (see Dashboard)
- Feature Analyzer: Change styling of Tooltip (see Dashboard)
- Feature Analyzer: Measurement Tools (area, length, etc) (for drawing lines/polygons see Dashboard)
- Thematic setup in M.App Enterprise (see Style Editor improvements)
- Saving project area (lower/upper corner) (see Clone button)
- Anonymous Role to access MAE-Apps (see Support of Public Apps)
- Open Workflow-form via RIA map (see ActionSets in browser)
- MAE – STUDIO: Option to duplicate entries across studio (see Clone button)

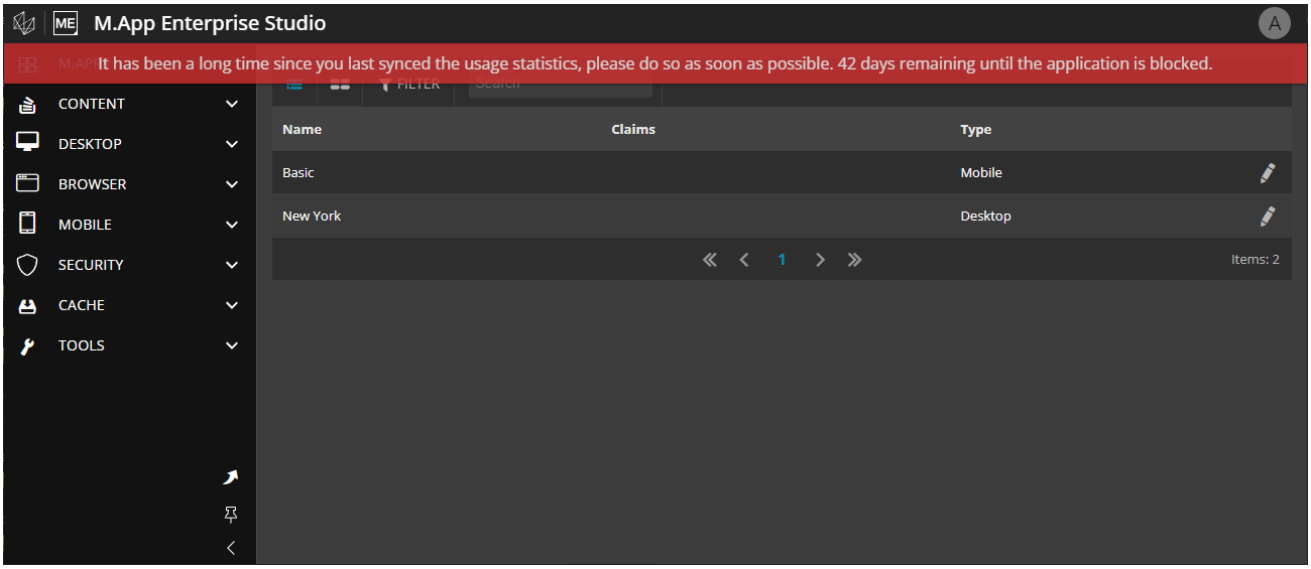
New log-in page

When you first open the Management/Studio/Apps page after the upgrade to M.App Enterprise 2023, you will see the first big change in the design/layout of the new version, namely the login page, which got a complete overhaul in this major version of M.App Enterprise.



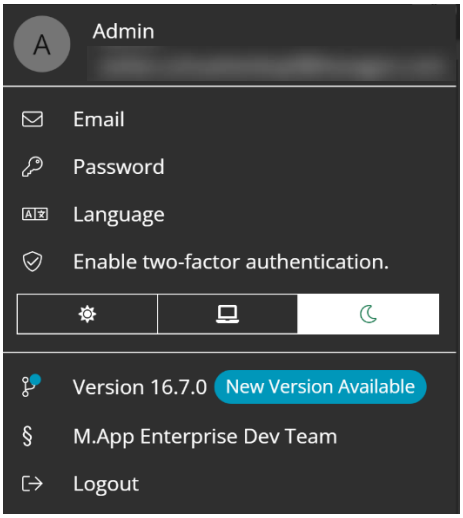
In addition to the quotes, which appear in a random order, you will also be allowed to log in as a public user, which gives you access to all browser and desktop-based applications without log-in credentials. See **Public Apps**.

New license warning banner



With the new release, we introduced a new license warning banner. If you move your mouse near the banner, it will disappear; otherwise it will be present. The banner gives you a better understanding of when your application will be blocked by showing your application's remaining days.

New user menu



The new user menu got a complete overhaul from a design and functionality perspective. Initially, only the avatar/first letter of the username is visible. After you click on the avatar, the entire user menu opens underneath with an overlay window. Every available action now has an icon, including and the theme (dark, system or light) having icons instead of a drop-down list. The license information also switched from the outside to the inside of the user menu.

New information is also available to the user – especially for the Studio Administrator and the Management user. These "special" users can see the version of M.App Enterprise installed on the server and if a new version is available.

Support of public apps

M.App Enterprise 2023 gives you the opportunity to create public apps. These public apps are available to everybody who accesses the “MyApps” page without any log-in credentials. In the App creation (Browser or Desktop) you will find the “**Public”** checkbox.

Note: Mobile public apps are not supported.

Direct access to apps

If non-public apps/private apps are shared via a URL (button is on the “MyApps” page) and you are not logged in, when opening the URL, you will be redirected to the log-in page of M.App Enterprise, and as soon as you click the “**Login”** button, you will automatically get forwarded to the App itself.

Improved theme support across all components

All branding (primary/secondary colors) and theming is unified across all components/clients. See **Desktop client enhancements**.

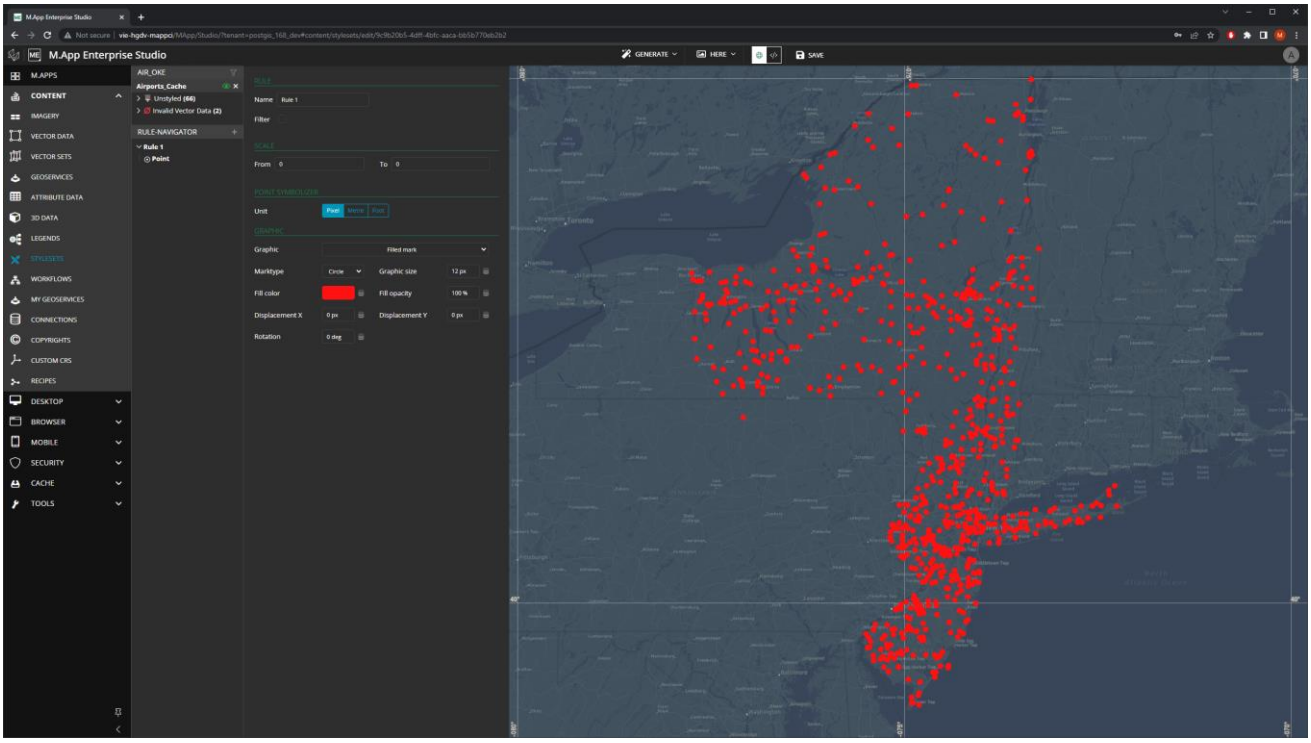
New data format support

- HSPC: To add Hexagon Smart Point Clouds (HSPC) data to your (browser) app, you can add a code snippet to the JavaScript section of your browser app. The only thing you must change is the service endpoint coming from LuciadFusion.
- ECWP: To add ECW images to your app, you must create an ECWP service endpoint in LuciadFusion. Then you switch to “**Geoservices”** in M.App Enterprise Studio, select “ECWP” in the drop-down menu and select the corresponding service endpoint in “**FusionGeoservices.”**

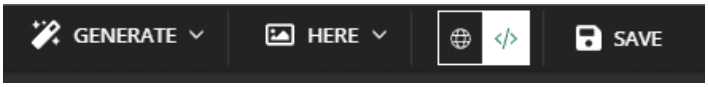
Style editor improvements

There are several improvements for the style editor in this release. For example, it is now possible to add one **background layer** of your “**GeoServices”** list.

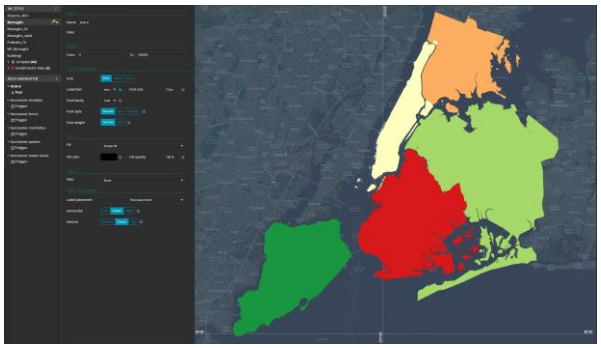
Note: It is not possible to combine several of the available list.



Because the layout/design is harmonized throughout the entire platform, “StyleEditor” is no longer a separate tab, but opens inside the M.App Enterprise Studio to increase usability. In addition, the header bar of style editor got flattened with new icons and a new switch between the Map/XML view.



Both views are always synced so a flawless change of the visual or programmatic approach is given.



You also get a validation of your XML, and if it fails you can undo your changes and go back to the last valid state.

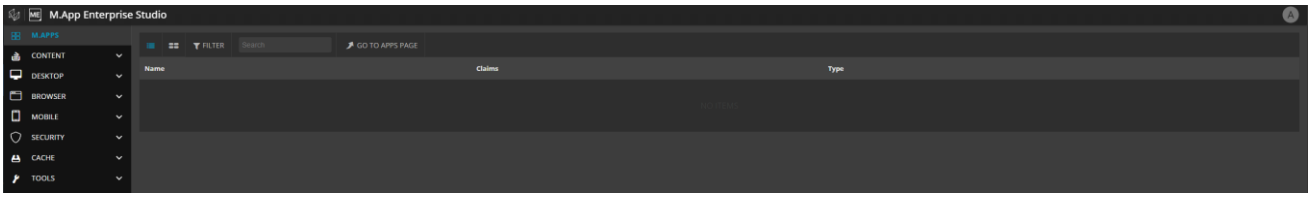
Studio

New UI/UX in Studio

The most obvious change between previous versions of M.App Enterprise and the newest release is that the header bar has changed significantly.

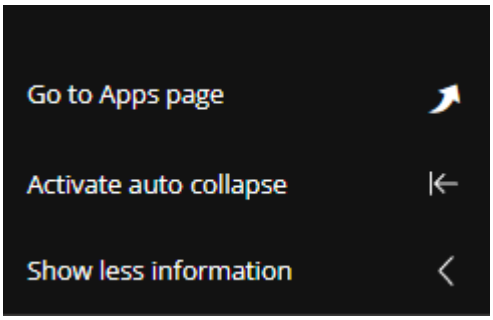
Old:

New:



The main categories switched from top to the left, and instead of clicking on the “main” category and the sub menus opening on the left side, the new UI opens every submenu underneath the “main” category. A new user menu is also introduced with this new version. See **New User Menu.**

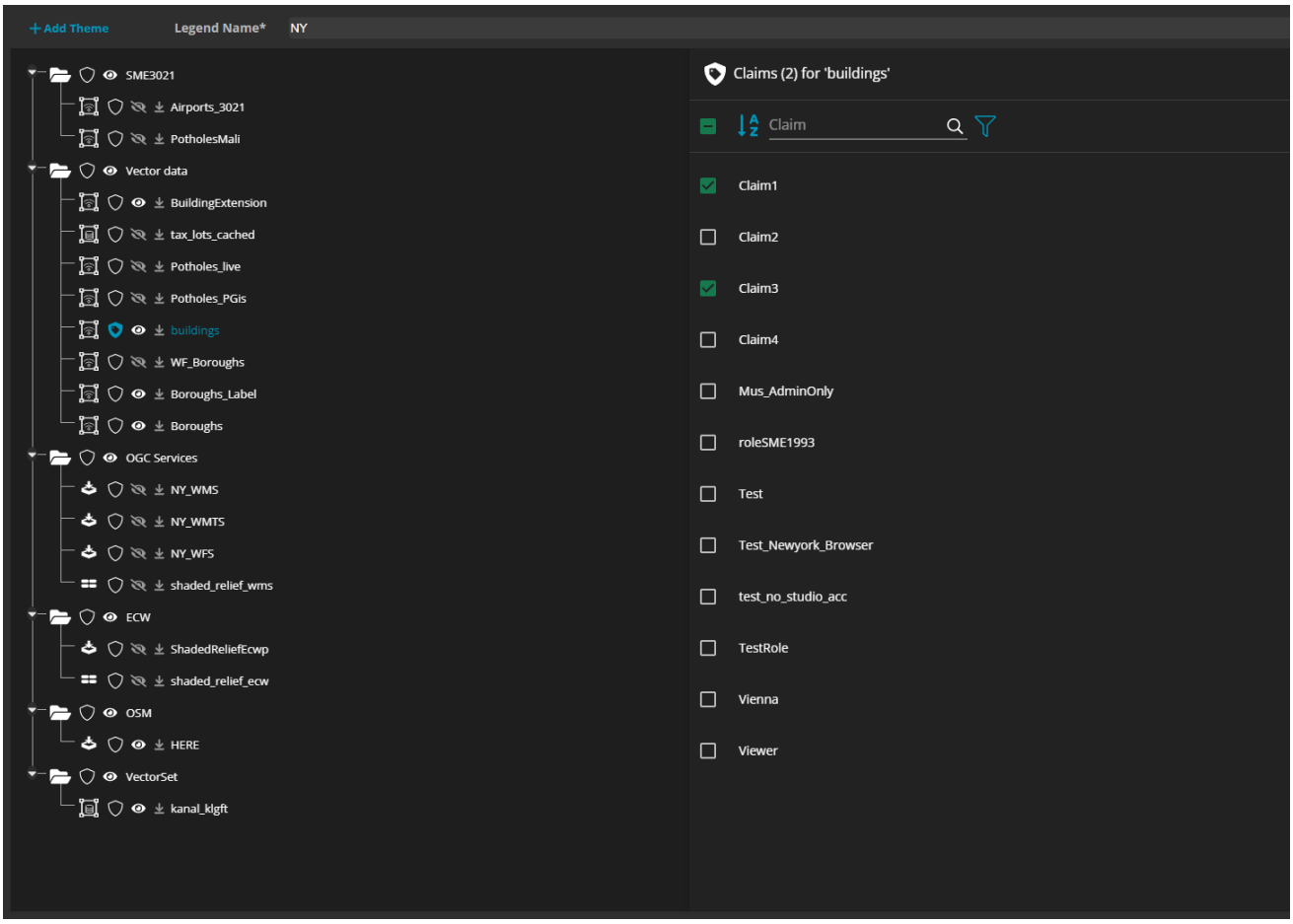
The newest release also offers the possibility of collapsing the user menu to the left. This gives you more space for your content and especially comes in handy when using the style editor in 16.8. Besides that, you can also pin the settings for your menu width and start the “My Apps Page” (See screenshot below.)



The overall user experience is improved and the number of clicks to get the same result is again reduced.

Roles and Claims

In M.App Enterprise 16.8, “Claims” are introduced. Explained simply, they will replace “Roles,” but they have more power. Until now you had to create the same legend twice to hide one layer, which is an administrative effort. But with this release you can use the same legend and set a claim for this one specific legend entry.



Besides layers in legends, the claims are also available for:

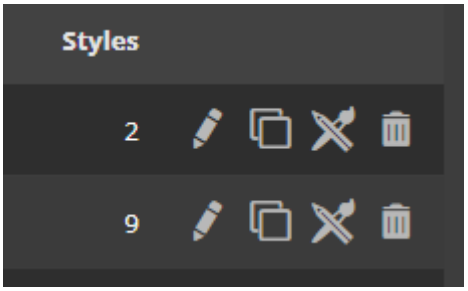
- Actions
- Mobile elements (fields, menu items)

Support for TMS

One of the most requested features from the ideation board is accessing any Tile, Map, Service (TMS). So, in 16.8, if you provide the URL and any necessary subdomains to the TMS, you can use it in all the clients and as a background layer in the style editor.

Clone button

This feature also came from the ideation board and allows the studio administrator to copy and paste existing style sets without starting from scratch every time.



The following parts within the M.App Enterprise Studio can be cloned:

- Legends
- StyleSets
- Workflows
- Action Sets (Desktop and browser)
- Dashboard
- Browser Map Views
- Browser M.Apps
- Desktop M.Apps
- Mobile Shells

Note: Only cloning within the same tenant is possible. No copying and pasting to other tenants/servers.

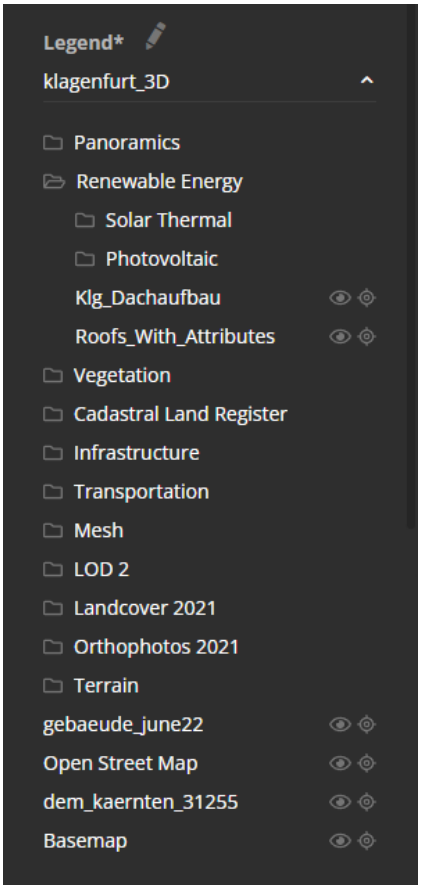
Custom number formatting

With the release of M.App Enterprise 2023, it is possible to put custom number formatting (numbers and date) into the tooltip in the "**Vector Data"** form.
You can put it directly within the placeholder e.g., *{ENTITY.latitude:0.00}*

Number format	Input	Output
00000	-1234.567	-01235
0000.000	-1234.567	-1234.567
##	-1234.567	-1235
##00	0	00
.00	-0.123	-.12
0.00	-0.123	-0.12
#.#	-1234.567	-1234.6
#.#####	-1234.567	-1234.567
.#####	-1234.567	-1234.567
#.000000	-1234.567	-1234.567000
#,###,###	-1234567.890 -1234.567	-1,235
'#'#	-1234.567	-1,234,568
'text'#	-1234.567	-#1235
yyyy-MM-dd HH:mm:ss	20220805110000	2022-08-05 11:00:00

Legend improvement in MapView definition

With the release of M.App Enterprise 2023 it is now possible to set layers within the MapView definition of your browser application to visible/invisible.



Note: The icons only appear as soon as "Preview" is checked, and you are getting content for your browser application.

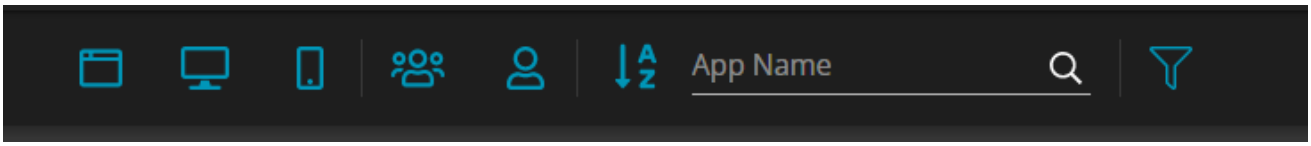
MyApps page

The “MyApps” page got an entire overhaul in the latest M.App Enterprise release.

One-page approach

Paging is gone in this release. This means every app the user has access to is available on one page. If you scroll down far enough, you’ll see a blue arrow icon on the right side to instantly jump back to the top of the “My Apps” page.

New filter design



Starting from the left you can filter per app type:

- Browser
- Desktop
- Mobile

Then the second possibility is Accessibility:

- Public (App access without log-in credentials)
- Private (App access with log-in credentials)

You can also sort alphabetically ascending or descending, search for specific apps or reset the filter completely (the last button).

If a specific app type is not available, the button will be grayed out.

Loading animation

It’s possible that the app (image) could take too long to load. For this reason, you will see at the bottom of the app thumbnail an animation which indicates that a loading process is happening.

Gradient fill on top of thumbnails

Every thumbnail in this release gets a gradient fill on top of the image. Depending on the hover state it is either green to white or white to blue.

Not hovered thumbnail:

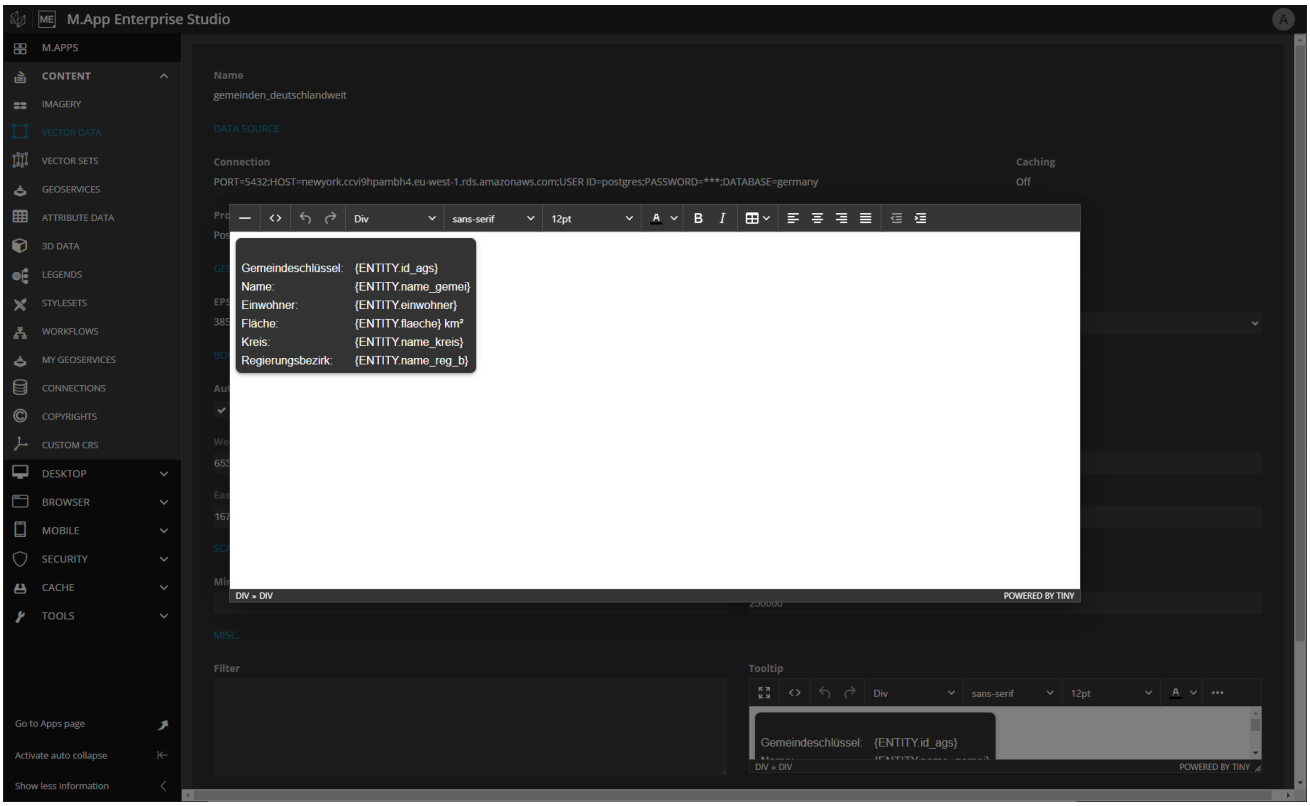
Hovered thumbnail:

TinyMCE update

The WYSIWYG editor for tooltips, “GetFeatureInfo” for WMS and within the M.App Enterprise Dashboard got an update in this version of M.App Enterprise.

There are some big advantages for the Studio administrator:

- Newest version of TinyMCE with the latest functionality and biggest customization available
- Possibility to pop out the entire editor

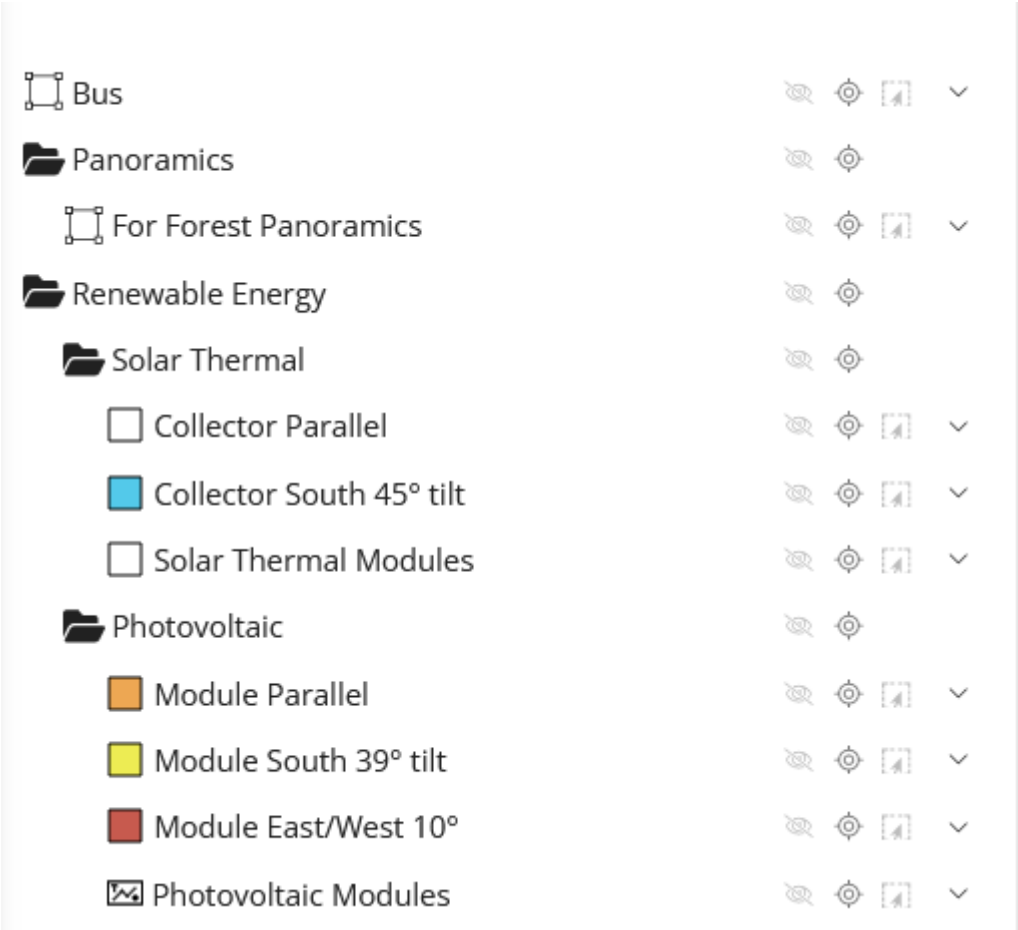


- The limitation of showing only 10 columns from the database is gone. Now you will see all available columns from the database.

Browser application

Thematic legend entries

With the release of M.App Enterprise 2023, we also support thematic entries in browser-based applications.

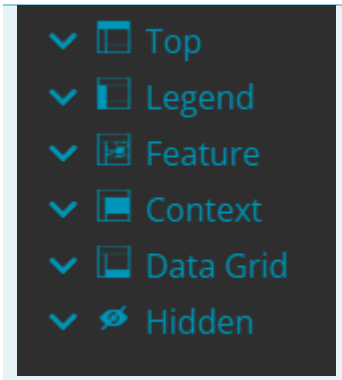


Note: Visible styling is limited to Stroke and Fill color.

ActionSets in browser

The newest release of M.App Enterprise introduces action sets for browser-based applications. There are some differences/restrictions between the desktop and the browser action sets.

The biggest and most obvious difference is the lack or change of some locations of the actions themselves. In the desktop client, you can start the action in the top bar/header, but the browser doesn't have the header bar so the browser action can be started in the toolbar/menu. You can also find the "Layer Tree" and all the other tools you have enabled in the M.App Enterprise Studio for this specific browser application. Because of the lack of the "Data Grid," we are not supporting this location in the browser application, but the rest is working as you are used to from the desktop client.

Desktop	**Browser**
	

There are also some restrictions on the functionality of the browser-based actions compared to the desktop side.

Only working SC.digitize Methods:

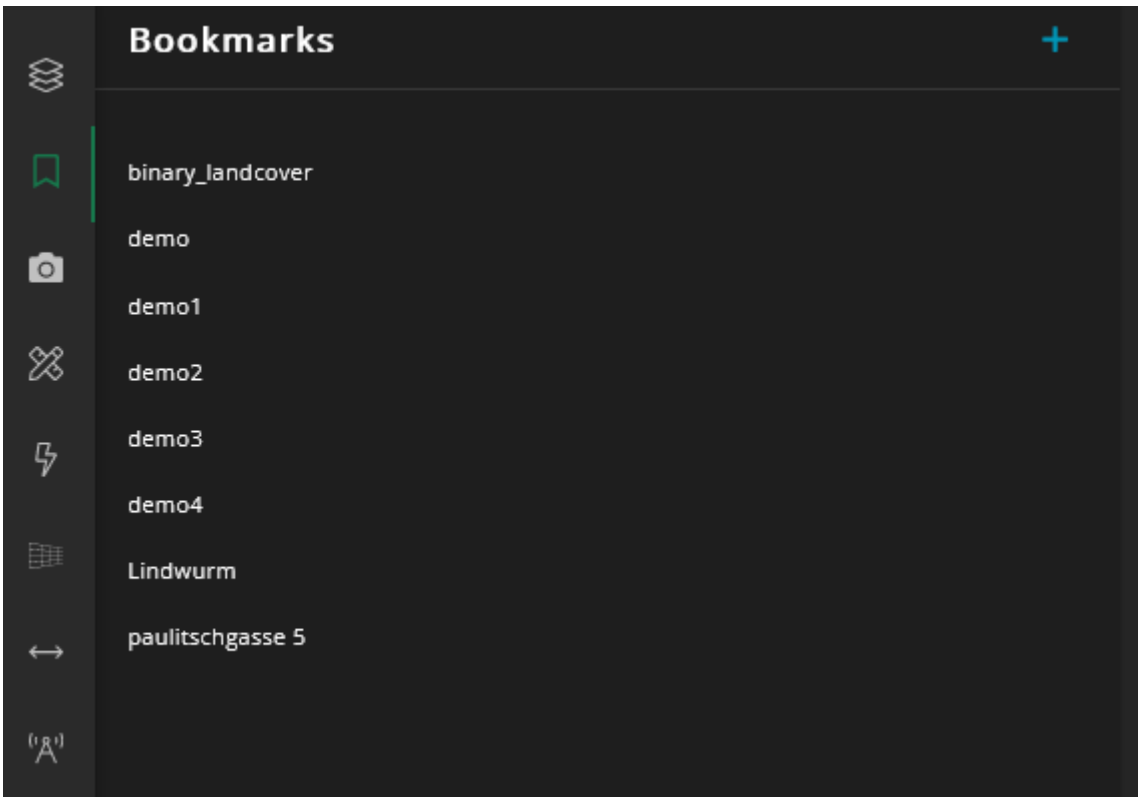
- GE_NewPoint
- GE_NewPolyline
- GE_NewPolygon
- GE_Modify
- GE_Move
- GE_Delete

And

- SC.Fit

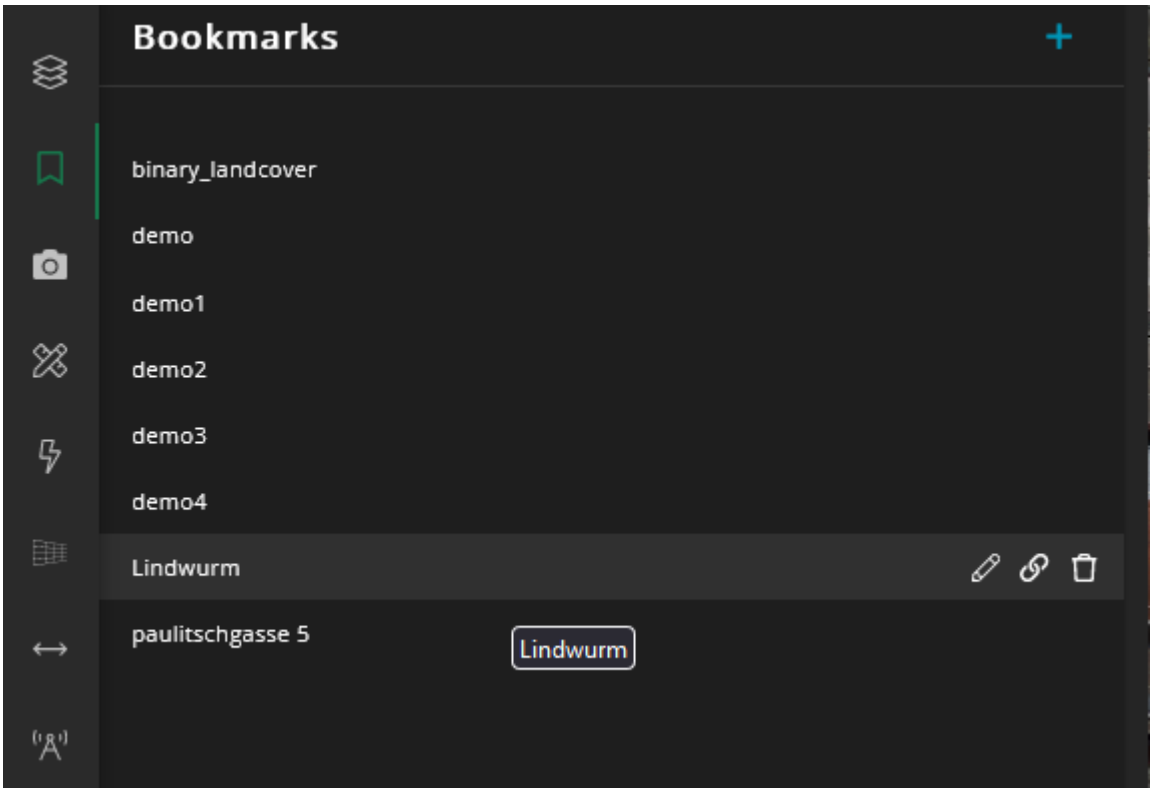
Bookmarks

Bookmarks are always available for all users with log-in credentials. Public users won’t get access to the “Bookmarks” section in the toolbar.



With the “+” symbol, you can add new bookmarks and then save the state of the map.

After saving, you have three more options for the bookmark.



You can edit the bookmarks and rename them or save a newer state of the map. If a new state of the map should overwrite the existing one, you must click "**Capture Map State"** and then on the "**Save"** icon to save every change. You can also share the link with other people.

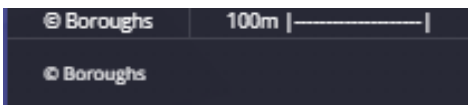
Note: The users you share the bookmark with need access to the same app.

And finally, you can delete the bookmark you've created.

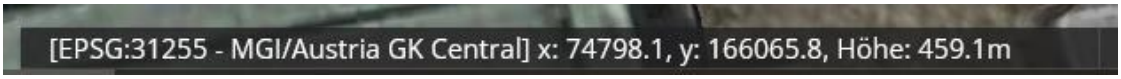
New code snippets

With the latest release of M.App Enterprise some new code snippets were added for the administrator:

- Add a copyright notice (adding copyright information to the status bar)



- Get mouse location (showing coordinates of your mouse in the status bar in a supported CRS)

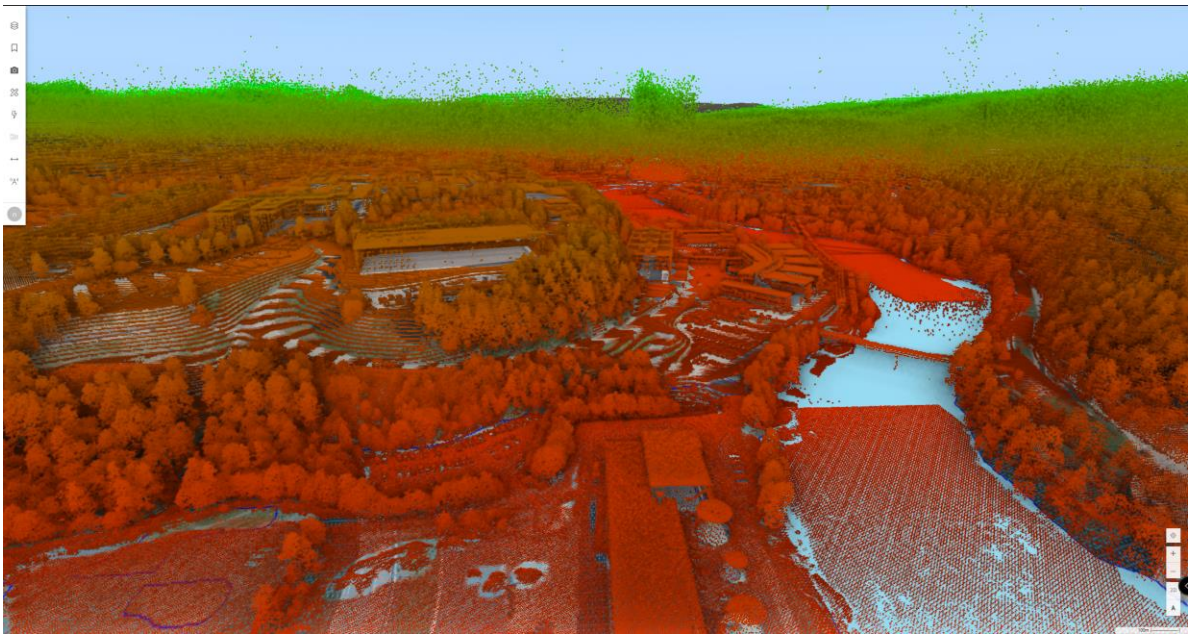


- Address search (full-text search based on addresses/locations in your database)

- Change selection style (possibility to overwrite the default selection style in the browser environment)
- Simple Header Markup (access to M.App Enterprise styling for your panels)
- Simple Header Style (access to the M.App Enterprise parameters for styling your panels)
- Define Basic Classes for Color (possibility to overwrite the primary and secondary colors for your panels)

- Point Clouds (Classification and Styling)

Classified point cloud based on attributes within the data



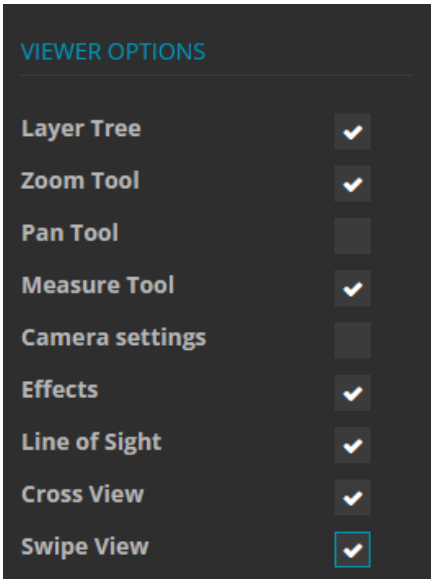
Styled point clouds based on the height of the point

New status bar

The status bar changed for the browser application in M.App Enterprise 16.8. The mouse coordinates with code snippets as you like to design it with additional copyright information and a fixed scale bar.

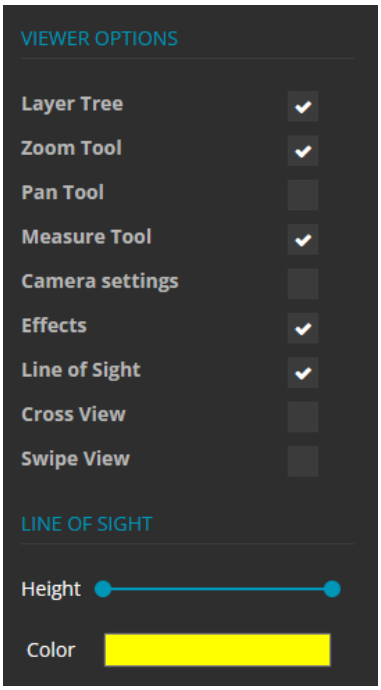
New toolsets (Cross-, Swipe View, Line of Sight)

All new toolsets can be activated in the “**Map View”** definition of your browser app:

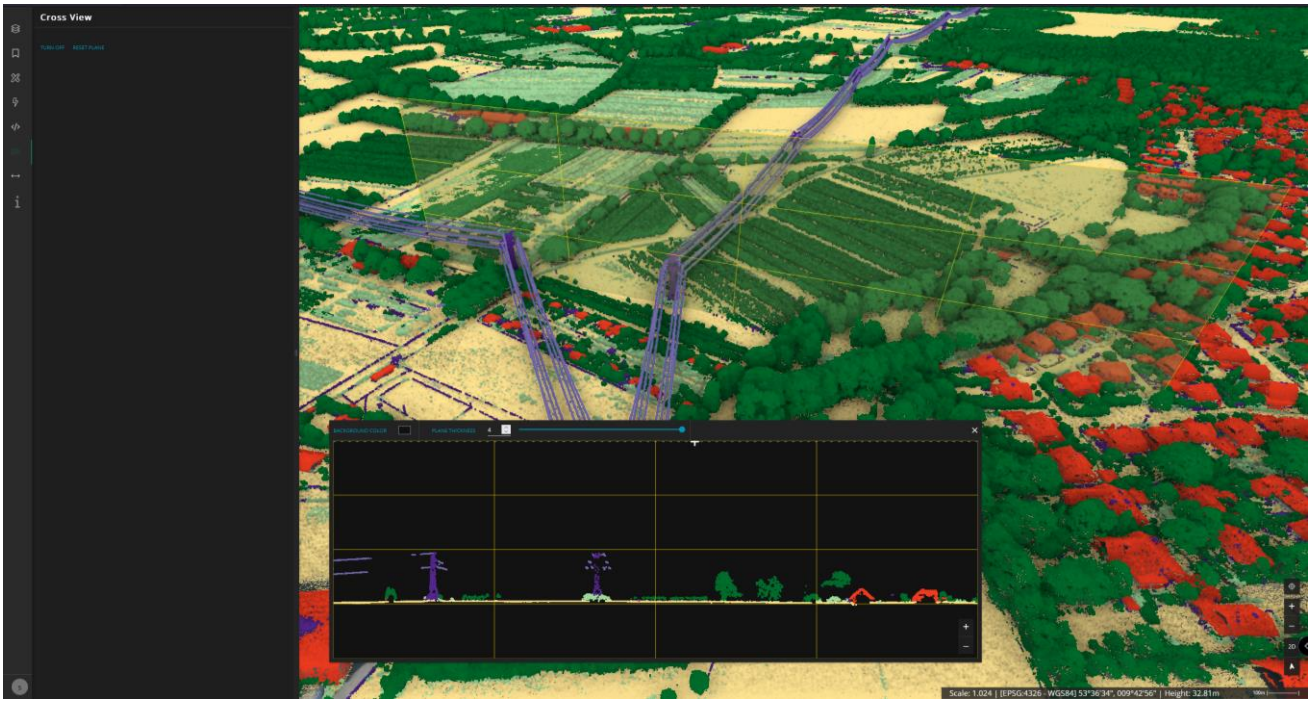


“Line of Sight” allows you to get information about what is visible from a specific point in the map with a specific height:

The color of the circle is defined in the studio and the range of possible heights:



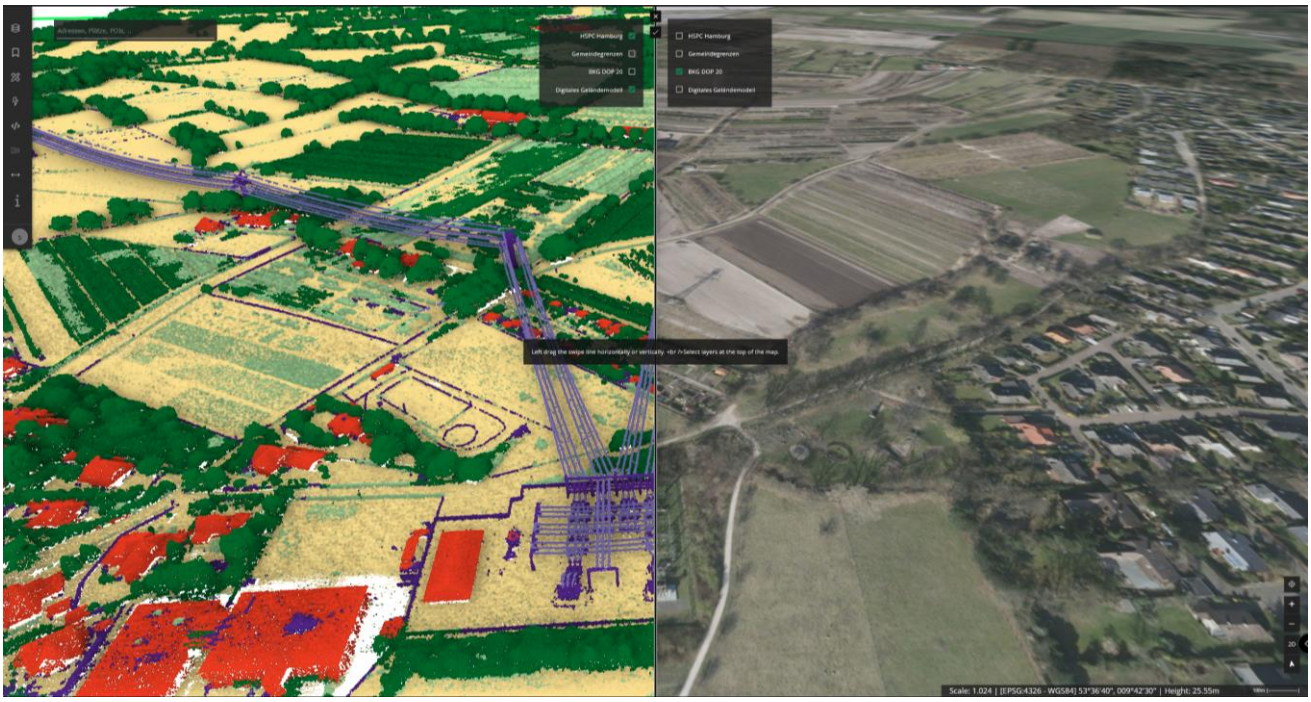
“Cross View” allows you to “cut” through the map and see, in a separate window, what the “cut” planes hit in the map.



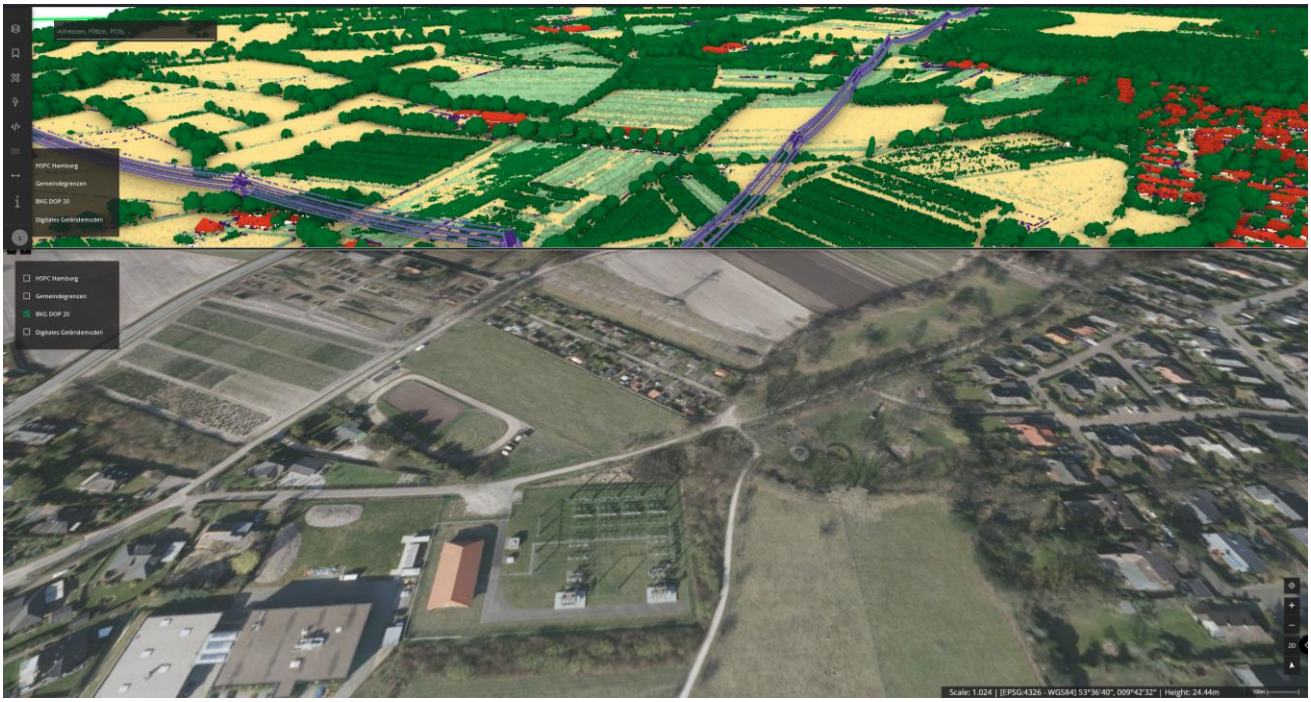
You can move the plane, make it bigger and even make the lines within the separate window thicker or thinner. On top of that, it is also possible to change the background color of the window of the cross view.

“Swipe View” allows you to separate the map view temporarily in two different views, where you can decide per window which layers should be visible.

Vertical split:



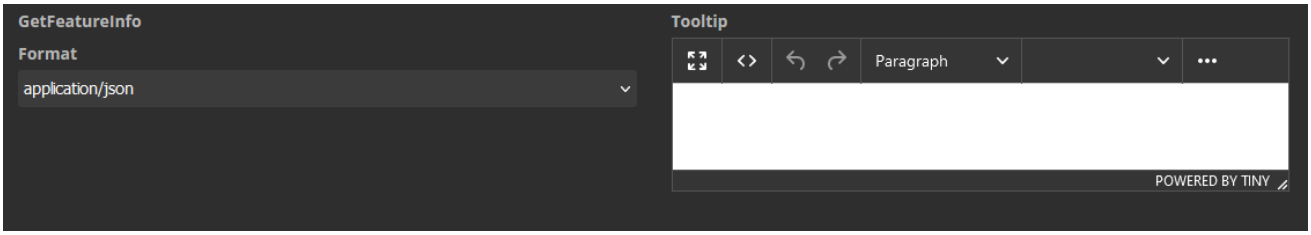
Horizontal split:



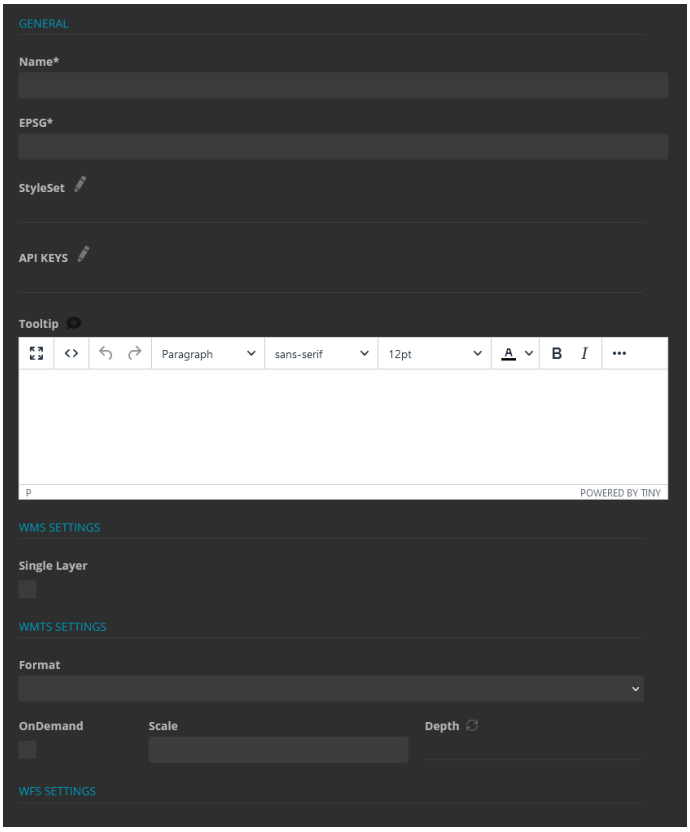
GetFeatureInfo on WMS

If you are connecting to a WMS, you can choose the “FeatureInfo” as a tooltip in the browser application. The drop-down list is automatically filled with the options the service is giving back.

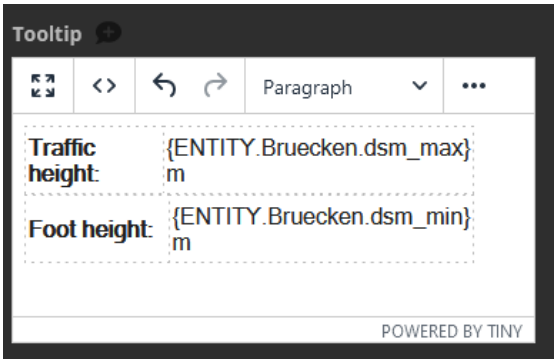
If “**application/json”** is selected, you can also define your own tooltip and layout/design of it.



If you are using “**MyGeoservice”** you can define your own tooltip.



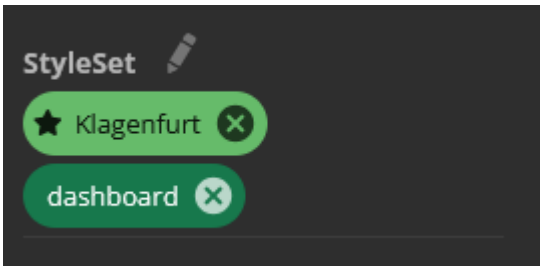
If you click “**Add layer tooltip”** the tooltip from the vector data is taken over to this tooltip editor and automatically set to a readable format.



Note: Don’t worry, the placeholder here looks a little bit different {ENTITY.LAYER.COLUMN} vs. to the layer tooltip {ENTITY.COLUMN}.

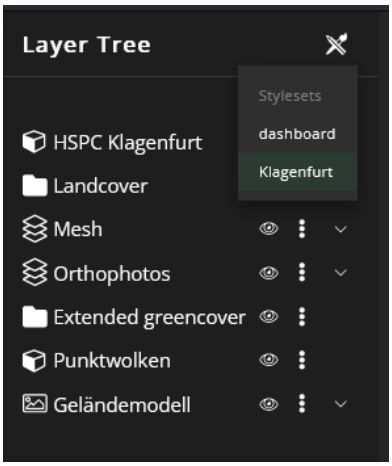
Support of more than one stylesets

With M.App Enterprise it is now possible to assign more than one styleset to your browser app.



“StyleSets” marked with an asterisk are loaded by default when the app is opened. Additionally, the background color of the default “StyleSet” is a lighter green.

In the browser app itself all “StyleSets” are listed alphabetically, and you can switch between all assigned “StyleSets.”



New custom camera control

The newly written custom camera controller allows you to limit your pitch angle and your flight heights of your camera.

Somewhere in your custom script you would have something like:

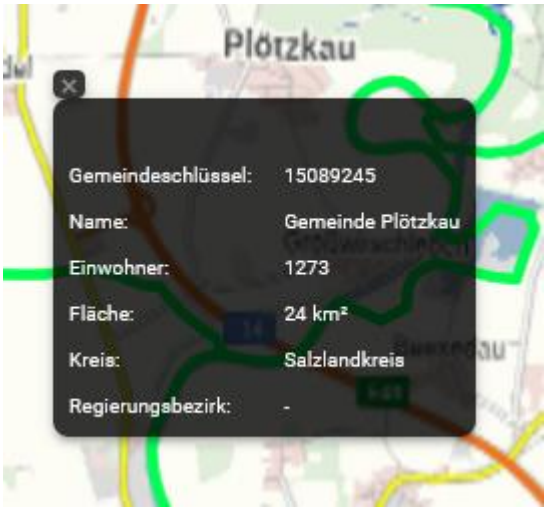
```
ready(() => {
main();
}
```

Then you would be able to customize it with:

```
window.map.stores.navigation.pitchBounds3D = {minPitch: -90, maxPitch: -40};
window.map.stores.navigation.altitudeBounds3D = {minAltitude: 30, maxAltitude: 2000};
```

Close button on all tooltips

Every tooltip now has a close button to forcibly close the tooltip.

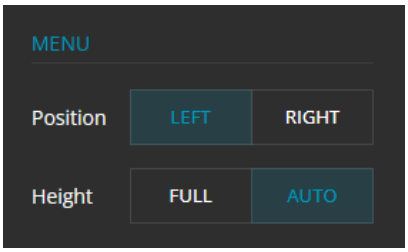


New options for menu bar

In M.App Enterprise 16.8 we are offering new options for your menu bar in the browser application (browser and dashboard).

You can select the side of the menu bar, especially of interest for your dashboard definition. And you can select if the menu bar should be full or content height:

Note: If anything from the menu bar is opened e.g., "Layer Tree," the menu bar always goes into full height mode during the time you are working there.



Dashboard

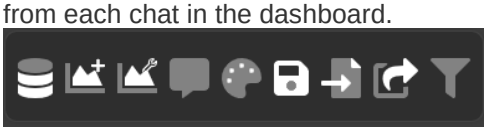
This version of M.App Enterprise has renamed the “Feature Analyzer” component to “Dashboard” in the platform.

Map View replacement

Leaflet has been retired in this version, and M.App Enterprise Dashboard is exclusively using the standard M.App Enterprise Browser Map/LuciadRIA. Your “Leaflet Map View” widgets will be automatically migrated to LuciadRIA when it is first opened. The migration process is mostly automatic. “Standard Browser Map” functionality will now be available in “Dashboard” features such as “Map View” configuration and “Create/Edit” support.

New Dashboard configuration

The dashboard configuration slide-out has been replaced with a new, intuitive configuration mechanism. General configuration is now accessed through a launcher bar. Individual chart configuration is now launched from each chat in the dashboard.

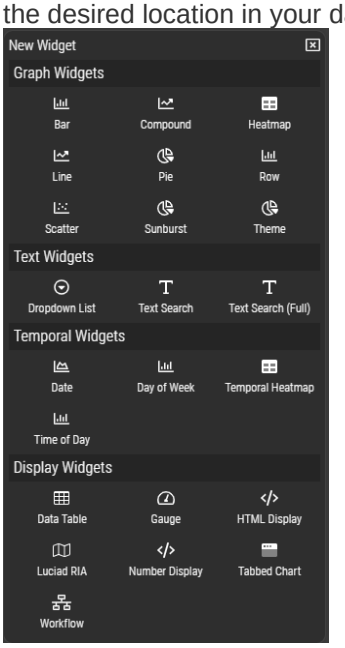


Much of the functionality that was on the configuration menu is now on the launcher bar.

- Dataset Configuration

  The same dataset configuration found in previous versions can be now found here.
- Add New Widget

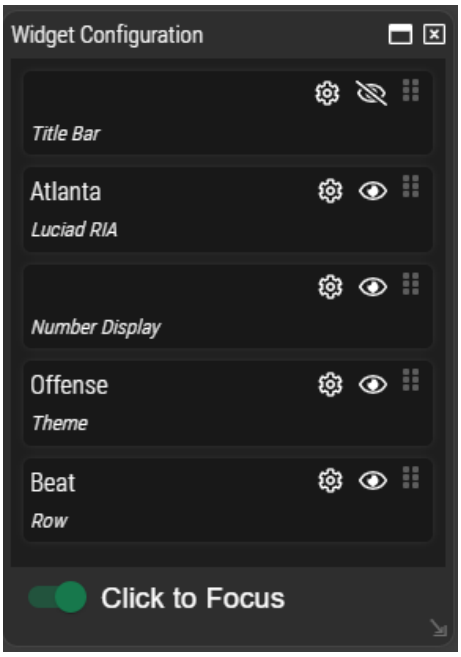
  The “Add New Widget” replaces the “Add New Chart” section on the configuration slide-out. If you click on it, you will get a list of all available types and you can either click on one of them or drag it to the desired location in your dashboard.



- Widget Configuration

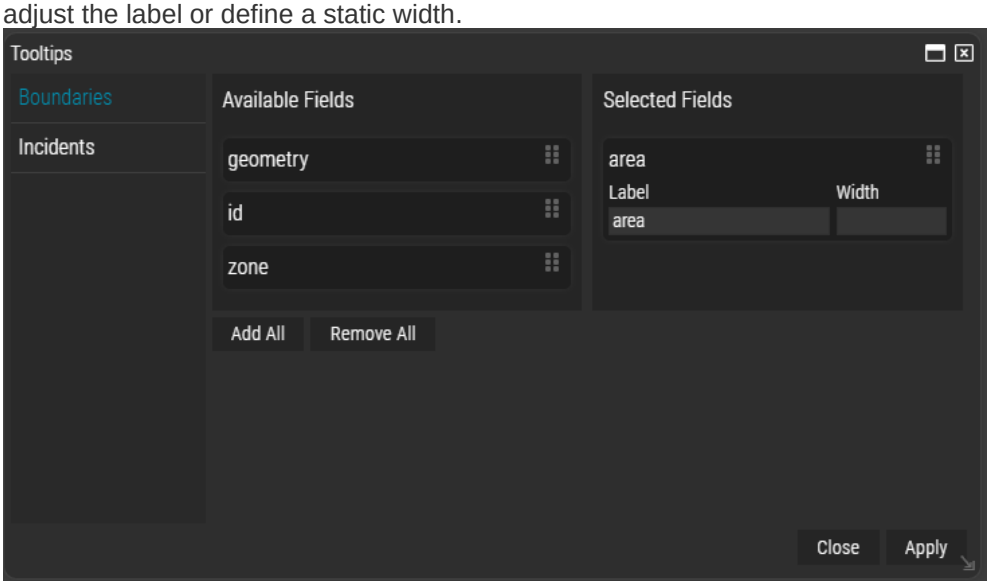
“Widget Configuration” allows you to view all widgets in a list that are currently on your dashboard. From here you can manually change the display order by dragging and dropping, launching the widget configuration or setting the widget visible/invisible.

When “***Click to Focus”*** is enabled, you can change the order of your widgets by simply clicking on a widget in the dashboard. Clicking on a widget will bring the widget to the top. Toggling “***Click to Focus”*** off will lock the widget display order. In this state, widgets can only be reordered by dragging and dropping them in this configuration dialog.

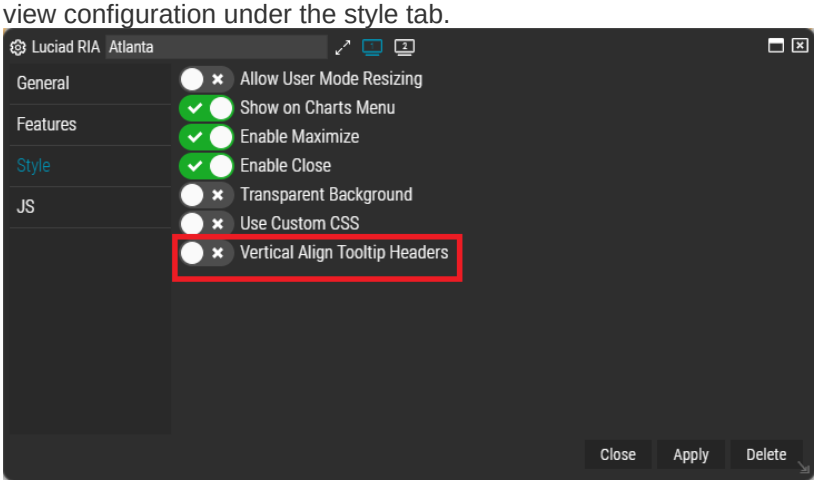


- Tooltip Configuration

“Tooltip Configuration” allows you to define and configure tooltips for your dashboard map view features. The tooltip configuration has been redesigned to allow easier defining and reordering of tooltips. To define a tooltip, select the dataset from the left column and then simply drag a field from the “Available Fields” to the “Selected Fields” section. Once in the “Selected Fields” section, you can adjust the label or define a static width.

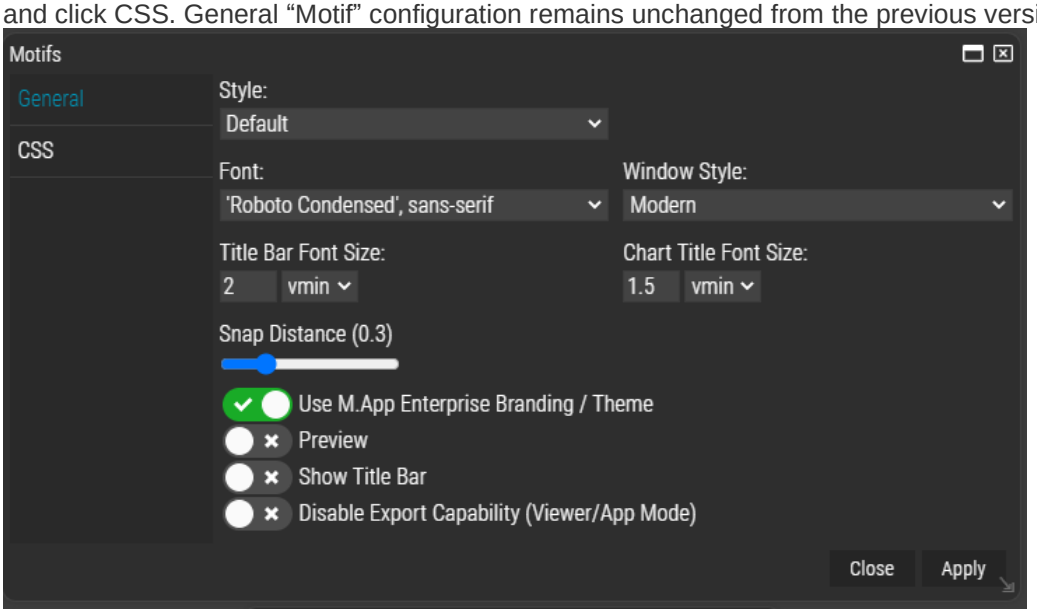


Tooltip headers can have a horizontal or vertical alignment. This setting can be accessed on the map view configuration under the style tab.



- Motifs

You can now define a global CSS from the motif configuration. To do this, open “Motif Configuration” and click CSS. General “Motif” configuration remains unchanged from the previous version.



- Save

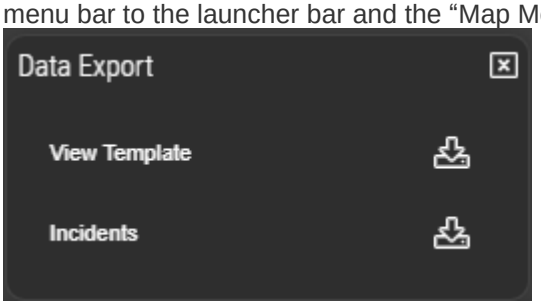
You can save your view from the launcher bar. “Save” functionality has been moved from the menu bar to the launcher bar in this version.

- Import View

Allows you to import an exported view template. This functionality has been moved from the “Dataset Configuration” to the launcher bar in this version.

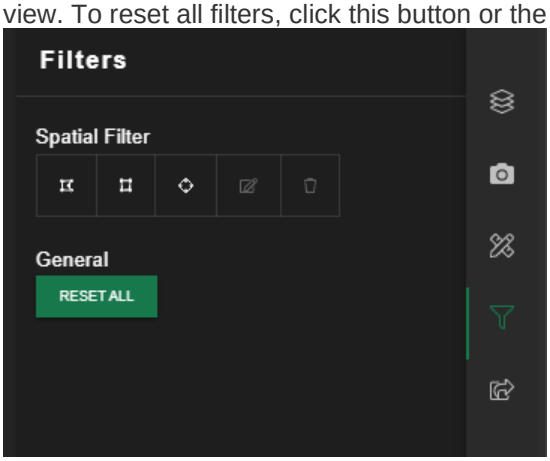
- Export

Export allows you to download your view or view data. Export functionality has been moved from the menu bar to the launcher bar and the “Map Menu” in this version.



- Filter All

Filter all has been moved from the “User” menu to the launcher bar and “Filter” section on the map view. To reset all filters, click this button or the reset all button in the “Map Menu.”

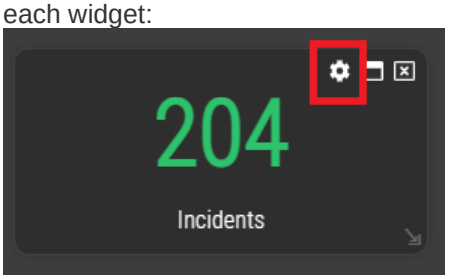


Widget Configuration

“Widget Configuration” has been made easier in this release. You can now:

- Launch “Widget Configuration” right from the dashboard
- Not have to reload your view after each change. Just the affected widget is reloaded

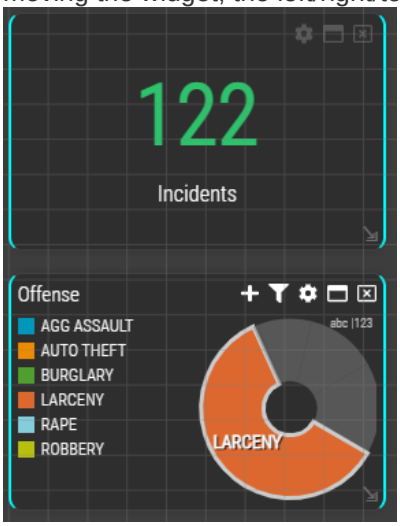
There are two ways to launch the widget configuration. The first is through the configuration cog at the top of each widget:

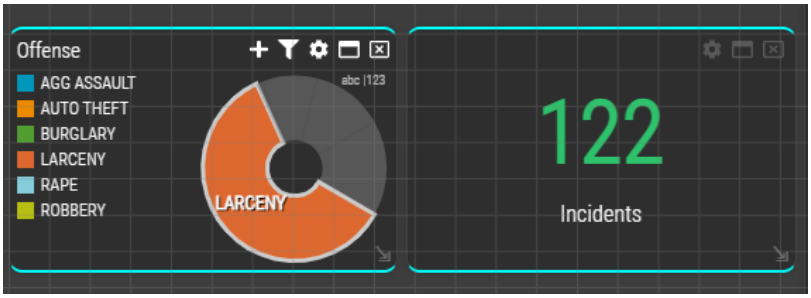


Alternatively, you can launch “Widget Configuration” through the launcher bar.

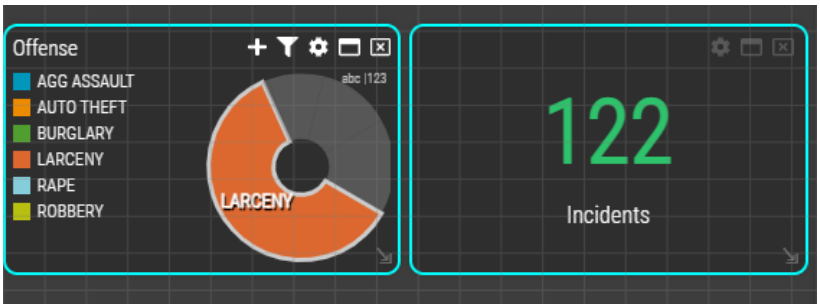
Sizing guides

Sizing guides have been added and will display automatically when moving or resizing a widget. A side of the widget will highlight to indicate the widget border is aligned with another widget on the dashboard. When moving the widget, the left/right/top/bottom side will highlight to indicate alignment:





When resizing a widget, each side will highlight to indicate the widget matched the height (top and bottom will highlight), or width (left and right side will highlight). All four sides will highlight to indicate the width and height match another widget on the dashboard.



Alternate Theme configuration

"Alternate Theme" configuration has been moved from the "Configuration Slide" to each individual theme chart. To add an alternate theme, click the "+" icon on the theme chart.

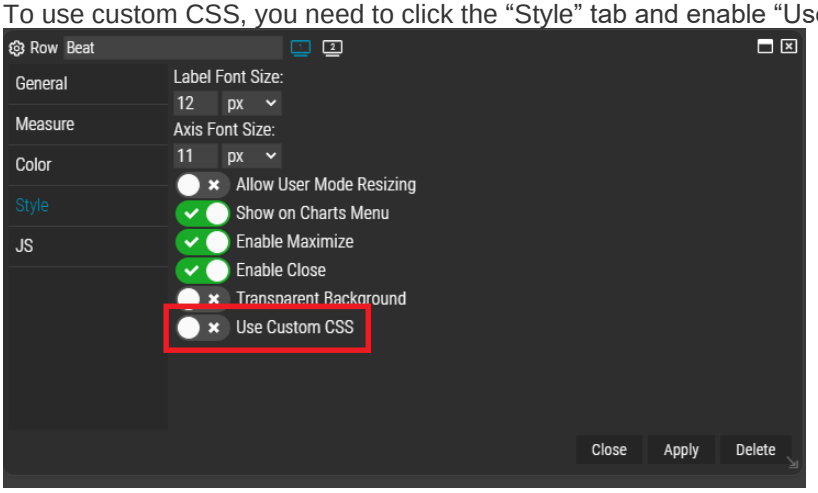
Widget customization

Each widget now has options for configuring custom code and styles. Custom code is run when the widget mounts. To write custom code, open the configuration for a widget and click the JS button. The "this" keyword represents the current widget. As an example, if you wanted to alert the widget title on mount you would write:

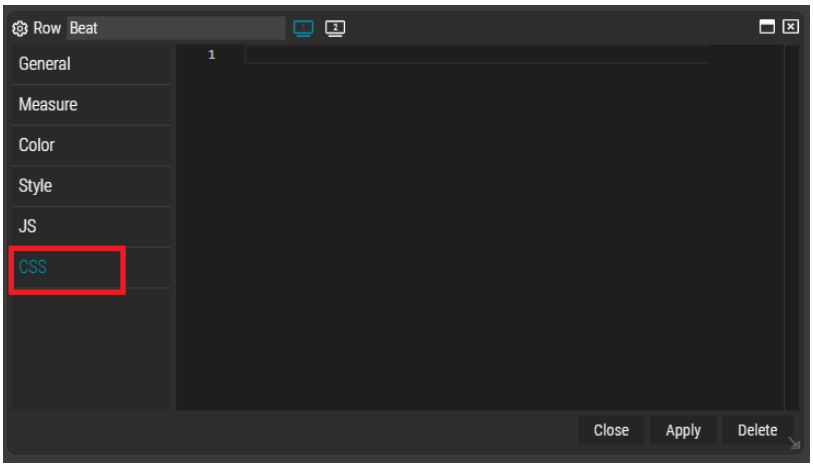
```
alert(this.title);
```

In addition to this, LuciadRIA widgets have been enhanced to support the entire LuciadRIA API with intellisense.

To use custom CSS, you need to click the "Style" tab and enable "Use Custom CSS."

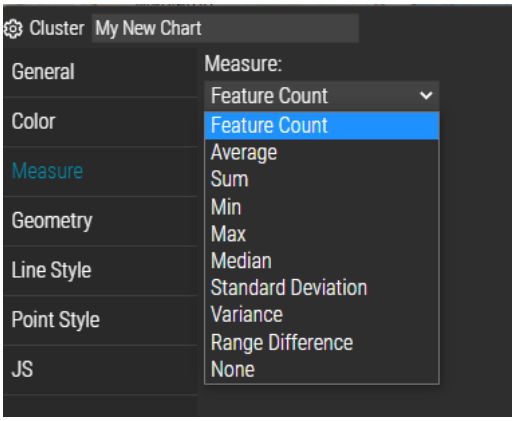


Once this toggle is enabled, a CSS tab will appear on the left where you can define custom styles. Note that these styles are not global and are scoped only to the current widget. If you want to define a global style, use the "Motif" configuration.



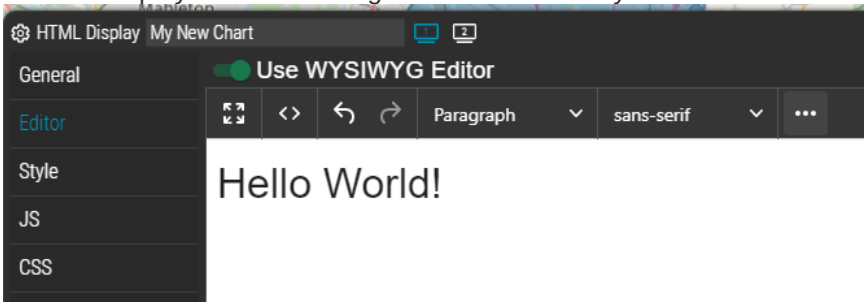
Cluster configuration enhancements

“Cluster” labels now support measures. To select a measure, open the “Cluster Layer Configuration” and click the “Measure” tab. This calculated value will appear in the center of the cluster.

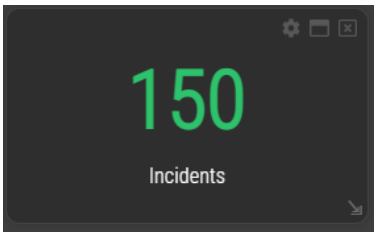


Number display and HTML widget enhancements

Number display and HTML widgets now use the TinyMCE WYSIWYG editor.

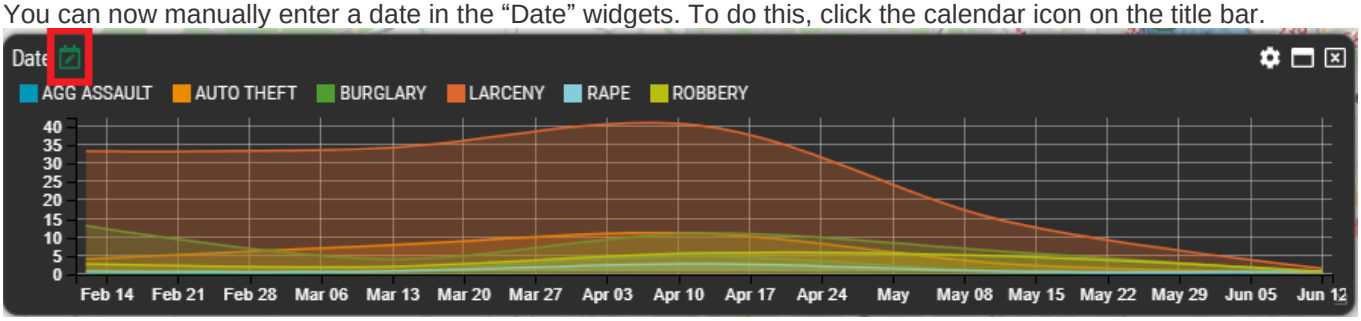


Number display charts now have default BAN formatting



Date widget enhancements

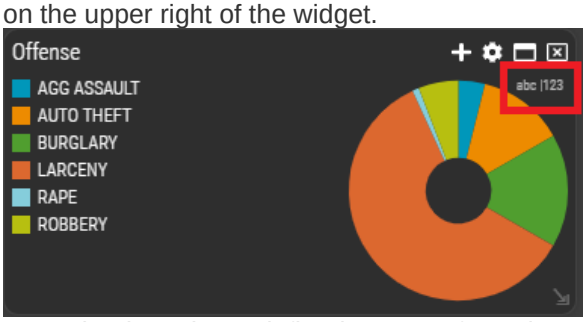
You can now manually enter a date in the “Date” widgets. To do this, click the calendar icon on the title bar.



A modal dialog will appear with the option of entering in a start and end date/time.

Pie/Theme chart enhancements

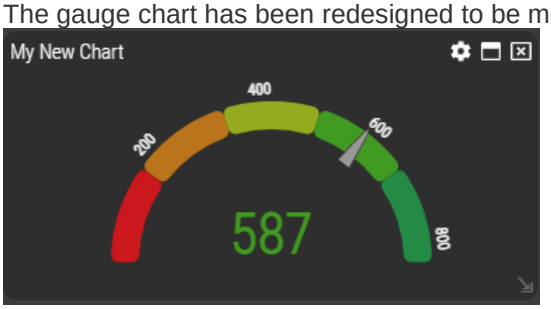
You can now sort the pie/theme chart legend by measure value or by label. To do this, click the “abc/123” icon on the upper right of the widget.



Icons that have been defined as part of a styleset will now be displayed in chart legends.

Gauge chart redesign

The gauge chart has been redesigned to be more aesthetically pleasing.



Desktop

New design

To be consistent with the brand/theme of M.App Enterprise Management/Studio/Apps, we did an overhaul of the design/layout of the desktop client.

There are several changes:

- Change of font family to Google Open Sans
- Scale moved from above the “Overview” to the status bar
- Everything in the status bar is clickable, editable and larger
- Flattened all icons (plug-ins and workflow action icons)
    - Long click on the icon still opens all other actions
- Icons in the header bar moved to the left instead of middle and right
- Integration of the user menu in the header bar
- All buttons got an icon in front of the text

Here are some screenshots of the changes:

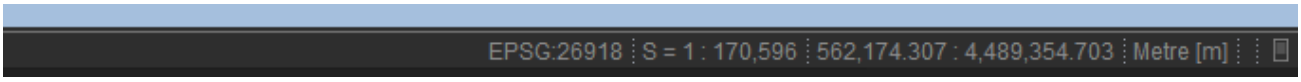
Header bar

Old:

New:

Status bar

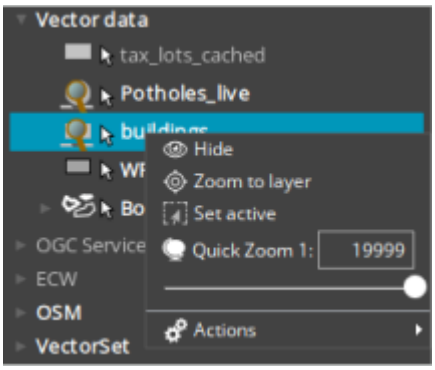
Old:



New:

Fit to layer extents

One functionality which was from the beginning available in the browser client came over to the desktop client for this version of M.App Enterprise. You now can right click on any layer and get the function “**Zoom to layer.**”



Map context menu improvements

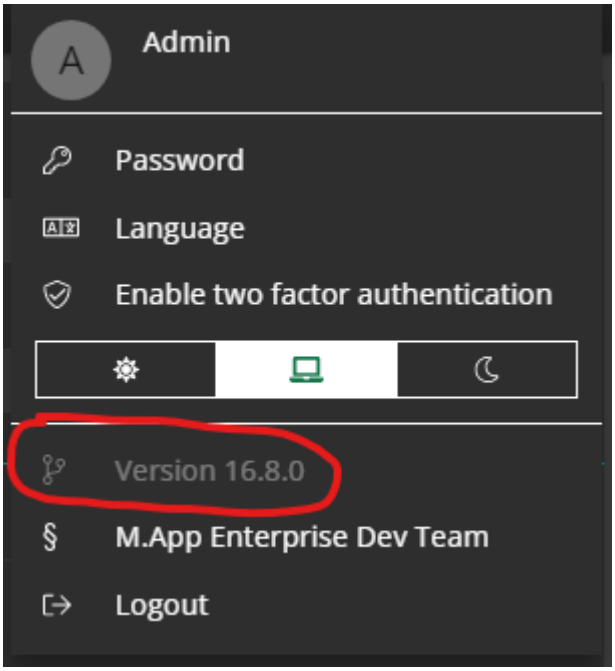
A right click in the map gives you even more options to choose from in the newest version of M.App Enterprise.

With every right click you get information about all layers the click hits. In the screenshot below you can see that just one layer was hit, and you get all available actions to this layer: Queries and workflow actions. You can also select the geometry or set it active. If you click a workflow action the geometry is automatically selected.

Management

Show version number

In the management and the M.App Enterprise Studio we are showing the version number of the current installation and if a new version is available.



Edit tenants in management

With the release of M.App Enterprise 2023 it is possible to edit the tenants. Besides activating/deactivating two factor authentication for the entire tenant, it’s also possible to add or remove the active directory.

Setup

Automatic upgrade to all language packs installed on the server.

System requirements

M.App Enterprise 2023

Server:

Computer/Processor	64-bit: Intel® 64 (EM64T), AMD® 64 or equivalent (Multi-core processors are strongly recommended)
Memory (RAM)	8 GB or more strongly recommended
Disk space	• 1.3 GB for software
Production environment	Two different types of server: • One application server • One tile server (for cache creation)
SSL certificate	M.App Enterprise comes with a preconfigured self-signed certificate. But like in many cases, an organization should come up with their own certificate from a trusted certificate authority (CA). It can be a domain certificate issued by your organization or a CA signed certificate.
Operating Systems	• Windows Server® 2012 Standard and Datacenter (64-bit) • Windows Server® 2012 R2 Standard and Datacenter (64-bit) • Windows Server® 2016 Standard and Datacenter (64-bit) • Windows Server® 2019 Standard and Datacenter (64-bit) • Windows Server® 2022 Standard and Datacenter (64-bit) Note: Windows 8, 8.1, 10, 11 are supported for basic testing and not recommended for deployment in a production environment
Software	• .NET 4.8 or higher
Database engines	Minimum: • PostgreSQL 9.4 with PostGIS 2.0 • Oracle® Server 12c 64-bit (Oracle 12.1) • Microsoft® SQL Server® 2012 64-bit Tested on our development environment: • PostgreSQL 12 with PostGIS 3.0 • Oracle® Server 21c 64-bit • Microsoft® SQL Server® 2019 64-bit

Client:

Computer/Processor	2 GHz minimum, Hyper Threading or multi-core recommended
Memory (RAM)	2 GB or more strongly recommended
Display properties	24-bit color depth
Screen resolution	1024 x 768
Peripherals	Mouse or pen for input For tablets: Digitizer is recommended
Networking hardware	Simple TCP/IP, Network Card
Disc space	50 MB
Operating systems	• Windows 7 SP1 • Windows 8.x • Windows 10 • Windows 11
Supported web browsers	• Google Chrome • Mozilla Firefox • Microsoft Edge
Supported mobile platform	• Android 5.0 or higher • iOS 8 or higher • Windows 1709 or higher

Issues resolved: M.App Enterprise 2023

Support ticket	Summary
00023325 **00026936**	Meter based styling weren't honored in browser-based applications
00023353 **00089824**	Layer sorting in Feature Analyzer wasn't possible
00023358	Only generic icons in browser-based applications
00023445	Blue circles always appear if a point and polygon symbolizer are combined
00023460	Cached data was not shown in browser-based applications
00023509	HTML charts changed layer order in Feature Analyzer
00023556	Integration of public apps
00025400	Generate within Style Editor manipulates column names in Oracle
00026903	Dataset was not showing in Feature Analyzer because of a wrongly defined EPSG code
00026939	Rotation of text labels are ignored
00048135 **00052198**	Rework of the error message if wrong parameters/values were defined
00049303 **00068006**	WMTS capabilities were not displayed in the browser application
00056450	Alignment was not rightfully considered in tooltips
00056469	Connecting to an already existing master/tenant database led to errors
00057908	WMTS was not displayed correctly in browser-based applications
00067774	WMS/WMTS in combination with Feature Analyzer led to strange results
00069471	Assigning vector sets with a different SRID than the app led to errors
00070942	Bottom layers were not rendered in Feature Analyzer
00073913	Halo was not applied correctly respectively set back to black
00080879	Rendering of two-line symbolizers overlapping each other was not rendered correctly
00084217	Style Editor changed field names in filter section always to lower case

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Hexagon is a global leader in digital reality solutions, combining sensor, software and autonomous technology. We are putting data to work to boost efficiency, productivity, quality and safety across industrial, manufacturing, public sector and mobility applications.

Our technologies are shaping production and people-related ecosystems to become increasingly connected and autonomous — ensuring a scalable, sustainable future.

Hexagon's Safety, Infrastructure & Geospatial division improves the resilience and sustainability of the world's critical services and infrastructure. Our solutions turn complex data about people, places and assets into meaningful information and capabilities for better, faster decision-making in public safety, utilities, defense, transportation and government.

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