

WHAT'S NEW IN MICROSTRATEGY 2019

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Use What's New in MicroStrategy 2019

MicroStrategy 2019 is the world's first and only platform for HyperIntelligence, federated analytics, and transformational mobility. It is the most open and complete offering on the market, delivering modern analytics on an enterprise platform that can be deployed on multiple private or public cloud platforms, designed to help make every enterprise a more Intelligent Enterprise.

HyperIntelligence

ANSWERS THAT FIND YOU.

MicroStrategy 2019 introduces HyperIntelligence, a new category of analytics that imbues every word, object, place, room, and wall with zero-click, personalized intelligence. HyperIntelligence transforms how people access analytics – you no longer have to actively seek out answers, answers find you. HyperIntelligence instantly scans every word on every webpage and web application – users simply hover over highlighted words to see HyperCards full of real-time insights. HyperIntelligence also uses device cameras to inject HyperCards onto products and objects in front of you and superimpose HyperCards onto buildings and places nearby.

Federated Analytics

TOOLS YOU LOVE. PLATFORM YOU TRUST.

MicroStrategy 2019 is designed to power the tools employees love—including third-party visualization, preparation, or analytical tools—with a single version of the truth, content recommendations, and audit-ready data governance. Tableau, PowerBI, and Qlik users can bring enterprise security, scalability, and performance to their applications by connecting to analytics via the MicroStrategy Enterprise Semantic Graph. Available with MicroStrategy 2019, the Enterprise Semantic Graph powers machine learning and analytics applications with a consolidated business glossary, query performance at scale (via push-down analytics and optimized multi-source queries), and an adaptive in-memory architecture. The semantic foundation is supplemented with user and system telemetry—enabling a new class of personalized, location-aware applications and experiences.

Transformational Mobility

INSIGHT TO ACTION.

MicroStrategy 2019 lets you re-imagine how people work with mobile productivity apps tailored to any business function or role, on iOS and Android smartphones and tablets. Build apps using any one of three powerful strategies: 1. Mobile dossiers—quickly build interactive books of analytics that render beautifully on smartphones and tablets; 2. No code drag-and-drop—for branded custom apps that mobilize any system, process, or application; 3. Customized development—with SDKs for iOS and Android that let developers extend MicroStrategy content into their apps using XCode or JavaScript.

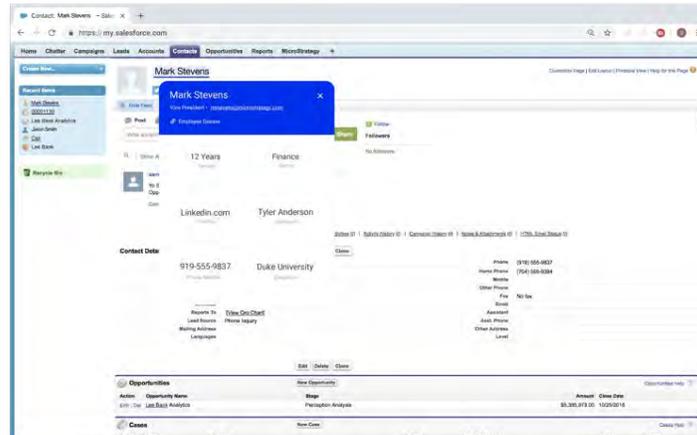
MicroStrategy 2019 is the latest platform release. This version introduces thousands of transformative features and enhancements across the board for everyone in the organization, including administrators, analysts, consumers, data scientists, developers, and business users. Highlights include:

- **For business users:** A new class of analytics called HyperIntelligence that delivers zero-click intelligence to any web page or web application. The new MicroStrategy Library delivers a personalized portal for analytics on web and mobile, that helps everyone find answers easily. Smart recommendations are available for content and insights, with easy bookmarking options that let end users save frequently used, personalized views. Interactive collaboration capabilities make it incredibly easy for end users to communicate with each other, with real-time tagging and notifications, using a familiar chat interface within the MicroStrategy application.
- **For analysts:** MicroStrategy Dossier allows analysts to build interactive books of analytics. Natural Language Querying (NLQ) lets analysts quickly build visualizations to find insights just by typing a Google-like question into MicroStrategy. Powered by AI, MicroStrategy makes smart recommendations for search terms and questions to help you get started. Additionally, dozens of new connectors are available for cloud applications, the latest relational systems and big data sources. New connectors for Tableau, Qlik, and Power BI allow every analyst to use the tools they love, on the platform they trust.
- **For developers:** A robust set of new and improved REST APIs allow developers to build custom apps and extend the functionality of the MicroStrategy platform to any device or third-party applications. Use the embedding API to customize, rebrand and embed MicroStrategy Dossier and Library functionality with greater flexibility. Developers have complete flexibility to build custom data connectors, white label applications, create custom widgets and visualizations, easy access to REST APIs, the Data Connector API, the Mobile API for iOS and Android, the Visualization SDK, and more.
- **For data scientists:** New integrations for R and Python are available via two open-source packages that allow data scientists to consume intelligent cubes, create R and Python algorithms, and publish results back into MicroStrategy without leaving their data science tools.
- **For architects and administrators:** New Workstation delivers a modern interface to perform administrative and routine management tasks. Platform Analytics makes it easier than ever before to understand the usage of your MicroStrategy deployments with real-time telemetry capabilities. Also available with MicroStrategy 2019, the updated provisioning console lets administrators or architects deploy MicroStrategy on AWS or Azure in under 30 minutes.

MicroStrategy 2019 is available to download from software.microstrategy.com. Customers can also provision MicroStrategy 2019 on the cloud with the MicroStrategy for AWS and MicroStrategy for Azure provisioning consoles. For mobile, the latest release is also available in the respective app stores for iOS and Android, and MicroStrategy Desktop for Windows PC and Mac is available on www.microstrategy.com.

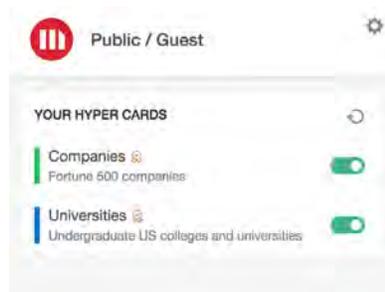
Boost productivity by using cards on top of your favorite web application

HyperIntelligence seamlessly delivers insights to everyone by injecting intelligence directly into the tools and systems they use every day. Cards can be used to easily surface information from one enterprise system on top of another – for instance, an organization could expose data from Salesforce in their SAP applications. Cards work on top of any browser-based content, from websites and email to Salesforce.com, Office 365 applications, and even other BI tools.



Support multiple cards

The extension supports the use of multiple cards concurrently. Each card can point to a different keyword (e.g. customer, product, SKU, employee, country, state, or zip code). Simply click the extension icon to see the list of available cards or toggle individual cards on or off.



Blacklist individual websites to selectively disable HyperIntelligence

By default, the extension will work with any web-based content, however it is possible to blacklist individual websites, disabling the extension’s functionality. To blacklist a specific URL, navigate to the settings menu, and enter the URL you wish to blacklist. Alternatively, users can disable the extension on their current webpage by selecting the 'disable extension on' checkbox in the extension dropdown.

Disable extension on:
<https://microstrategy.sharepoint.com/>

Download the extension from the Chrome Web Store

To get started, simply download the MicroStrategy HyperIntelligence extension from the Chrome Web Store. <https://chrome.google.com/webstore/category/extensions>

The extension comes preconfigured with several sample cards. These cards are hosted on the MicroStrategy demo server and are designed to expose a user to the experience of using the extension without needing to set up their own full-fledged MicroStrategy environment.

Set up your own card

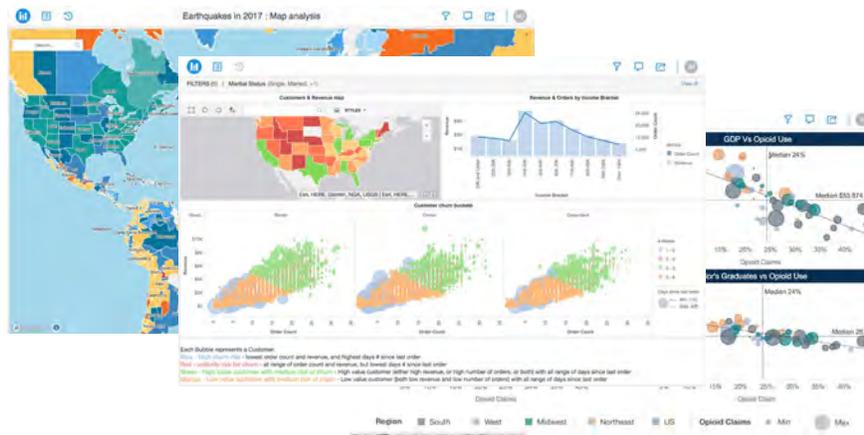
In order to see your organization's cards, you will need to repoint the extension to your MicroStrategy environment. To do this, simply click on the extension icon, navigate to the settings menu, and then enter the environment URL supplied by your MicroStrategy administrator.



For information on building cards for your team, department, or organization check out the Analyst section of this What's New Document.

MicroStrategy Dossier

Available with MicroStrategy 2019, MicroStrategy Dossier delivers the next step in the evolution of business analytics. Dossiers are a new method of building and consuming analytics that your end users are going to love.



Dossier makes powerful analytics available to anyone, regardless of skillset or role. Featuring a simplified, streamlined interface, dossiers compile data from across the organization in intuitive, interactive applications. They make it easy to navigate through reports and visualizations, share insights, and collaborate with colleagues with its familiar chapter and page structure.

Dossiers sport a consistent, clean interface that provides fast access to key actions, more visualization options, and table of contents-style navigation. By removing clutter and presenting information in a way that anyone can instinctively understand, dossiers make analytics more accessible than ever.



Use a new Table of Contents panel that allows business users to easily navigate through storie

MicroStrategy Dossier offers a new way to consume analytics that makes it extremely intuitive for business users to navigate through data and stories. BI content is organized as chapters and pages within the dossier, presenting information in a way that everyone instinctively understands.

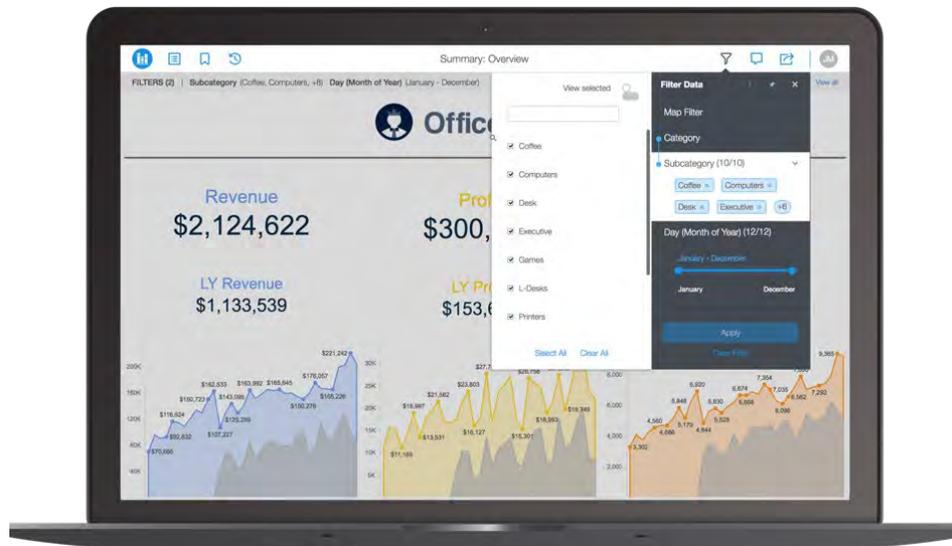
A Table of Contents menu option offers end users on both web and mobile the ability to easily navigate through chapters and pages within a dossier. It offers end users the ability to find high-level content, as well as more granular information that they need, with easy navigation options, like hierarchical formatting. Users also have the option to jump across chapters and pages and quickly dive into the page they want to analyze.



In addition to the Table of Contents view, (also known as List View), dossiers can be designed to display tab views as in previous versions (which can be placed on both the top and bottom).

Experience enhanced filtering

Dossier delivers a completely revamped filtering experience that helps business users find the insights that they need. The new simple and clean design makes slicing and dicing data easier than ever before. Available on web and mobile, the new and modern filter panel can be locked into place on the dossier or hidden as needed, giving end users the flexibility to decide how they'd like to use dashboard screen space. Standard filters with multiple display options including dropdown, check box, text search are available to end users.

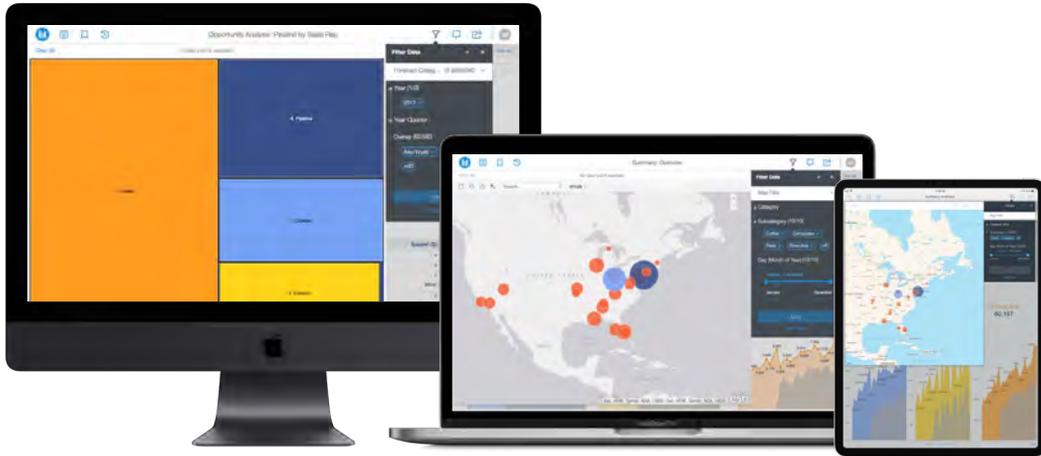


Filters can be applied to both attributes and metrics; the filter panel displays a list of filters on attributes or metrics that target the data at the chapter level. Cascading filters are also available to end users, so the selections in one filter will affect the choices displayed for additional filters on the panel.

Find new insights with visual filters

In addition to standard filtering options, MicroStrategy Dossier makes filtering more intuitive and modern with its ability to use any visualization, chart, or graph within the filter panel. Presenting selections in the new filter panel enables the user to make more informed selections – and also frees up dashboard space to focus on the results – rather than giving up screen real estate for ‘selectors’.

Available both in web and mobile, this new feature makes it more visually intuitive to narrow focus within a dossier. It is especially useful when the number of data points are extremely high for a standard dropdown or radio button filter. With visual filters, business users can use bar charts, pie charts, or even geographical maps as filters within the filter panel – making it incredibly easy to limit the data and focus within a dossier. The examples below highlight a heat map and a geographical map, both acting as visual filters within the dossier consumer interface.



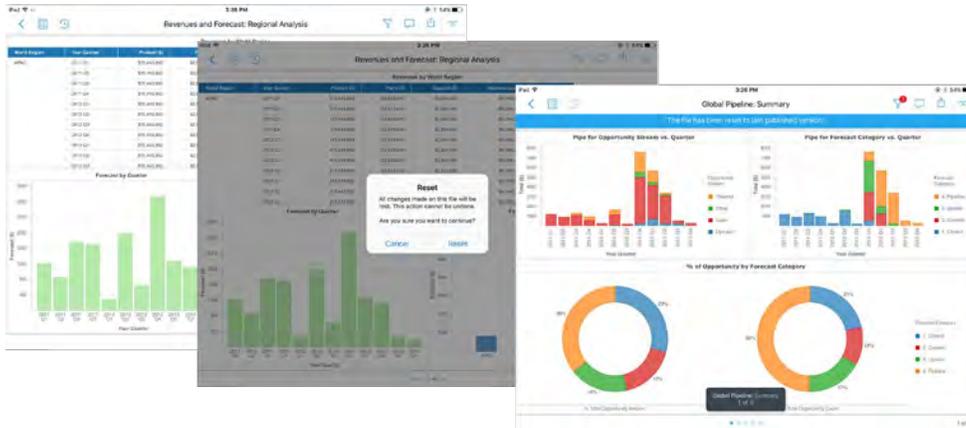
Distribute and share interactive dossiers

With revamped dossier distribution capabilities in MicroStrategy, it is now possible to share completely interactive dossiers for offline analysis. For customers who would like to send more than a static PDF file to end users, and would like to send fully interactive dossiers, MicroStrategy now has the capability to share an MSTR file as an attachment. It's as simple as "File, Send." Recipients can leverage the free MicroStrategy Desktop tool to easily open the dossier and have full interactivity for data discovery. It is now also possible to schedule dossier delivery through distribution services, allowing dossiers to reach more end users. Every business user can now slice and dice data with complete interactivity, edit the dossier, swap out visualizations and even blend new data into existing dossiers – even when offline.

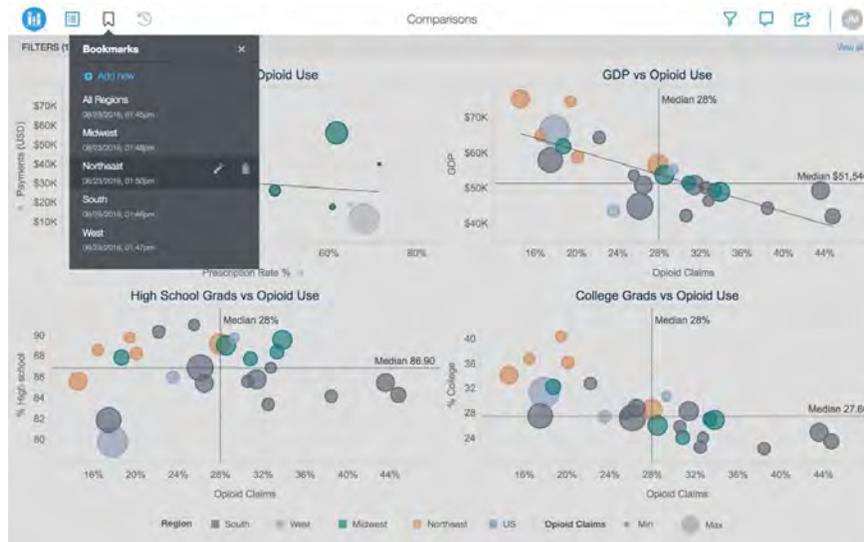


Personalize views and bookmarks in dossiers

When business users view and exit a dossier on both Web and Mobile, the product remembers the last viewed page or state of the dossier. When the user returns to the dossier, the user will be taken to the same page, chapter, or panel with the same filter choices – with all changes retained from the last time it was opened. This feature preserves personalized views of the dossier for the end user, without making any permanent changes. This applies even if the user returns to the dossier on a different device and works across web and mobile.

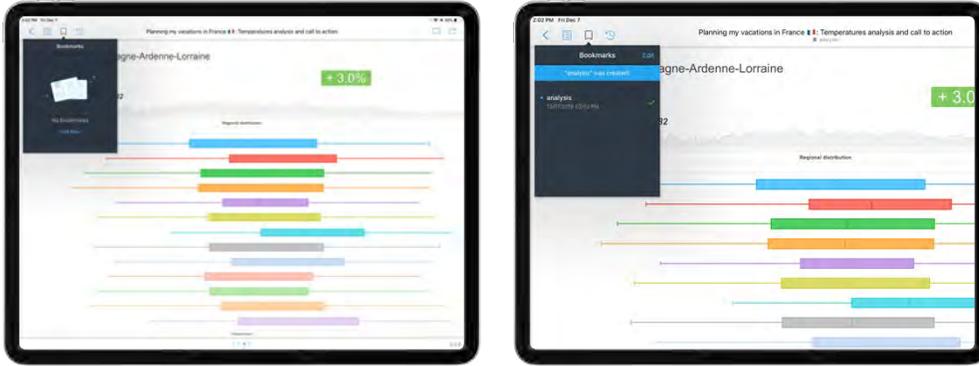


With MicroStrategy 2019, users can create and save multiple bookmarks on a dossier, saving personalized views with different in-canvas selectors, prompt selections, filter choices, and more. Leveraging multiple bookmarks allows users to navigate between the most important views of dossiers with ease—without the need to re-apply changes and edits.



Bookmarks: Helpful in web, and even better in mobile

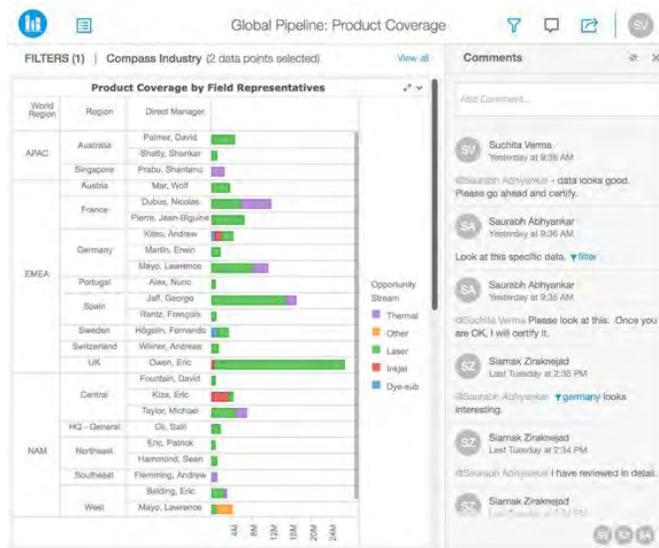
As on Web, mobile users can access, add, rename, and delete bookmarks in their dossiers. Additionally, users can navigate between different views and filter states. With Mobile, users can access bookmarks while offline and view their favorite state of the dossier.



Collaboration

Business users have the ability to collaborate with each other via familiar discussion threads or comments within the dossier interface. Anyone who can access a dossier via the MicroStrategy Library can add comments that are specific to that dossier page.

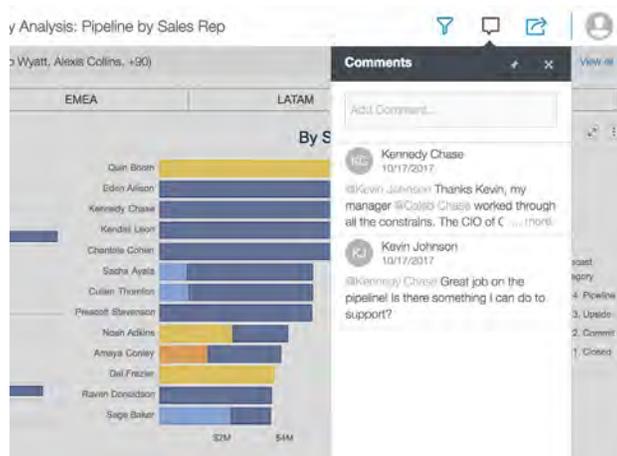
Users can ask questions, highlight trends, and call attention to specific data points on the dossier itself – without having to take the conversation outside the application. All comments are saved on the discussion thread and end-users who have access to the dossier can see the entire string of comments with time stamps, so comments don't get lost in a separate email or chat application.



Tag users with comments

End users can tag or mention other user's names within comments on the discussion threads to get their attention. Tagging a user will send real-time and direct notifications on both web browsers and mobile devices to that user whose name has been mentioned in the comment.

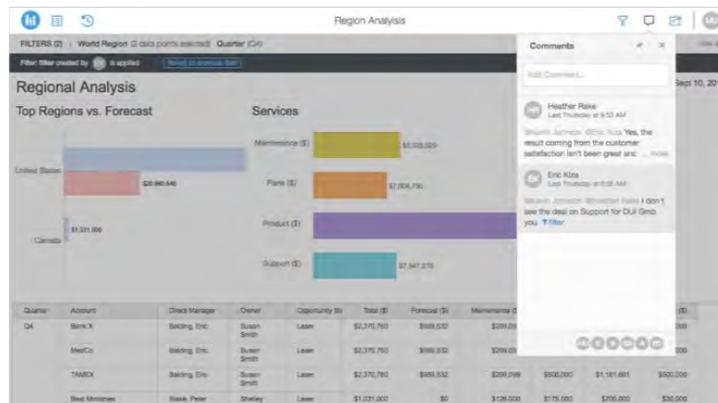
Users can see other users who are online and can use the @<name> syntax to send notifications directly to other individuals or groups. The notifications are delivered via pop-ups to users who are online on a web browser or on the mobile app. Notifications are also seen as alerts on the dossier itself on both web or mobile, for anyone who isn't online when the comments are made.



Share personal views of dossiers in real-time

End users who want to collaborate with other business users can send a link to the exact same "view" of their dossier to provide context. This is especially helpful to end users who frequently apply several filters at once and would like to share a link with others to the current state of the dossier without actually saving the dashboard.

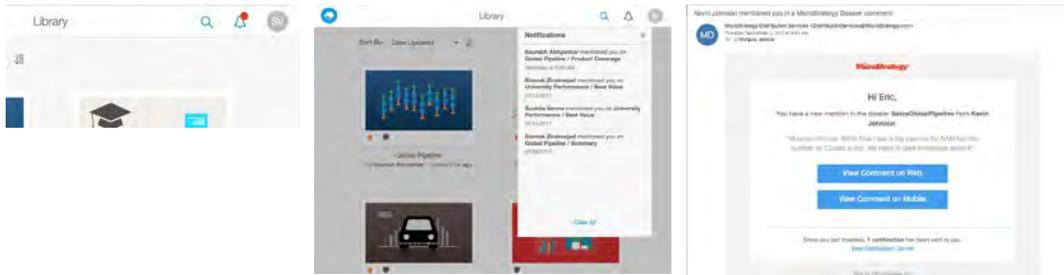
Users will be able to embed their current filter criteria using either the @ filter syntax by simply clicking on the filter icon within the comments panel. End users who receive this link will be able to launch the exact same view of the dashboard, with all the same filters applied as the person who shared the link.



Send browser and mobile notifications

Users can send notifications to other users or user groups by tagging them within comments on the dossiers, which ensures that no update ever gets missed and overall adoption of the dossier is increased.

Notifications are sent in real-time and across all interfaces. Web users can get notifications via email, browser banners, and as page and library alerts. Mobile users also receive alerts and notifications through the device's native push notification system in one of the three forms: A badge (a graphic associated with the application), a home screen notification (a message which the user can view and optionally interact with), and/or a sound. In the case of multiple notifications, users can expand and collapse the notification window from the home screen using native device gestures.



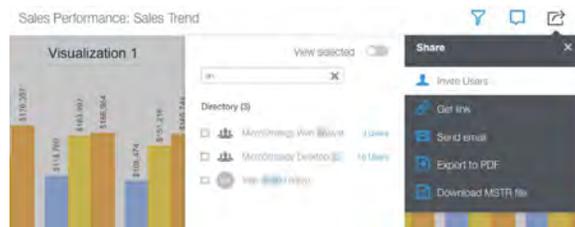
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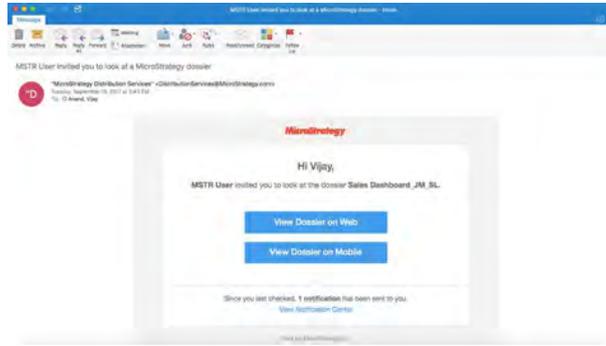
Users will be able to embed their current filter criteria using either the @ filter syntax by simply clicking on the filter icon within the comments panel. End users who receive this link will be able to launch the exact same view of the dashboard, with all the same filters applied as the person who shared the link.

Choose Between Many Sharing Options for Business Users

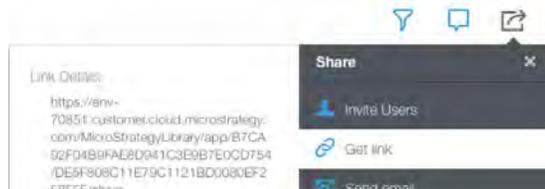
Business users can easily share dossiers with other users in a variety of formats. It's possible to share direct and secure links to personalized dossiers to other users who have access to MicroStrategy Library, or can download PDF and MSTR files for offline viewing invite other users and share dossiers directly from the MicroStrategy Library.



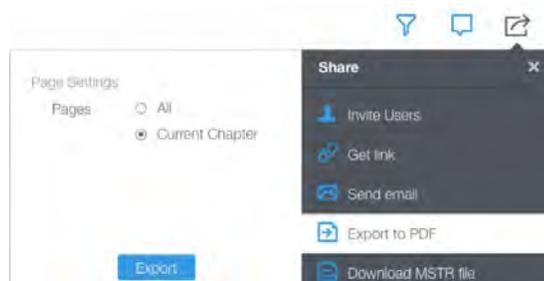
Users who are invited to the dossier will get an email notification with direct links to access the dossier on both web and mobile.



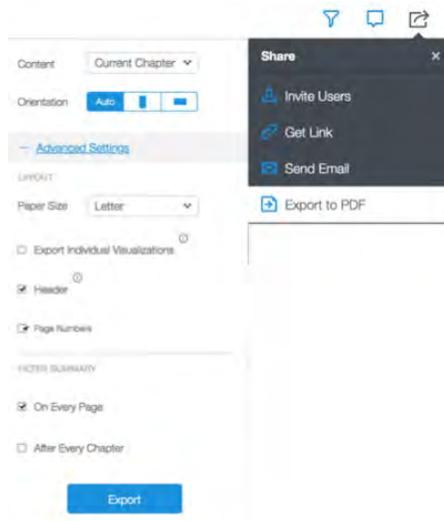
Additionally, users can also get a link to the dossier and can chat or email the link to other users directly as well.



End users can also download the PDF version of the dossier or can download an interactive MSTR file of the dossier, both from web and mobile.



Business users can export dossiers from the MicroStrategy Library using a variety of formatting options. End users can export dossiers to PDF format with the following formatting options as shown in the image below.

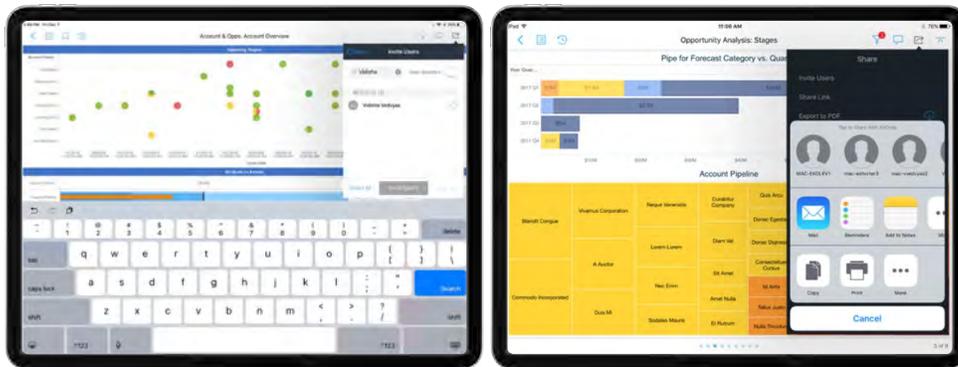


Users can choose to export only the current chapter they are viewing, all chapters within the dossier, and even individual visualizations, which creates a separate page for every visualization from every page being exported. This provides users the flexibility to tailor the PDF to suit their needs.



Share via native extensions

Mobile users have the ability to share links to dossiers, .mstr files, and PDFs from the MicroStrategy Library Mobile app using native OS extensions. Android and iOS users can mail, print, copy, use communicators such as Slack and AirDrop (iOS only), or import to other apps such as iBook and Dropbox.



Get real-time alerts through native device push notifications

For customers who deploy MicroStrategy on AWS, alerts and notifications can be delivered through the device's native push notification system without requiring any SDK configuration. Alerts can be delivered either as a home or lock screen notification or as a banner while in-app. Mobile users are notified when they are mentioned in a collaboration post and can take action directly from the home screen or lock screen. In the case of multiple notifications, users can expand and collapse the notification window from the home screen using native device gestures.



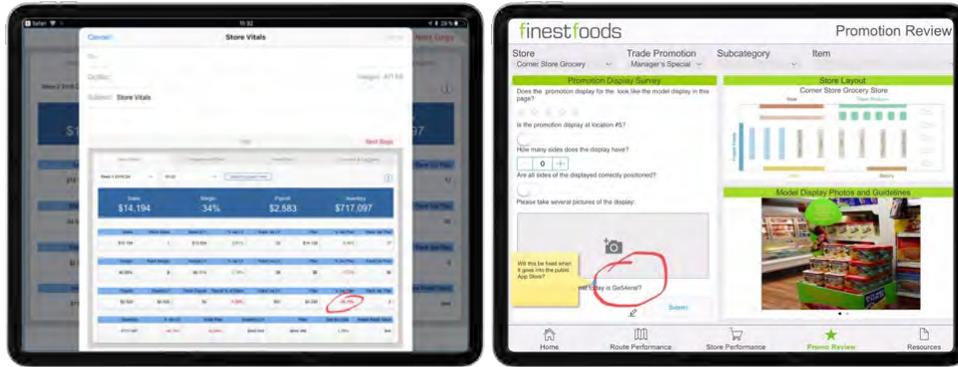
Export reports to Excel with MicroStrategy Mobile

Export reports directly from your mobile device for further analysis in Excel and share exported reports via email.



Annotate and share with relevant email subjects

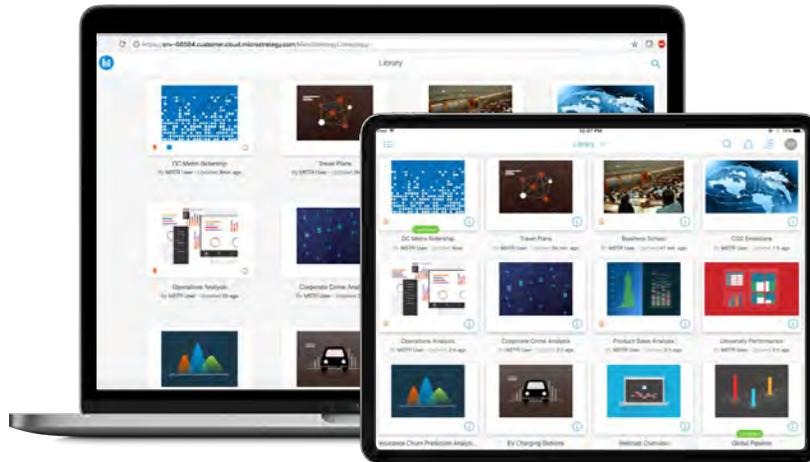
MicroStrategy allows end users to use menu options to annotate and share screenshots instantly with others. Rather than displaying "annotation.jpg" as the email subject line, when users share an annotated dashboard via email, the email subject is automatically populated with the dashboard name. This feature makes it more intuitive for email recipients to understand the analysis another user has shared with them.



MicroStrategy Library

Dossiers are available through the MicroStrategy Library – available on both Web and Mobile – making it easy to find the information you need.

The MicroStrategy Library is a personalized portal for every end user to access all their BI content or dossiers. Dossier authors can easily share a link to any dossier, which is hosted in the MicroStrategy Library. End users can login to the MicroStrategy Library to find a list of all dossiers that he or she has subscribed to and has access to.

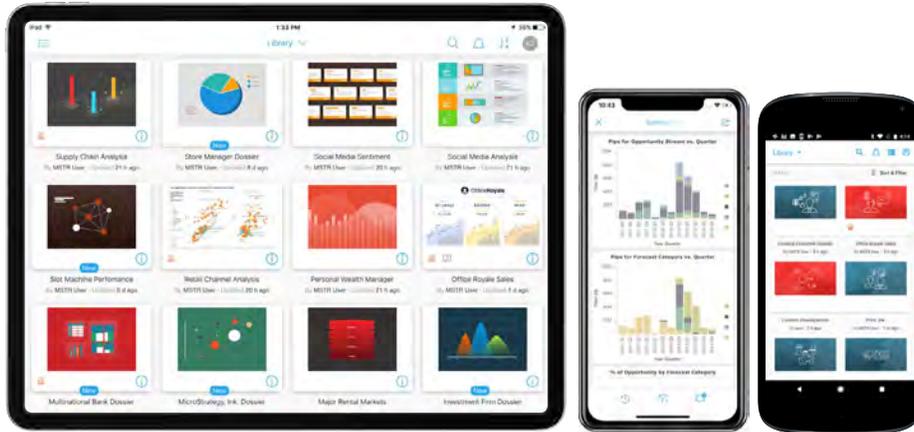


Each dossier in the MicroStrategy Library is represented by a customized thumbnail image, making it easy to identify content. Each dossier thumbnail also indicates the owner name, last updated time, and number of comments made on that dossier. Dossiers in any library can be sorted by name, date, last updated date, or date viewed, allowing users to find information easily.

Experience the native mobile app for MicroStrategy Library

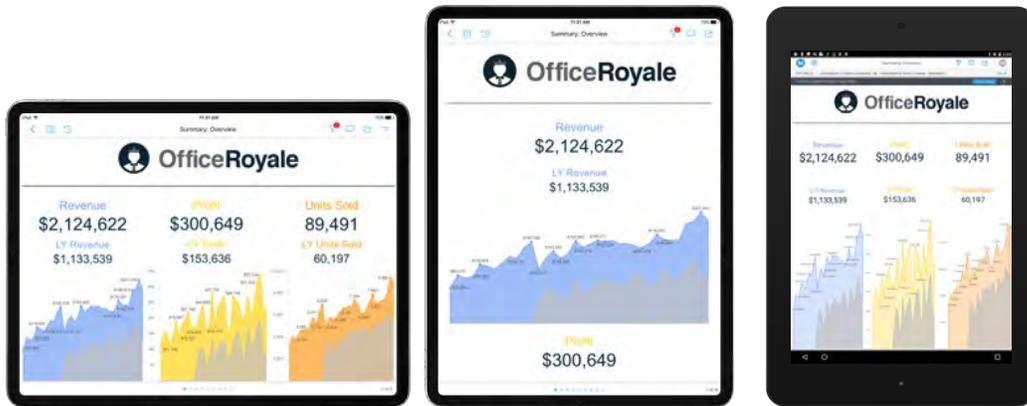
Smartphones and tablets provide the ultimate utility when it comes to convenience and availability. Leveraging MicroStrategy's responsive design capabilities that enable Library and dossiers to render beautifully on any device and form factor, users can now consume and interact with dossiers and Library via apps optimized for iOS and Android.

To consume dossiers on mobile, users should download the MicroStrategy Library app for tablets and smartphones for iOS and Android devices from the Apple and Google Play app stores respectively.



Automatically align to any form factor with enhanced responsive design capabilities

The MicroStrategy Library mobile app provides significantly enhanced responsive design capabilities, making the experience seamless when switching between interfaces, devices and form factors. Dossier components, such as visualizations, filters, images, and notification panels are automatically resized and arranged for optimal display on iPads and Android tablets. Though there are several form factors and aspect ratios, MicroStrategy prioritizes the visualizations view, by adjusting spacing and padding, and object alignment.



Native, touch-optimized controls for optimized workflows

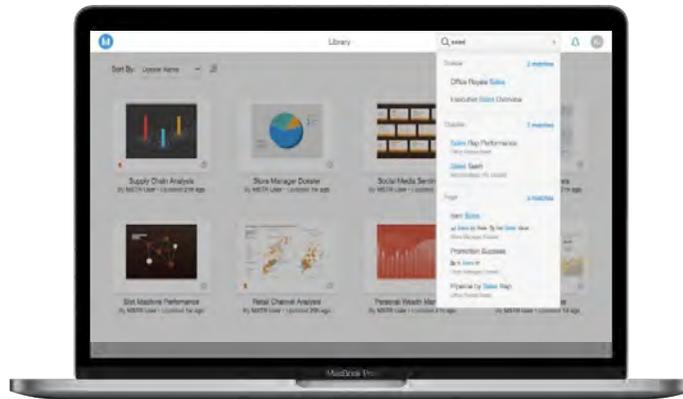
Users can take advantage of native touch-optimized gestures to manipulate content within their dossiers. Using long swipe, users can sort charts in ascending or descending order. Long and/or double tap displays a filtering menu with Keep Only, Exclude or Drill options. Users can also use free form lasso options to multi-select elements in visualizations.



MicroStrategy Library's powerful and modern new search functionality

Finding content using the MicroStrategy Library is exceptionally easy, with a powerful search engine that is driven by a simple and intuitive search bar. Business users can search based on dossier names, owner names, and even by the names of chapter or pages available within the dossier itself. Additionally, users can also search using business terms, or dimension names, metric names, and visualization names as well.

The search bar offers suggestions based on what the user query, which makes finding content faster and more intuitive.

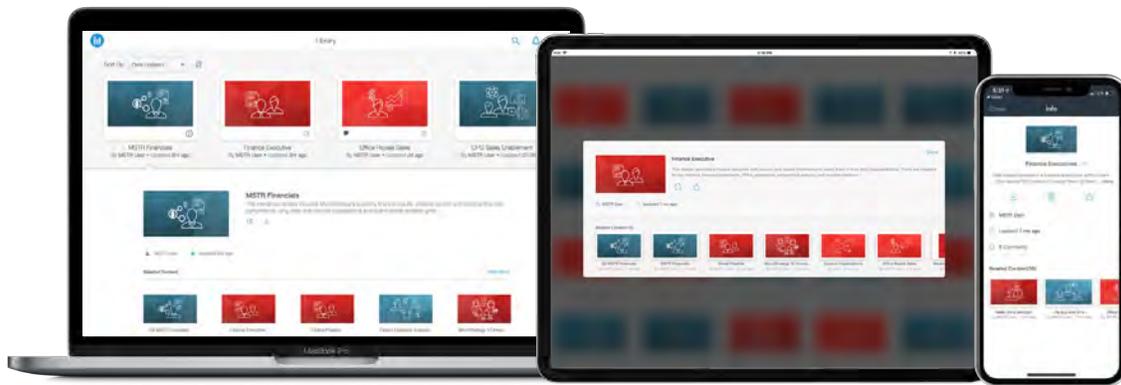


New notifications and comments made in Library will show up clearly as an alert, making sure that the user never misses an update.

Discover new insights with dossier recommendations, including on iOS and Android smartphones

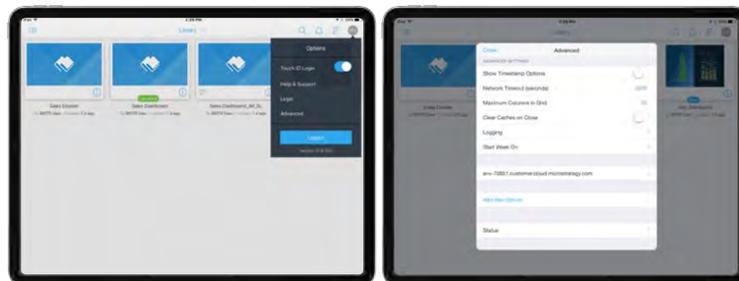
MicroStrategy makes it easy for business users to find new insights across an organization by making recommendations for content. With the Library, end users can easily see recommendations for other dossiers, based on recent updates, search terms and content within the dossiers. Dossiers that are “Certified” are also recommended with higher priority. End users can also intuitively search and find dossier recommendations in their Library app on mobile devices.

With MicroStrategy 2019, dossier recommendations are available for users on other products as well, including with MicroStrategy Desktop and Workstation. In addition to recommendations for dossiers, recommendations for Report Services documents are also available for users in MicroStrategy Workstation and Library.



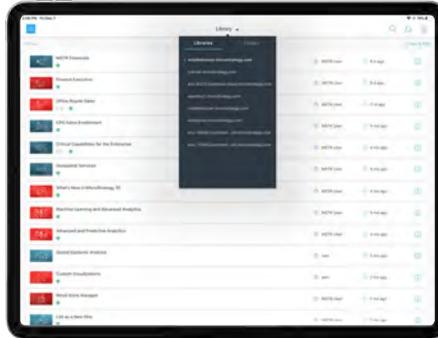
Easily configure Library in your mobile devices

Users can configure the app by tapping on a Library link shared with them and following the login prompts. Alternatively, users can manually add environments from the Advanced menu options.



Quickly toggle between different Library environments

Rather than having to re-configure the app each time, users can store multiple environment configurations in the Mobile app. With two quick taps, users can easily switch between different environments.



For users that regularly access dossiers in separate Libraries, this provides significant convenience and time savings. The app also includes Folders to access downloaded .mstr files and PDF exports. Rather than having to save these files outside of the app, these folders provide a convenient, internal location to store and view downloaded dossiers.



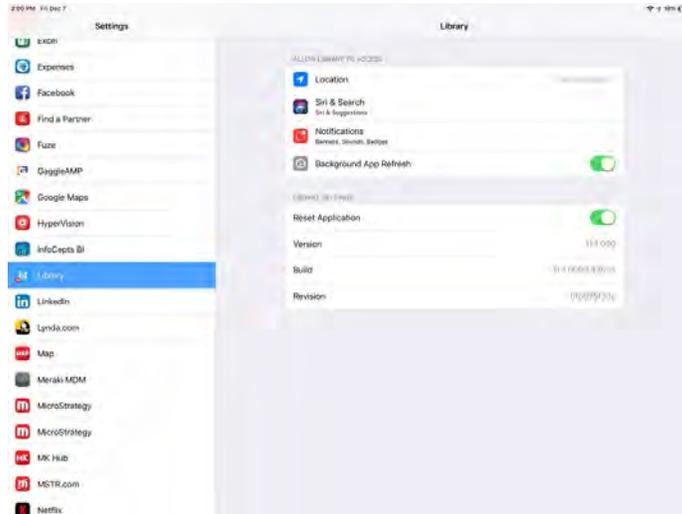
Offline transactions are now supported in Report Services Documents consumed in Library

From within the MicroStrategy Library for iPad and Android apps, users can consume Report Services Documents in offline mode, and can also download transaction-enabled documents and query transactions when offline. Users will receive notifications once the app is online and transactions are submitted, allowing users to consume RSDs via the Library app, while leveraging all the powerful new Library capabilities like collaboration.



Reset the Library from iPad

Users can reset the Library app from the iPad's Setting page to restore the original public App Store settings.



Walk through the onboarding experience for MicroStrategy Library on web and mobile

MicroStrategy provides introductory windows that offer simple product walkthroughs to help new users get familiar with the layout of the MicroStrategy Library. The walkthroughs are available for both MicroStrategy Web and Mobile.

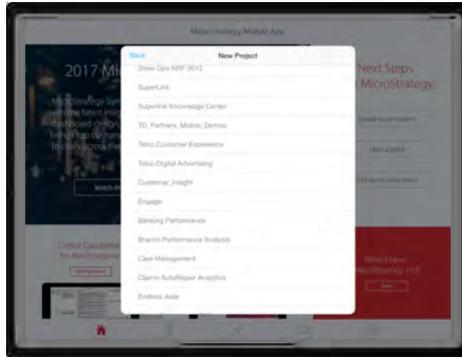


MicroStrategy Mobile

In addition to introducing the new Library app for mobile devices, new improvements are also available for MicroStrategy Mobile.

Sort projects directly from the mobile app

When users add a project manually via the Settings page in the mobile app, they can sort the projects alphabetically by name or by description; prior to 10.9, projects could only be sorted from oldest to newest. For customers who have many projects, this makes it easier and faster for users to find their desired project. This provides parity with MicroStrategy Web features to delivers a consistent user experience and behavior across different web and iOS interfaces.



Optimize image size and resolution with the Photo Uploader widget

Image resolution and size when uploading images via the Photo Uploader widget have now been standardized to achieve optimal app performance without compromising image quality.

Meet the enhanced, movable Information Window

In addition to the full screen option, Information Windows on Android can now be displayed on a specified portion of the screen. App developers can specify size and positions, but end users can also manipulate the display of the Information Window on demand. With so many different Android devices and resolutions in the market, this responsive design capability makes it easier for Android app developers to optimize user experience and provides end users with more interactive controls.

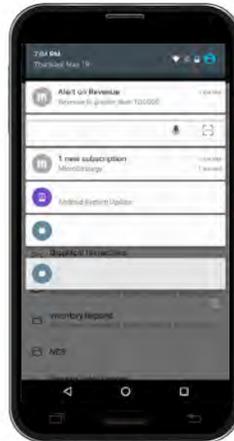


Go deeper with enhanced drill within capabilities in Report Services Document consumed in Library

Users can initiate the context menu and drill across multiple drill paths and levels to get into deeper level of their data in report service documents consumed in the Library, which are retained between RSD executions, and allow users to conveniently come back to the default state.

Get personalized alerts via push notifications in Android devices

Set up custom alerts based on changes in metric values, and leverage push notifications to send personalized alerts to Android users. Users can tap on the notifications directly to open relevant reports or documents.



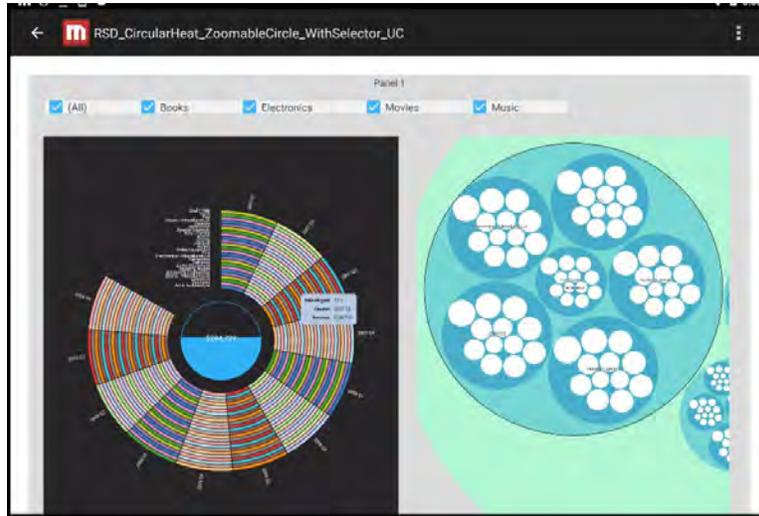
Get beautiful, optimized super retina displays on iPhone X and above

MicroStrategy Mobile now supports iPhone X Super Retina Display. This enables customers to leverage the latest Apple devices and take advantage of exciting new technologies such as Face ID and more.



D3 visualizations are now supported on iOS and Android

Mobile users can now access the widely popular D3 custom visualizations on their favorite Android and iOS devices.



Search within Geospatial Services in MicroStrategy Library app

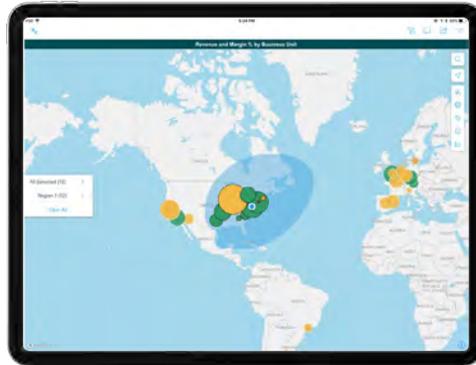
Users can search for attribute elements on maps directly from their iPad and Android tablets. The searched element gets highlighted in the map and provides users with the location and other information instantly. If the searched element is within a cluster, the whole cluster is highlighted, specifying the number of elements found within the cluster.



Experience context-aware, touch-optimized Geospatial Services for mobile

MicroStrategy's Geospatial Services, powered by a native integration with Mapbox, can be leveraged in the MicroStrategy Library app with all the available features in Library on the web. In addition to the functionality available on web, mobile users can leverage the following additional capabilities:

Geolocation prompts: The geolocation prompt filters data and pinpoints the exact location on the map with the device's GPS location services, providing users with rapid access to context-aware geospatial analysis. Users can opt out of sharing location data if desired.



Tilt and Rotate: Align the map with your fingertips to tilt and rotate the map view to have extensive control over the orientation of the map.

Native gestures for zoom and data selection: Use native gestures such as tap, pinch, and pan to interact with the map, including displaying information windows or zooming in and out swiftly. Users can leverage the free form lasso options to select a specific map area to highlight and filter key data points.

Home button: Reset the zoom level using the Home button in the map to quickly return to the default zoom setting.

New Features for Analysts

MicroStrategy 2019 lets analysts build applications from scratch in minutes, promote certified content to departments in under an hour, and scale to their enterprise in under a day. The new features in MicroStrategy empower more users to be data-driven with AI-augmented workflows, smart recommendations, natural language generation, and voice capabilities.

Analysts can build applications using desktop-based tools (MicroStrategy Desktop or MicroStrategy Workstation available on PC and Mac) as well as in a browser-based interface (MicroStrategy Web).

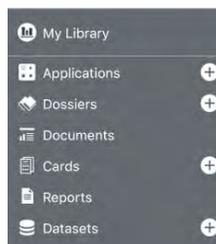
Build and deploy cards in MicroStrategy Workstation

Cards are a brand-new object available in MicroStrategy 2019 that are designed for use with the MicroStrategy HyperIntelligence extension for Google Chrome. Cards enable organizations to inject Zero-Click Intelligence – about customers, products, people, and more – directly into a user's existing web-based workflows. Once deployed, the extension automatically scans the content of every webpage a user visits, underlines predefined keywords, and elegantly surfaces relevant, contextual information to the user.



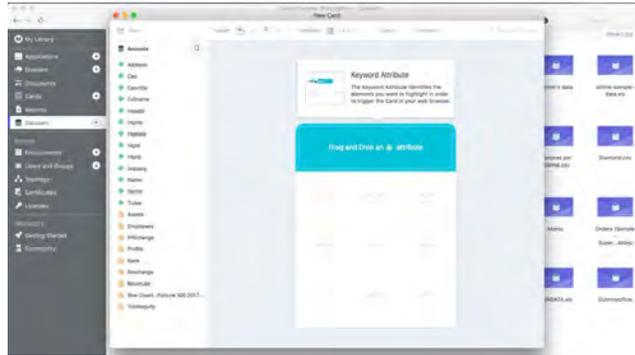
Cards can be built on new or existing cubes in your MicroStrategy environment – regardless of where the data is sourced from. For instance, an organization can deploy a card to their entire sales team that presents blended account information from their CRM and internal support database. In this scenario, whenever a salesperson sees a customer name in their email, on a spreadsheet, in a Google search, or on a website, MicroStrategy will instantly highlight the keyword. The user then simply has to mouse over the highlighted word or phrase to bring up the relevant card.

MicroStrategy Workstation, a powerful tool that combines administrative functionality with the ability to build and deploy dossiers and other applications, introduces a new smart folder dedicated to the creation and maintenance of cards. With Workstation, analysts can quickly build cards using predefined templates.



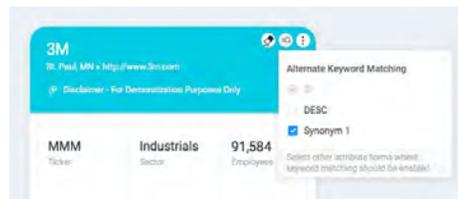
Drag and drop on Workstation to rapidly design cards

Workstation includes an intuitive, drag-and-drop interface that makes it quick and easy to build cards. Simply choose a keyword attribute (the attribute elements of which will be the items matched by the extension once the card is deployed) by dragging and dropping it into the header field. Then add the other attributes and metrics that you want to include to finish building out your card.



Alternate keyword matching to add secondary attributes to cards

Apart from the keyword attribute selected while creating a card, a card author can also add secondary attributes to match on, broadening the list of potential matches. For example, a card that uses 'contact name' as the primary keyword, could also be configured to match on secondary attributes such as an email address or phone number. Alternate keyword matching is also useful for synonym matching – this is especially important in scenarios where an attribute element can be referred to by different aliases. For example, "Robert Jackson" may also be known throughout an organization as "Bob Jackson".



Leverage templates, color palettes, and other formatting options to customize the look and feel of your cards

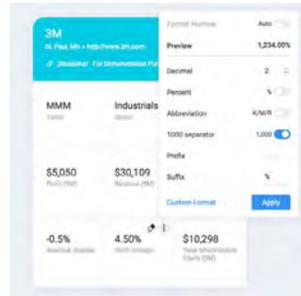
Within the design interface there are a variety of options that content creators can use to control the look and feel of an individual card.



Out-of-the-box card templates enable analysts to quickly build cards and control the number of KPIs that will be displayed on a given card. Card creators can also leverage a "compact" mode that squeezes the height of a card – reducing white space and providing a cleaner look in certain layouts.



Content creators can use a color picker to define the color of the card header and font.



Users can easily format attribute and metric values by clicking on the vertical ellipses icon on any object within the card template and choosing their preferred formatting options.



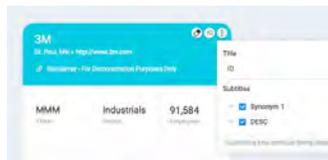
Easily rename an object from within the card editor by simply right-clicking on it and choosing 'rename'.

Add links, secondary attribute forms, and footers to enhance functionality

Additionally, there are a variety of options that analysts can employ to enhance basic card functionality and provide a richer experience for business users.



Add links to dossiers or other web content that enable users to click through on a card and access more detailed information.



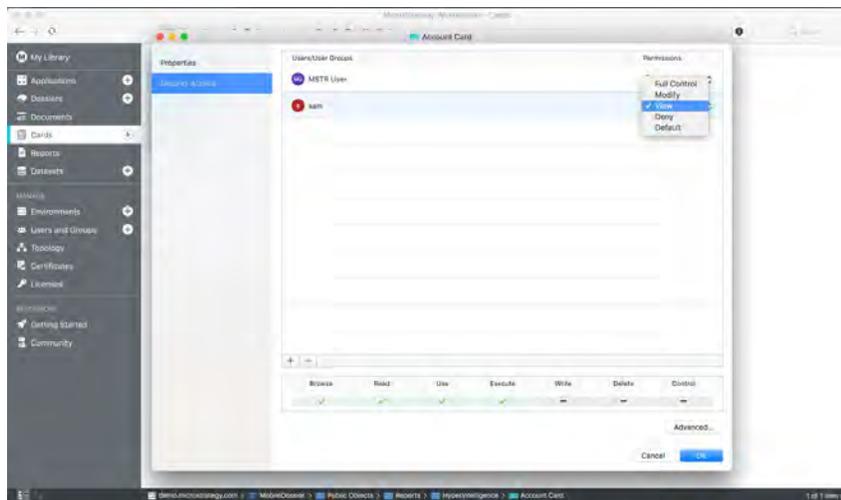
Add secondary forms for the Keyword Attribute to display additional information in the header. For example, a multiform customer attribute that contains customer name, customer city, and telephone number can be displayed in full.



Add a footer to highlight a long-form attribute such as status, need, or description.

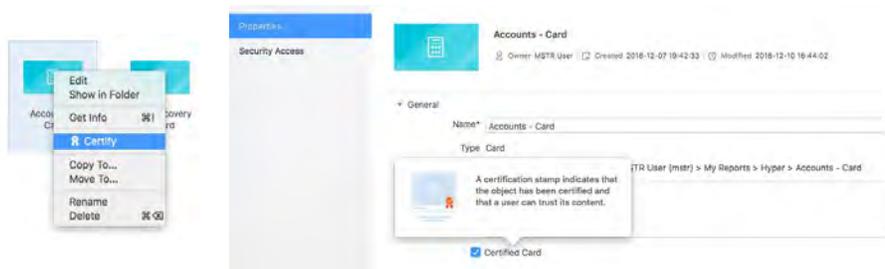
Control card access through user and user group access policies

Once a card has been created, developers have the ability to share it with users across the organization using the card's security access settings. Simply select the users or user groups who should have access to the card and it will automatically be made available to them through the Google Chrome extension. The extension requires users to authenticate to the MicroStrategy platform, which helps ensure a high level of data security.



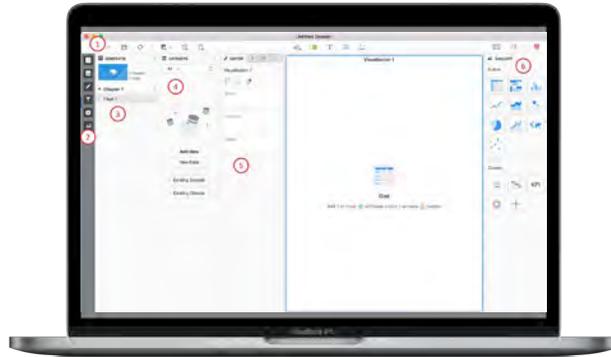
Certify cards using MicroStrategy Workstation

Certification is the final step in the card creation process, ensuring that information surfaced to business users is trustworthy. Only certified cards can be published to end users. Quickly certify cards within Workstation by either right-clicking on the card and selecting the "Certify" option or by selecting the "Certified Card" checkbox. The certifier privilege is required to certify content.

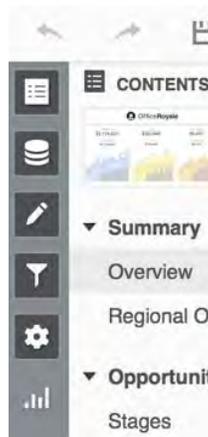


Modern Dossier Authoring on both Desktop and Web

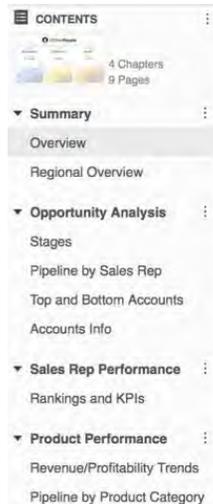
Web and Desktop offer completely overhauled interfaces that makes it easy for analysts to access data and build dossiers, find content, and even connect to a server and publish analytics to larger teams. Dossiers are a new method of building and consuming analytics. Dossiers sport a consistent, clean interface that provides fast access to key actions, more visualization options, and table of contents-style navigation. By removing clutter and presenting information in a way that anyone can instinctively understand, dossiers make analytics more accessible than ever. Desktop and Web have consistent features, and the various sections of the authoring interface are highlighted below.



1. Menu options on the top bar of the designer interface, available on both Web and Desktop, allow analysts to easily build and share dossiers on top hundreds of data sources. Analysts can use the above interface to perform the following actions:
 - Add new data
 - Refresh data
 - Add new pages or chapters, visualizations, text boxes to the dossier
 - Undo actions
 - Make formatting changes and add color themes
 - Share dossiers with others
 - View presentation mode
 - Access the responsive design editor for mobile devices
2. A revamped menu pane is available on the left, which helps dossier authors on both Web and Desktop easily show or hide different panels available for designing dossiers. Panels in the menu include the Contents Panel, the Dataset Panel, the Editor Panel, the Filter Panel, the Format Panel, and the Visualization Gallery.



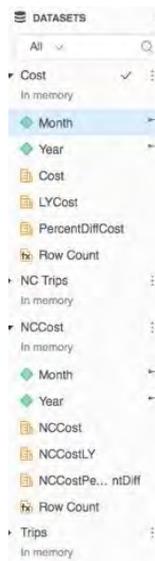
3. The Content Panel allows analysts to organize information into a Table of Contents view with chapters and pages, as an alternative to the tab views available in prior versions.



In addition to the Table of Contents view, also known as List View, users have the option to choose from tab views as available in the previous versions, which can be placed on both top and bottom.



4. The Dataset Panel allows analysts to see all the data sources and cubes that are connected to the dossier. All of the columns (attributes and metrics) of data that are available for visualization are listed in this panel. Analysts can drag and drop the objects (attributes or metrics) into the Editor Panel, in order to visualize information. Menu options to add new data sources are also available on this panel.

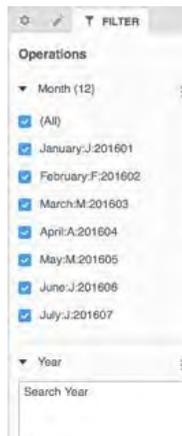


5. Editor Panel, Filter Panel, and the Formatting Panel

- a. Analysts can drag and drop data from the Dataset Panel to the Editor Panel in order to visualize information. Analysts can also right click on the objects (attributes and metrics) within this panel and format or reorder the objects.



- b. Analysts can drag and drop data into the Filter Panel in order to add filtering criteria within the dossier. Standard filters can be added to the individual chapters separately and can be based on attributes or metrics. Display styles include checkboxes, sliders, calendars, text, drop down, and radio buttons.



Analysts can now also create visual filters as well, just as simply as adding a standard filter. Designers can choose from any of the charts or graphs available on the dossier authoring interface (just as they would design a new visualization) and use it as a filter on other charts and graphs within the dossier. For instance, designers can use a map visualization as a visual filter, and users can click on bubbles or shapes on the map, to filter content down to that geography.

- c. The Format Panel allows analysts to format the charts and graphs with precise control. There are several improvements which offers more granular options for more flexible formatting on dossiers, depending on the type of visualization.



- 6. The Visualization Gallery allows analysts to choose from built-in and custom options to visualize data. MicroStrategy allows analysts to import new custom visualizations and other custom options to the gallery.



Get native and third-party data connectors for all your information assets

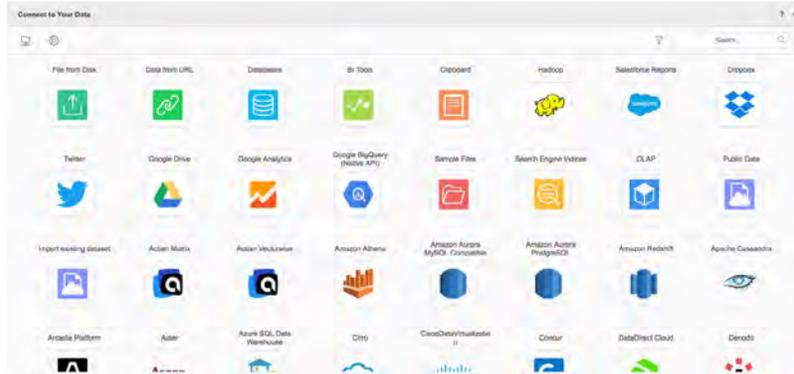
MicroStrategy offers analysts access to 150+ native drivers and gateways to access big data, relational database, NoSQL, MDX, and other information assets, on top of which they can easily build dossiers in minutes. Additionally, they can use integrated data preparation options to blend and transform data without leaving the interface or workflow. With an intuitive graphic interface, analysts can use point and click options to wrangle data using smart recommendations and visual profiling. They can also merge data using fingerprint and phonetic algorithms to completely transform and reformat their data and make it ideally suited for analysis.

Connect to 100+ out-of-the-box data sources

With a vast library of native connectors and drivers, MicroStrategy 2019 allows analysts to connect to any enterprise information source or asset, so you can fully leverage existing investments – including databases and files, Hadoop-based systems and query accelerators, cloud applications, physical access control systems, and custom connectors.

MicroStrategy 2019 provides instant access to data of any kind with out-of-the-box connectors to everything from personal spreadsheets to enterprise data warehouses and big data platforms. MicroStrategy delivers optimized connectivity to numerous relational database systems, multidimensional sources (MDX), Hadoop systems, and cloud-hosted data sources. The combination of these powerful connectors with MicroStrategy's multi-pass SQL engine, push-down architecture, and data blending capabilities makes the MicroStrategy platform uniquely suited to provide optimized performance and unmatched data access.

Action Ingres	Constant Contact	IBM Cognos TM1	Netsuite ERP	Sage Intacct
Action Matrix	Cloudera CDH	JethroData	Oracle Essbase	Salesforce
Action Vector	Cassandra	Kognitio WX2	Oracle Database Cloud	SAP HANA
Amazon Athena	Denodo	MapR	Oracle Sales Cloud	SAP Sybase ASE
Amazon Aurora	EnterpriseDB	Microsoft SQL Server Analysis Services	Oracle Service Cloud	SAP Sybase IQ
Amazon Redshift	EXAsolution	Microsoft Azure Analysis Services	Oracle Taleo Business Edition	Snowflake
Arcadia Data	Freshbooks Cloud Accounting	Maria DB	OBIEE	Splunk
Apache Solr	Google Drive	MarkLogic	OBIEE	SmartRecruiters
Amazon EMR	Google Analytics	MemSQL	Okta	SugarCRM
Apache HBase	Google BigQuery	Microsoft Azure Cosmos DB	Oracle MySQL	Salesforce Pardot
Apache Spark SQL	Hortonworks HDP	Microsoft Azure SQL DW	Oracle Database	SharePoint
Adobe Analytics	IBM Db2 for I	Microsoft SQL Server	Pivotal Greenplum Database	Tibco Data Virtualization
Base CRM	IBM Db2	MongoDB	PostgreSQL	Teradata Aster Database
BigCommerce	IBM Db2 for zOS	MongoDB BI	Pivotal HAWQ	Teradata
Bullhorn	IBM Informix	Microsoft Excel	Presto	Vertica
Box	IBM Informix Extended Parallel Server	Microsoft OneDrive	Pipedrive	Yellowbrick
Cirro	IBM Netezza	Microsoft Dynamics CRM	QuickBooks Online	WooCommerce
Cisco Data Virtualization	Infobright	Magento	SAP Netweaver BW	Zendesk
Close.io	Informatica Data Services	Microsoft Azure HDInsights	SAP Business Objects	Zoho CRM
Connectwise	IBM Cognos	MicroStrategy Hadoop Gateway	SAP Hybris Cloud for Customer CRM	Zuora



Connect to all your data with the gallery of custom data connectors

The MicroStrategy platform allows organizations to build custom connectors to nearly any data source and helps them tap into data sources for which connectors are not available out-of-the-box. With MicroStrategy 2019, analysts will have access to a public gallery for data connectors on the MicroStrategy Community. Community members will be able to download these connectors for their own use or enhance them further prior to integration.

The gallery currently includes several sample data connectors such as Fitbit, Elasticsearch, TapClicks, MuleSoft, Data.World, Neo4j, Exasol, Kafka, Kaggle, Yellowbrick, Solr, XML, SurveyMonkey, Jethro, MemSQL, Azure Cosmos DB, Cvent, OneDrive, and many more.

The gallery for data connectors can be accessed here: <https://community.microstrategy.com/s/gallery>



Connect to More than 30 New Cloud Applications

MicroStrategy 2019 offers support for several popular cloud applications, including Marketo, Hubspot, and Eloqua. In this platform release, MicroStrategy has added out-of-the-box connectivity for over 50 new applications, allowing users to connect to popular cloud applications, extract data, and import it as in-memory cubes, namely: Adobe Analytics, Amazon S3, Box, Microsoft Dynamics CRM, Netsuite ERP 2016, Desk.com, SugarCRM, QuickBooks Online, Zendesk, Microsoft OneDrive, SharePoint 2013, Zoho CRM, Magento v2.0, Oracle Sales Cloud, Sage Intacct, Autotask CRM, Bullhorn, Zuora, Freshbooks Cloud Accounting, SmartRecruiters, Connectwise, Base CRM, Close.io, SAP Hybris Cloud, Oracle Service Cloud, Constant Contact, Salesforce Pardot, Oracle Taleo Business Edition, BigCommerce, WooCommerce, and Pipedrive.

These new connectors help address the continued trend among organizations to move to cloud-based business applications, and allows MicroStrategy to serve as an enterprise analytical hub for everything from HR and CRM systems to T&E, accounting, and e-commerce.

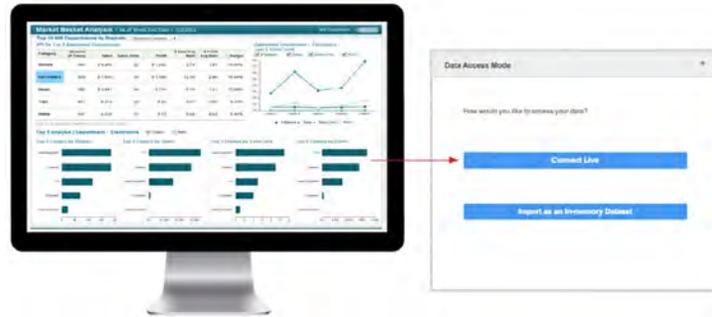


Connect directly to HDFS via the MicroStrategy Hadoop Gateway

MicroStrategy 2019 delivers a completely re-architected native connector for HDFS, called the Hadoop Gateway, which leverages the distributed data processing capabilities of the Hadoop cluster to provide significant performance improvements compared to ODBC-based connectivity methods. The new release also streamlines the setup process.

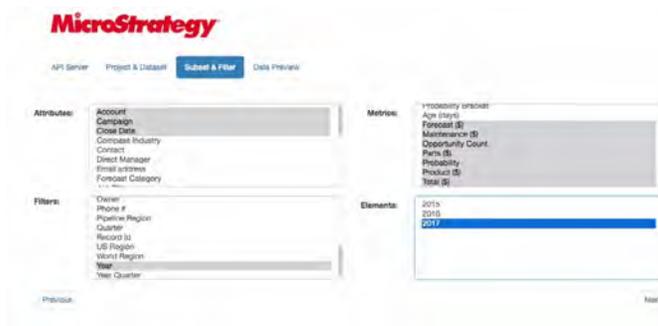
Analysts can refine datasets prior to cube publication via the native Hadoop Gateway, with graphical options to filter and aggregate data. With these new options, data can be filtered and aggregated to only access a subset of relevant information prior to loading any data into memory. All actions are performed on the HDFS cluster. With this incremental update, users can now wrangle, aggregate, and filter data at scale on Hadoop for Parquet, Text, CSV, JSON, AVRO, ORC files.

The Hadoop Gateway can not only connect to Hadoop and import data as in-memory cubes but can also be used to perform live queries against the data source using Live-connect. The ability to connect directly to Hadoop greatly reduces latency in accessing the file system and ensures that users have access to the most current data.



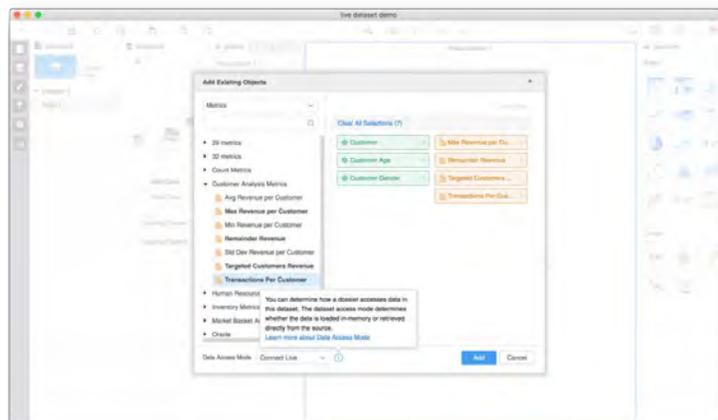
Access data across MicroStrategy projects

With MicroStrategy 2019, analysts can access datasets between projects. Analysts can use this connector, available on the MicroStrategy Community, to access cubes and reports from one project and build dashboards on another. This connector, built using the REST API, greatly increases the flexibility of sharing information and BI content across projects.



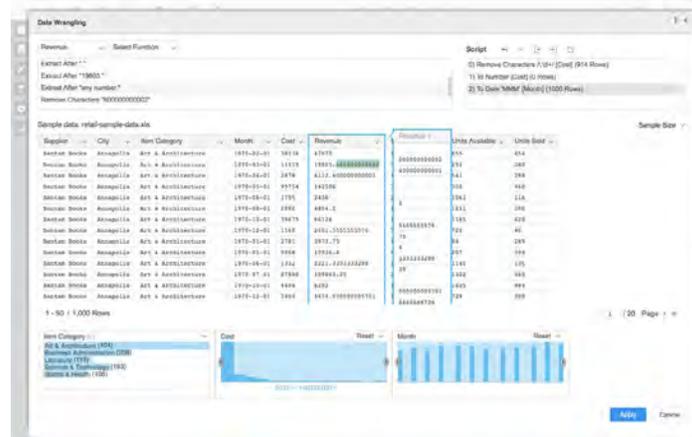
Access live data with project attributes and metrics

For all data authoring interfaces, including Desktop, Workstation, and Web, MicroStrategy offers users more options while building dossiers with schema objects. It is now possible to choose between two data access modes: connect live and in-memory access.



Wrangle and profile data prior to visual exploration

MicroStrategy 2019 allows analysts to prepare or wrangle data with an easy-to-use graphical interface. Analysts can split columns, profile data, remove white spaces, fill empty cells and more – all without leaving the workflow or interface. It's an integrated workflow, available on desktop and web interfaces, from connecting to your data source, to preparing and enriching data, to visualizing information with dossiers.



Ask questions and find insights with natural language queries

With MicroStrategy 2019, analysts can now simply ask questions or type business terms and find insights. By typing business questions or Google-like queries in plain text, MicroStrategy automatically generates the most appropriate chart or graph, displaying the answer as a stunning, interactive visualization.

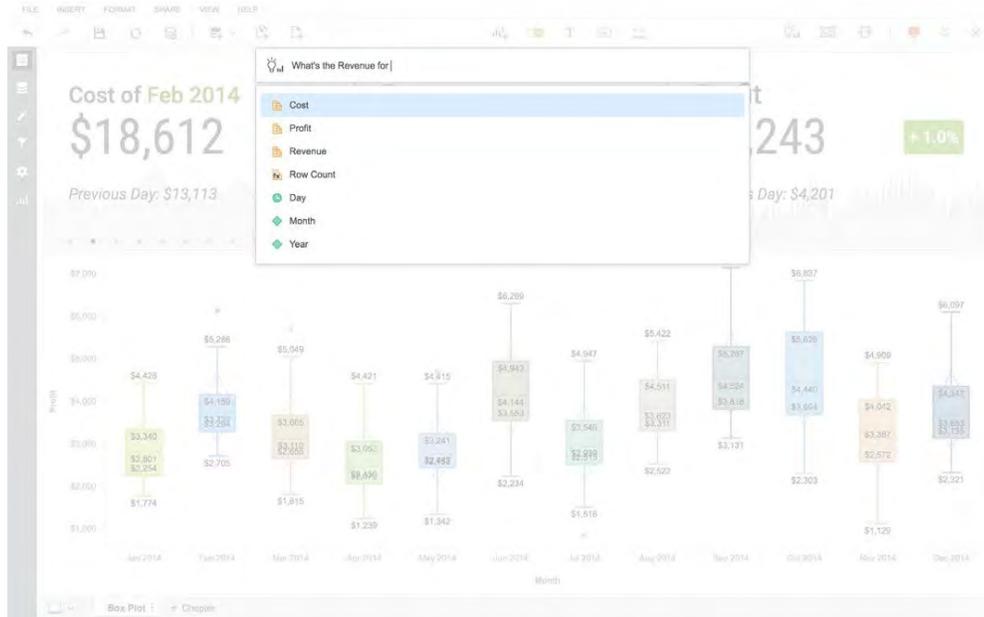
For instance, analysts can now type “what is my revenue” or “number of stores” or “top 3 cities by profit”, and the product will display the results on a visualization without requiring the user to specify a desired chart type. All visualizations automatically generated by the product can be further formatted and edited, like other visualizations, by adding color thresholds, trend lines, filters, and more.

What is the total GDP?

Show me the distribution of Medicaid Amount Reimbursed by Full State Name

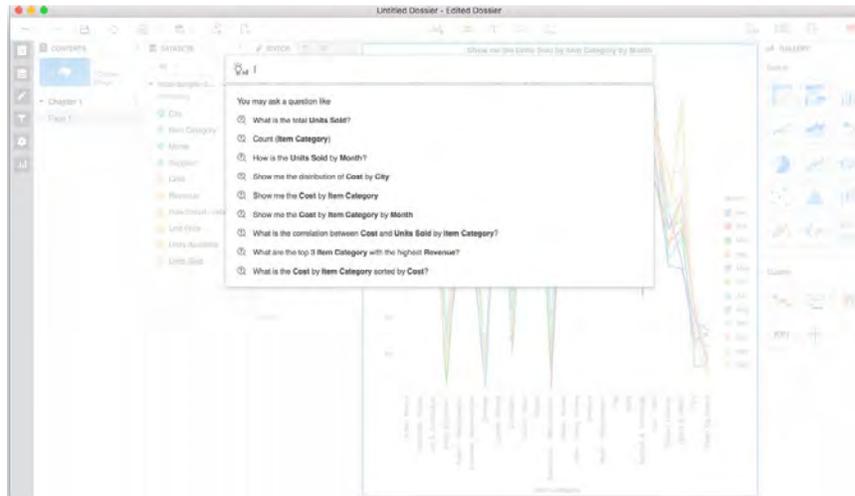
Show me the Medicaid Amount Reimbursed by FDA Product Name

Natural Language Querying is available out-of-the-box for English users in all authoring interfaces.



AI-powered recommendations for each terms and questions

To help analysts find insights faster, MicroStrategy leverages AI to recommend questions, like the Google search functionality, and search terms based on the dataset. These suggestions empower analysts to get started and ask questions that hadn't occurred to them. Analysts can dynamically include multiple dataset objects as part of the text-based query that can be entered into the search bar.

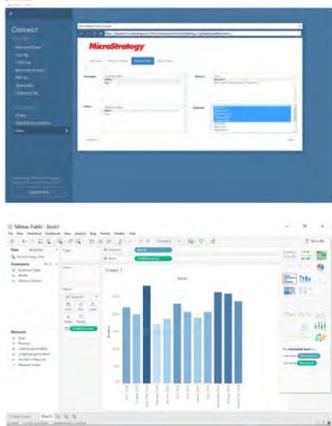


Connect to Tableau, Qlik, and Power BI

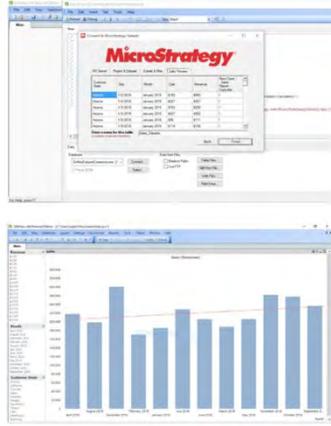
For end users who prefer using other tools, MicroStrategy 2019 offers connectors to other data discovery products as well. This allows analysts to use the tools they love on top of the platform they trust.

New connectors for Tableau, Qlik, and Microsoft Power BI help MicroStrategy create a more powerful and open analytics ecosystem. These new connectors enable business users who rely on different data discovery tools to bridge applications across the enterprise—eliminating fragmented data silos and allowing users to benefit from a trusted single version of the truth within their existing investments. Visit the MicroStrategy Community to learn more and download these new connectors.

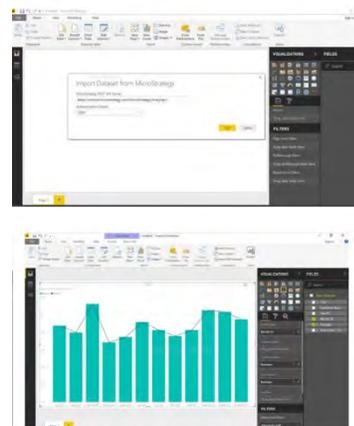
Tableau



Qlik



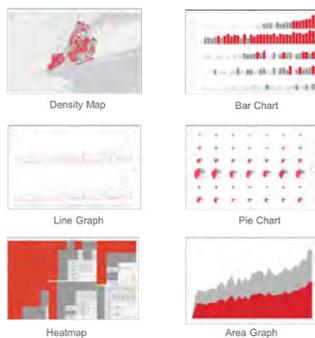
Power BI



Access an Extensive Library of Visualizations for Data Discovery

An extensive library of visualizations makes it easy for analysts to build dashboards or dossiers with data discovery. Users can quickly visualize data with out-of-the-box grids, graphs, charts, and maps. If that's not enough, it's easy to extend the visualization library to incorporate new third-party visualizations, like D3. Analysts can also interact with data and find insights with simple actions like drill, sort, and filter, or with more sophisticated actions that allow analysts to build metrics, predictive trend lines, color thresholds, and more.

Native charts and graphs



Third-party custom visualizations*

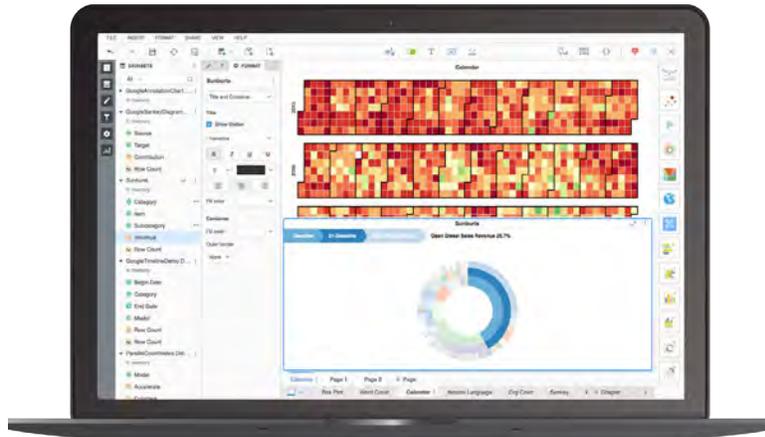


*D3 visualizations, courtesy of D3.org

Dossiers now support multiple versions of JavaScript libraries

With MicroStrategy 2019, dossiers support multiple open source and third-party visualizations on the same panel or sheet, even when they are on different versions of D3.js (the same applies to other JavaScript frameworks as well). Every visualization is self-contained, preventing multiple versions of libraries on the same sheet or panel of the dashboard from conflicting with each other. End users and designers need not worry

about including third-party charts and graphs that have older versions of JavaScript libraries.



Build intelligent narratives for analytics with NLG integration

Through partnerships with leading NLG platform providers Automated Insights and Narrative Science, MicroStrategy 2019 supports the use of artificial intelligence to produce intelligent narratives that describe the analytics users are viewing. The new feature interprets charts and graphs into clear and meaningful narratives that explain the context of hidden insights in data.

MicroStrategy certifies integrations with Automated Insights and Narrative Science and makes extensions available to both technologies, enabling end users to leverage NLG to translate structured data to text in order to facilitate data discovery. Pre-configured plugins for both Automated Insights and Narrative Science are available in the Visualization Library on the MicroStrategy Community.

The process of incorporating these new plugins into dashboards is similar to including custom visualizations from the Visualization Library. Plugins are available for download from the MicroStrategy Visualization Library, with detailed set up descriptions. The following NLG plugins are supported with MicroStrategy 2019:

- QuillTM platform by Narrative Science
- WordSmith by Integrated Insights



Make data, charts, and dashboards more accessible to more people by providing textual descriptions and interpretation with NLG integration

Geospatial Services

MicroStrategy 2019 also introduces Geospatial Services and delivers new mapping capabilities powered by a native integration with Mapbox. The enhanced mapping capability is available for dossiers on all interfaces, including MicroStrategy Desktop, Workstation, Web, and Library (Mobile included). With Geospatial Services, MicroStrategy now offers advanced geospatial analytics features that allow users to get more out of their location data. This new map visualization is available in addition to out-of-the-box ESRI maps.

The new vector-based mapping option doubles the functionality of existing out-of-the-box ESRI maps. Vector maps are an advanced approach to mapping where features are rendered faster and smoother, providing an exceptional user experience. Users can rotate or tilt maps and zoom in or out more fluidly than before. Icons and labels adjust automatically depending on zoom levels, offering clarity from any angle.

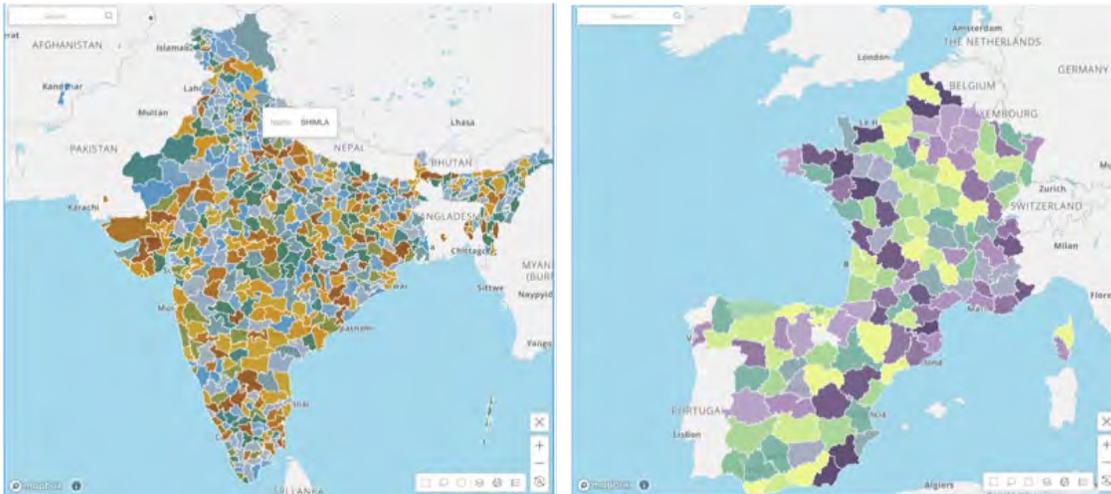
MicroStrategy 2019 will offer two mapping options in the Visualization Gallery: Maps with ESRI (which is available out-of-the-box with the Intelligence Server) and the new Geospatial Services with Mapbox, which will be available as an add-on service for the Intelligence Server. Both ESRI and Geospatial Services will be available out-of-the-box with Desktop and Workstation.



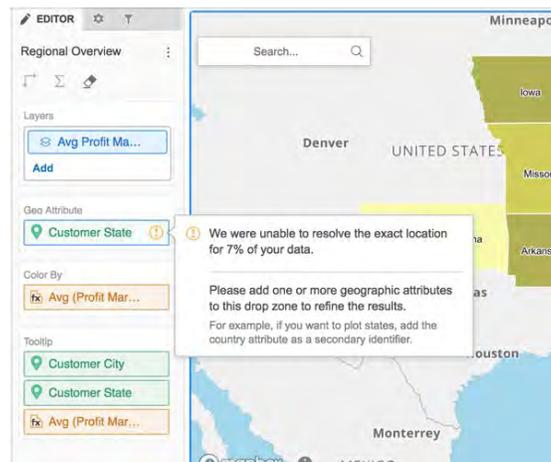
Plot global polygon shapes to the zip or postal code level

With MicroStrategy 2019, users can leverage Geospatial Services to plot polygons on a map with global coverage down to the zip code or postal code level. Polygon shapes for maps are available for:

- More than 150 countries
- All states (US and international)
- Zip or postal codes (US and international)



Additionally, by adding a secondary geo-attribute, it is possible to easily resolve conflicts where multiple locations have identical names. If a dataset contains information for both Paris, TX, USA and Paris, France, users can easily resolve which data point is in France and which one is in the US. This feature is currently only available for area maps.



Use multiple map styles for geospatial data

With the new Geospatial Services, users have multiple options for map styles. Users can select from the following style options: Basic, White, Light, Dark, Street, Topographic, Physical, Relief, Satellite and Satellite Street styles.

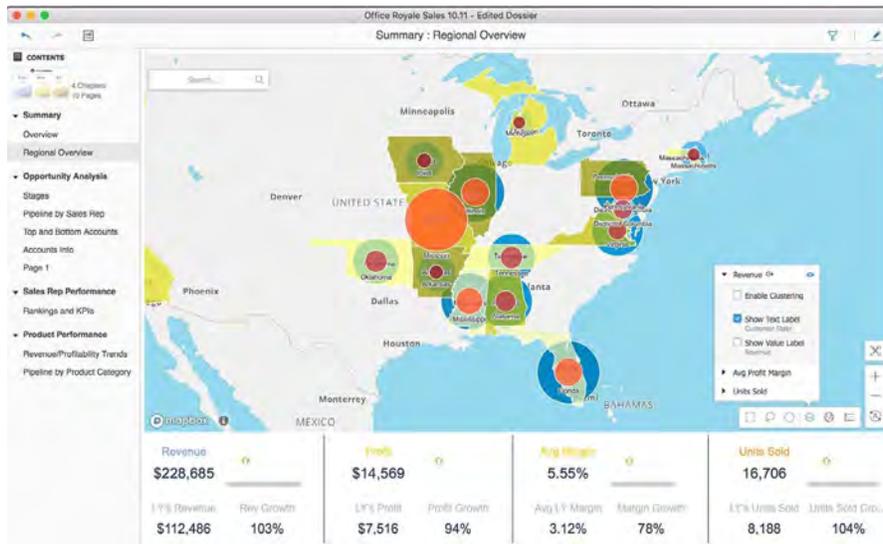


Experience enhanced mapping interactivity

Mapping with Geospatial Services is based on vector maps, ensuring faster performance and response times, and allowing greater interactivity.

Interactivity options include:

- Options to zoom in or out and to automatically drill into data at a more granular level in any location around the world
- View base map labels in local language and choose between metric and imperial units for distance.
- Multiple data selection options to highlight and select specific or multiple data points using rectangular, lasso, and circular selection tools
- The ability to display tooltips with supplementary information
- The ability to layer and display multiple metrics on the same map in which each layer can leverage different graphic types, including markers, bubbles, and area charts. Users can easily toggle each of these layers and modify the order of the layers. It is also possible to hide or display layers on the map. Clusters and data labels can also be controlled at the layer level.
- The ability to tilt and rotate the map to view different angles and find new perspectives.
- Reset the map zoom with a reset button to reveal all the data points



Get more control when aggregating data into clusters

Users can now enable and disable clustering data points on a map for more control. The screen below shows the formatting properties panel that allows authors to dynamically control zoom levels for clusters.



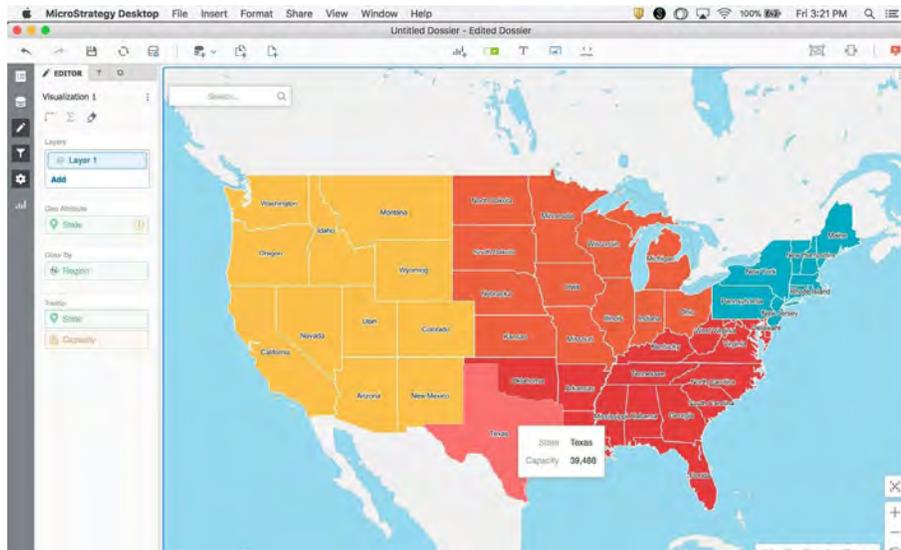
Display dynamic layers based on zoom levels

With the new Geospatial Services, analysts can opt to display specified data layers at different zoom levels. This allows analysts to create maps that do not look cluttered with too many data points and only show data that is relevant to the zoom level. For example, as the user zooms in, he or she can see more granular levels of information that is not displayed when the map is zoomed out.



Color maps by attributes

Authors can add color thresholds to attributes or dimensions, which was previously only available with metrics, in order to differentiate business dimensions on a map.



Product Comparison: MicroStrategy Geospatial Services vs. Existing OOTB Maps

Use Case	Mapping Visualization (ESRI)	Geospatial Services (Mapbox)	ESRI Enterprise Integration
Integration Type	OOTB, Free	OOTB, Paid	Need Enterprise Key
Display base map, change map styles	✓	✓	Only one base map is supported at a time
Plot data as bubbles, markers	✓	✓	✓
Plot data as area maps out-of-the-box	✓	✓	
Plot data as pie	✓		✓
Plot data as density map	✓		✓
Support for KML files	✓		
Support for ESRI shapefiles	✓		No, but custom shapes are supported in form of layers on base map
Multi-layer data visualizations	✓	✓	✓
Thresholds/Conditional formatting to the markers (color by metric)	✓	✓	✓
Enable/Disable clustering at layer level	✓	✓	✓
Zoom in/out or Pan (left, right, top, bottom) the map	✓	✓	✓
On-Premise Mapping Support			✓
Supported in Report Services Documents (RSDs)	✓		✓
Supported in dossiers	✓	✓	✓
Supported in MicroStrategy Mobile (Platform)	✓ (Rendered on Apple Map on iOS Devices and Google Map on Android)		
Supported in Mobile Library	✓ (Rendered on Apple Map on iOS Devices and Google Map on Android)	✓	
Display affinity lines on the map	✓ (Documents)		✓ (Documents)

Display path on the map	 (Documents)	 (Documents)
Reset (zoom/Pan) to the original view		
Global coverage down to postal code level (for area maps)		
Show/hide map layers based on zoom level		
Advanced clustering options		
Add thresholds formatting by attribute		
Same name location identifier and resolution when plotting locations with common names for area maps		
Local language labels		
Change the unit of distance for selection tool (km/miles)		
Show/hide base map labels or move to front or back		
Updated Tooltip, Legend		

Get More Out-of-the-Box Visualizations

MicroStrategy 2019 introduces advanced visualizations with extensive use cases for scientific and marketing analyses.

Utilize the new KPI visualization

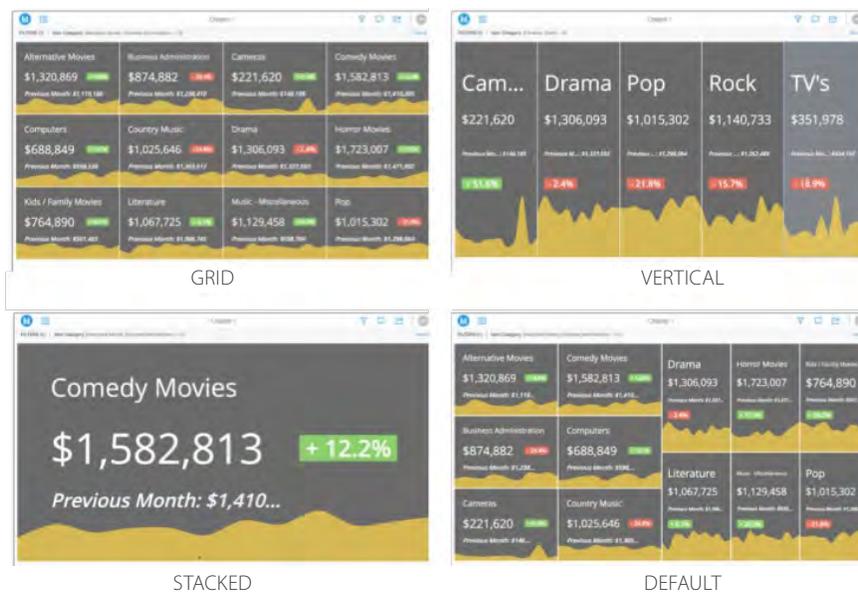
MicroStrategy 2019 introduces a new, out-of-the-box visualization to view and track key performance indicators (KPIs). This new visualization displays the current value of any KPI on a single card. It is also possible to break KPIs by any attribute, such as region or month, for more detailed analyses, which will add more cards to the same visualization.

Each card will represent a value for each element of the attribute. There is no restriction on the number of cards that can be displayed.

Users can add a trend line to each card by adding a time dimension, and easily see how the KPI performs over time. Users have the option to add a trend indicator badge to show change as a value or a percentage. The visualization offers formatting options and allows designers to assign colors, which is useful in depicting sentiment, such as a positive or negative value.

Cards within the same visualization can be organized to be displayed based on design considerations and screen size. Users can change the display mode of the cards to:

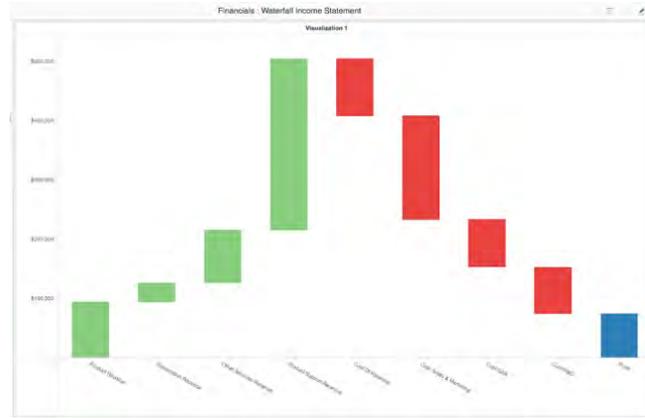
- **Default**—MicroStrategy will choose the most optimized display of cards to increase readability.
- **Stacked**—This shows a single card and stacks other cards underneath the first, so users will need to manually swipe between cards or select the Auto Play option to see other stacked cards.
- **Vertical or Horizontal**—These show all the cards displayed vertically or horizontally within a visualization.
- **Grid**—Distribute all cards evenly in a matrix display, where users can choose the number of columns to display.



Visualize cumulative effects with a waterfall

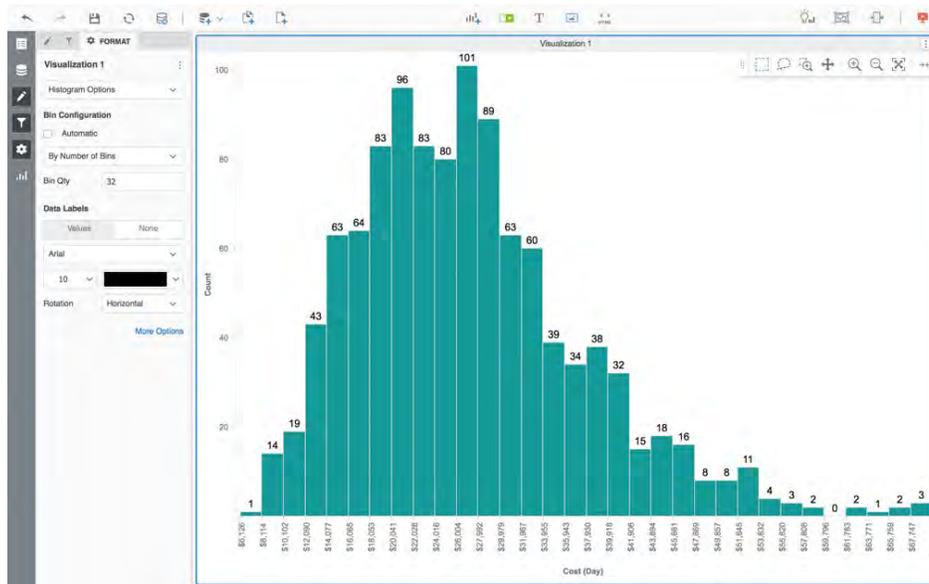
This new visualization can be leveraged to show the cumulative effect of sequentially introduced positive and negative values, culminating in a final value. The color on this chart shows how the initial value is affected by intermediate positive and negative values. Intermediate values can either be time-based or category-based.

Like other built-in visualizations in MicroStrategy, users can format and customize the chart as needed. The properties panel offers formatting options to customize colors for positive values, negative values, and totals.



See distributions with a histogram

The histogram visualization can be used to reveal the underlying frequency distribution of a metric. The data is divided into intervals, called bins. Each bin displays the number of occurrences of the values in the data set contained within that bin. In a histogram, the height of the bar indicates the frequency of the values in that bin.



Identify outliers with a box plot

The box plot is a popular way to display the distribution of data and visualize outlier values. It is a standardized way of displaying the distribution of data based on five data measurements: the minimum, the first quartile, the median, the third quartile, and the maximum. The boxes in a box plot are the first and third quartiles of the data with a line indicating the median value. The whiskers indicate the variability outside the upper and lower quartiles.

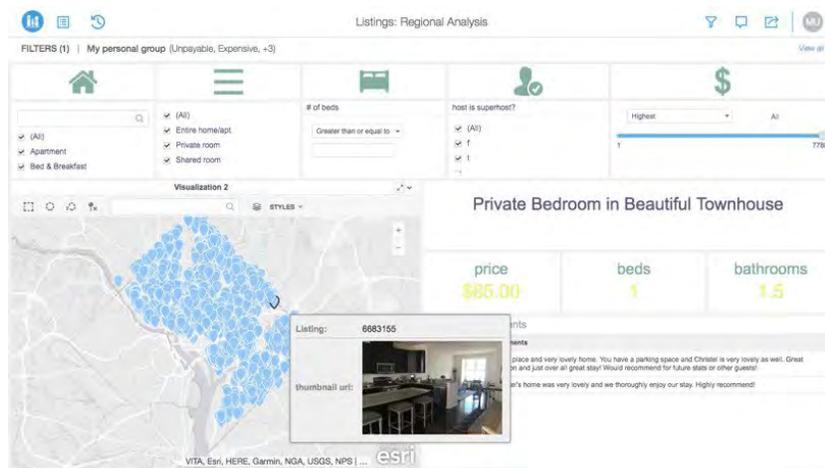


Powerful filters make dossiers intuitive, personalized, and interactive.

In-canvas filters, visual filters, advanced qualifications, page-to-page linking, and more make dossiers exceptionally interactive.

Place filters anywhere with in-canvas filters

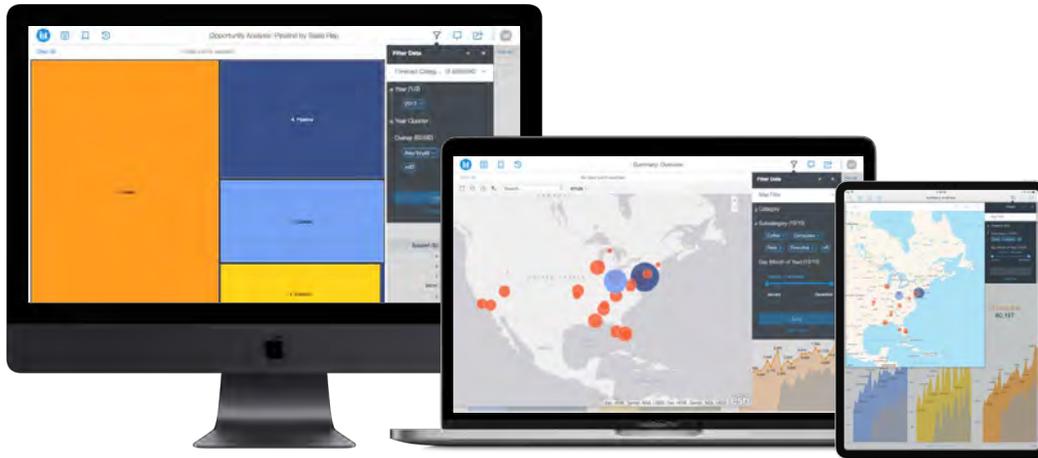
In addition to using standard filters or visual filters, both of which are available within the filter panel, dossiers can also include filters within the main canvas itself. The filters can be formatted as selectors on the dossier interface itself and can target other visualizations on the canvas.



Use charts as visual filters

Additionally, existing charts and graphs on the dossier can also be used as filters to control the data on other visualizations in the dossier. Presenting selections in new filter panel enables the user to make more informed selections and frees up dashboard space to focus on the results.

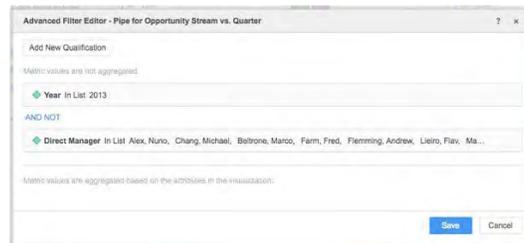
Available both in web and mobile, this new feature makes it more visually intuitive to narrow focus within a dossier. It is especially useful when the number of data points are extremely high for a standard drop down or radio button filter. With visual filters, business users can use bar charts, pie charts, or even geographical maps as filters within the filter panel – making it incredibly easy to limit the data and focus within a dossier. The examples below highlight a heat map and a geography map, both acting as visual filters within the dossier consumer interface.



Distill new insights with advanced qualification filters

The new filters within dossiers are not only intuitive but also powerful, as they can include complex filtering conditions and set analysis. Advanced filter qualifications can be included at the visualization level with the following options:

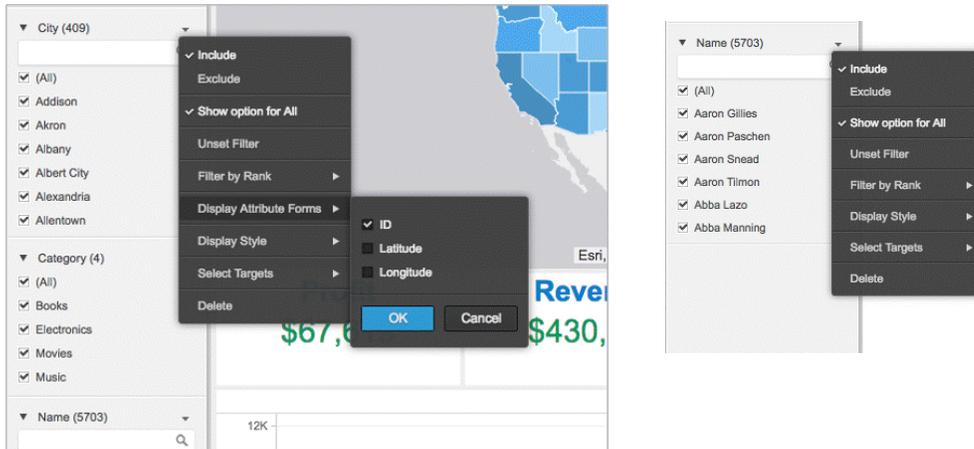
- Attribute form qualifications (contains, begins with, ends with, etc.)
- Attribute element qualification (in list, not in list)
- Set operators for Filters (AND, OR, OR NOT, AND NOT)
- Relationship filters



Get enhanced filtering options for dossiers

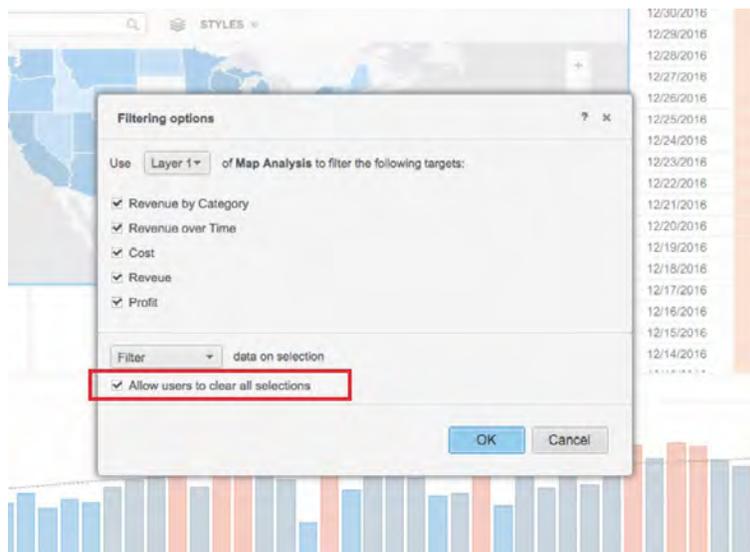
MicroStrategy 2019 introduces two useful options for filters. First, users can select what attribute forms are displayed in the filter panel and in-canvas selectors. This enhancement enables an uncluttered and more readable selector when attributes have multiple attribute forms.

Second, a new option lets users show or hide the “All” elements. This option is useful to limit the amount of data that is rendered on the dashboard.



Additionally, MicroStrategy 2019 offers more granular control for end users when interacting with dashboard filters. The new properties allow end users to build dashboards, with or without displaying the option to clear all selections when using a ‘visualization as a filter’ within a dashboard.

This option prevents end users from unselecting all the data points in a visualization. Having at least one data point selected on a visualization as a filter prevents the user from fetching an excessive amount of data, which prevents dashboards from hanging and avoids high response times. Finally, it lowers stress to the database especially when users have live connections to datasets.



View Filter in Presentation Mode for Documents

MicroStrategy 2019 also supports view filtering on grids and graphs in documents, when run in presentation mode. Users will have more interactive options and can now include filters on-the-fly, even when they are in presentation mode.

CAL County	Commuter less than 30 public	Commuter less than 30 other	Commuter 30-44 public	Commuter 30-44 other	Commuter 45-59 public	Commuter 45-59 other	Commuter greater than 60 public	Commuter greater than 60 other
ALAMEDA	221,135	4,762,275	669,330	4,131,676	774,635	2,717,735	1,113,445	5,168,165
ALPINE	20	3,235	0	3,975	0	1,325	0	1,540
AMADOR	370	96,025	290	87,245	0	49,300	1,020	163,070
BUTTE	9,840	673,905	6,450	331,870	4,420	134,720	6,620	460,875
CALAVERAS	175	32,440	320	96,020	425	89,240	300	237,465
COLUSA	155	54,570	245	30,355	0	19,840	340	49,625
CONTRA COSTA	53,050	2,809,905	229,475	2,600,795	424,755	1,998,250	1,554,520	4,909,635
DEL Norte	1,420	73,985	0	17,810	1,345	10,150	300	18,590
EL DORADO	4,965	521,940	10,750	397,220	6,025	391,650	43,660	712,475
FRESNO	25,140	2,971,295	38,570	4,335,650	28,955	458,435	133,290	1,315,295
GLENN	90	73,985	150	50,750	315	19,370	510	56,240
HUMBOLDT	3,750	456,210	4,040	180,930	4,945	83,440	8,900	171,885
IMPERIAL	3,960	389,650	5,870	162,808	970	59,200	27,600	202,520
INYO	235	56,585	120	11,285	0	17,365	1,740	28,270
KERN	15,300	2,174,470	24,990	654,990	19,200	458,600	79,800	1,536,150
KINGS	9,980	348,580	5,300	203,565	960	119,030	6,270	163,385
LAKE	425	140,635	330	86,515	1,575	52,145	420	254,305
LASSSEN	40	88,520	285	25,510	380	14,135	2,135	51,935
LOS ANGELES	863,825	29,362,575	2,316,525	26,771,810	1,699,700	15,919,305	7,603,645	26,682,940
MADERA	1,035	310,770	2,860	252,940	910	152,470	13,300	318,250
MARIN	17,910	746,465	79,430	688,910	137,915	613,210	484,270	963,430
MARIPOSA	295	45,965	0	25,720	400	25,365	8,000	94,725
MENDOCINO	935	291,540	930	119,220	1,305	58,065	9,410	231,475
MERCED	3,455	567,435	6,570	254,055	645	197,260	9,665	314,690
MONOC	25	25,200	0	7,695	15	3,445	0	7,125
MONO	2,955	47,320	960	32,340	0	11,180	540	22,755
MONTRESEY	21,380	1,489,110	30,770	611,425	15,435	349,190	57,255	900,660
NARA	2,555	443,050	9,860	271,630	1,385	156,725	27,155	410,645
NEVADA	810	341,315	2,440	152,205	3,700	89,095	9,240	372,590
ORANGE	148,200	11,923,280	311,995	6,445,620	191,665	4,505,600	1,164,295	7,586,770
PLACER	4,990	664,495	4,795	395,894	14,430	699,416	70,560	309,465

Page-to-page linking enables easy updates within dossiers

With MicroStrategy 2019, users can use a visualization on a particular page to control other visualizations on the same page or on any other page within the dossier.

To add these filters, analysts can click on “select targets” and choose from visualizations that will be listed on the dossier. This feature gives consumers a far more intuitive and powerful means to switch between pages and chapters, while carrying forward the necessary context.

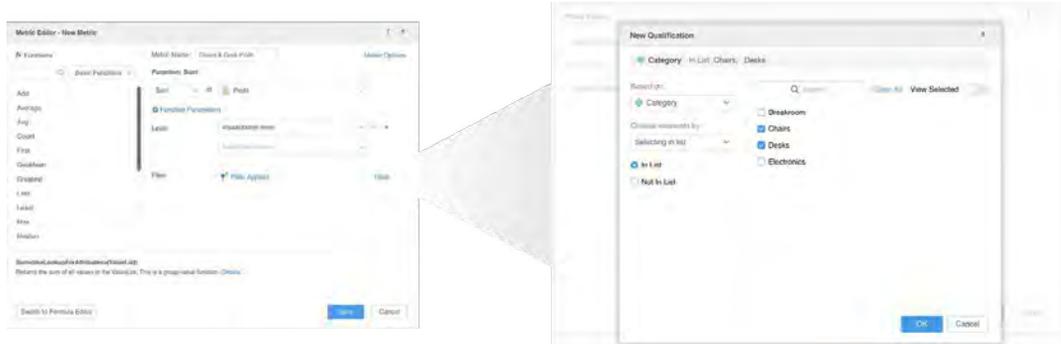
The left dashboard displays 'Opportunity Analysis: Pipeline by Sales Rep' with filters for 'Forecast Category', 'Year (2017)', and 'Owner (Alex Collins, +10)'. It features a 'By Regional Managers' chart and an 'Accounts Detail by Owner' table. A 'Select Targets' menu is visible over the table. A red arrow points from this menu to the right dashboard.

The right dashboard displays 'Sales Rep Ranking' and 'Financial Overview' charts, showing various performance metrics and account details.

Create conditional metrics for dossier authors

Analysts on MicroStrategy Web, Workstation, and Desktop will be able to apply filters to specific metrics on a visualization, creating conditional metrics. The condition or filter is applied at the column level, offering authors the ability to create more powerful use cases where users can target one metric without affecting other metrics in the same visualization.

This new option is available directly in the Metric Editor under the Advanced Filter editor in any MicroStrategy authoring tool.

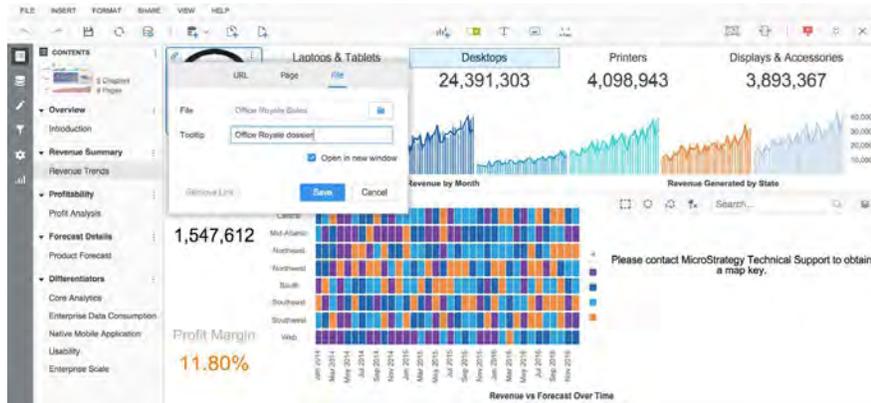


Add direct links to other pages or to separate dossiers, reports, and documents

With MicroStrategy 2019, analysts can now add direct links within a dossier to:

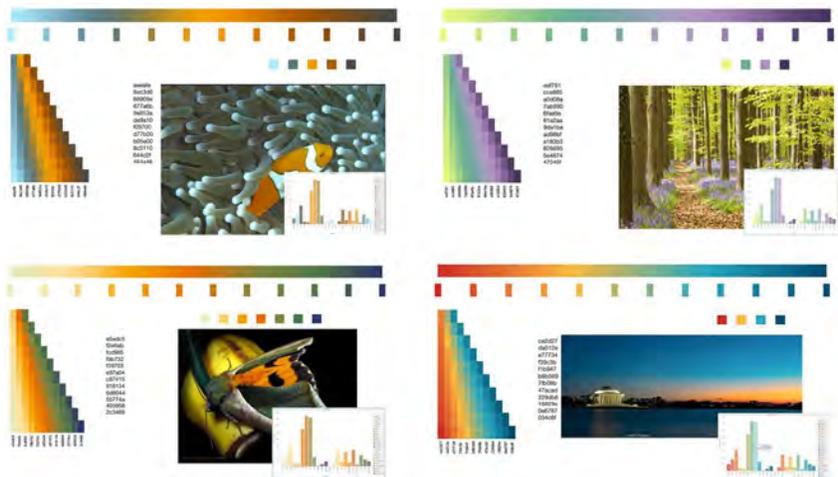
- Any external URL
- Other pages within the dossier
- Other dossiers, reports, or documents (when connected to a MicroStrategy environment)

This will help authors of dossiers embed workflows that provide consumers with options for guided analyses. Authors can add links via Desktop, Web, or Workstation.

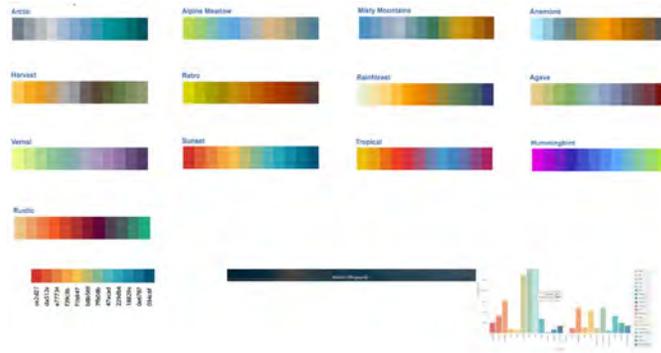


New color palettes offer more customization options

MicroStrategy 2019 offers several new color palettes out-of-the-box. End users now have more options when deciding dashboard color themes, improving dashboard aesthetics with little effort.



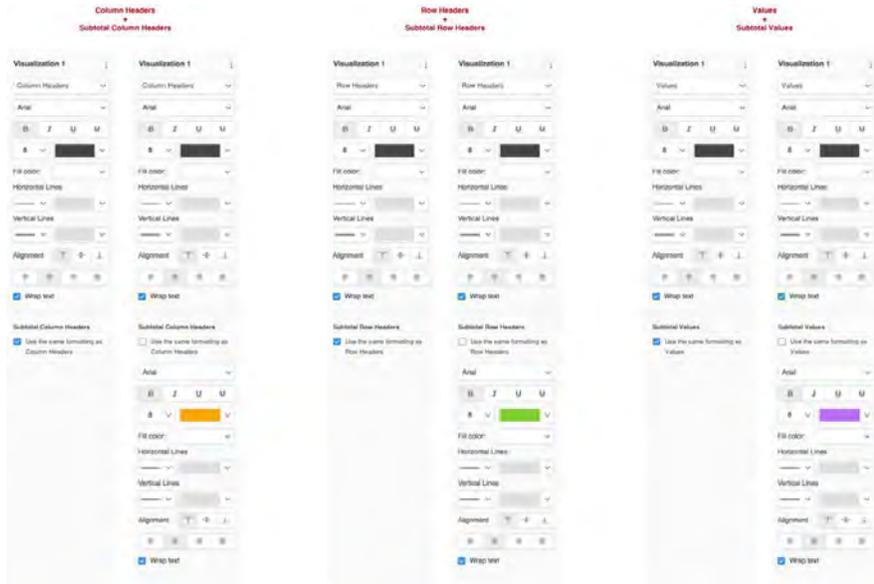
The new palettes, inspired by natural landscapes, provide more options for users to build visually pleasing dashboards better suited for their tastes or aligned with their organization's color themes. More out-of-the-box palettes also ensure consistency when sharing a dashboard or a .mstr file to other users.



New formatting options for totals are now available

Previously, when users changed value formats through the floating Format menu or Properties panel, formatting applied to the entire grid, including the subtotal row. Subtotal rows can now be formatted independently from values on the grid.

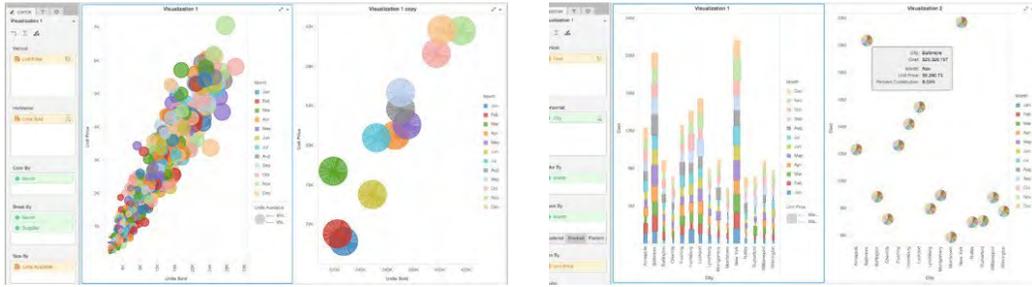
With this new enhancement, dashboard designers can assign different formatting rules to subtotal rows on grid visualizations, without affecting the rest of the values on the grid.



Switch between shape types with ease

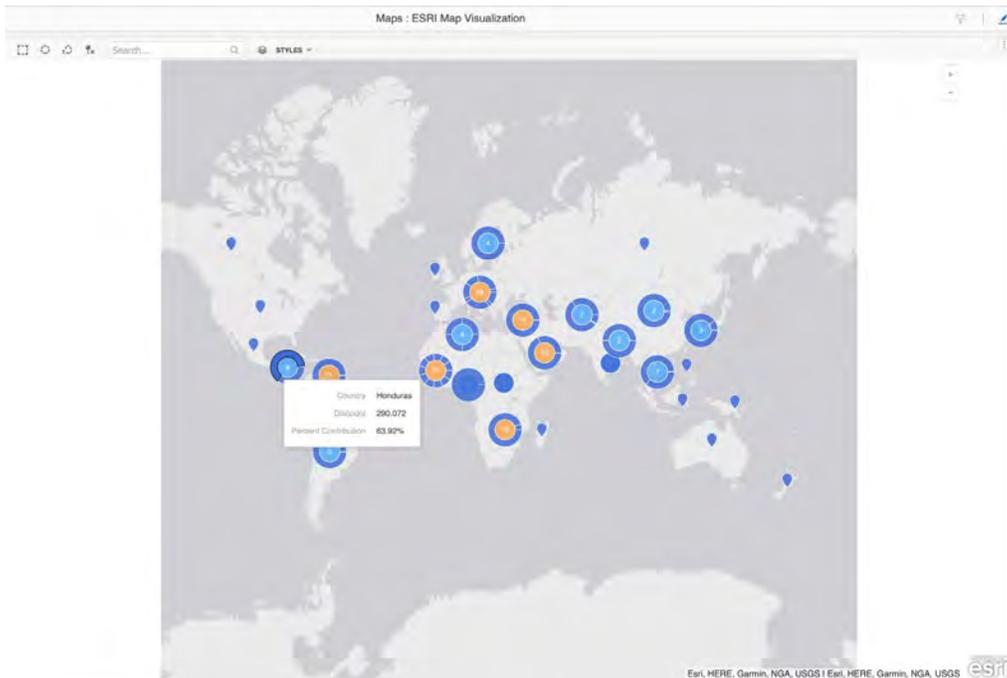
Consumers can now easily switch between shape types for certain graphs, without losing existing formatting. For example, when a bar chart is changed to a bubble chart, the new bubble chart will retain the original formatting from the bar graph.

This enhancement facilitates the data discovery process, allowing users to confidently switch back and forth between shape types.



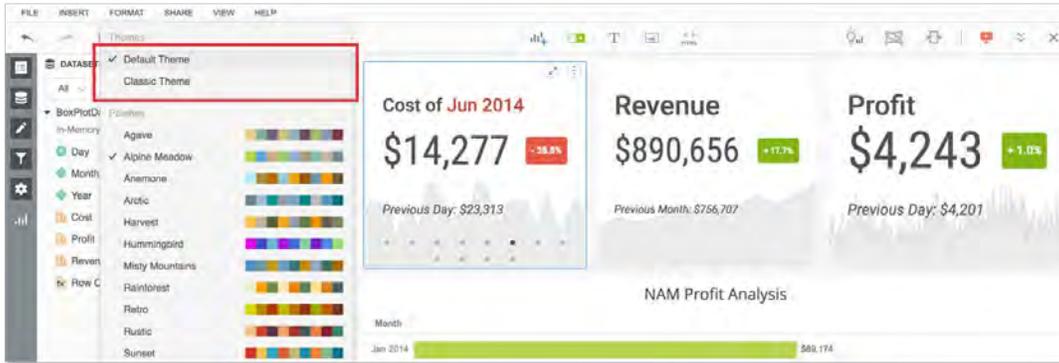
Plot pie chart markers on ESRI maps

The ESRI map that is available out-of-the-box for data discovery, allows you to display pie charts and ring charts on top of maps. Users can specify the dimension that will slice the pie chart using drag and drop options and easily compare multiple attributes on a single map.

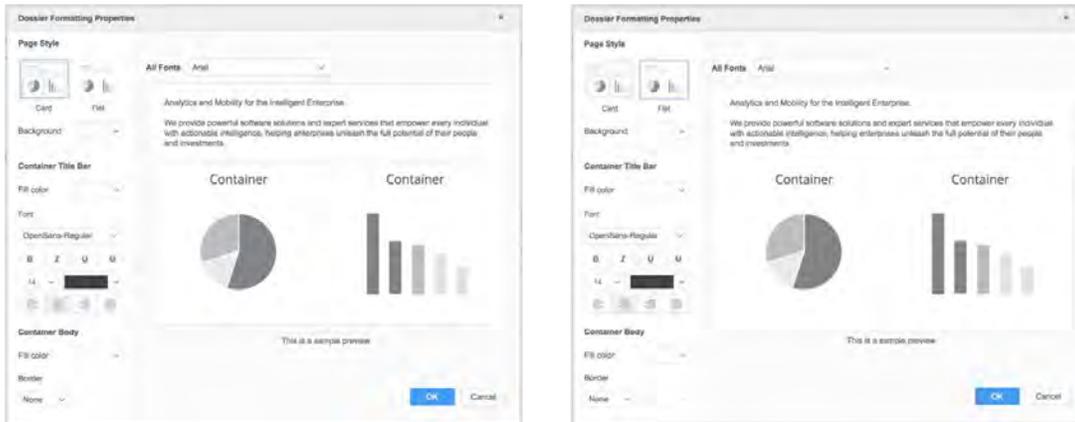


Use the new default theme for analysts

To help analysts and dashboard designers, MicroStrategy offers a default theme. This theme is in addition to the Classic Theme, available with Web, Desktop, and Workstation. The new theme offers enhanced default settings for color scheme, font style, font size, background, and shadows. It also includes design enhancements for title bars, crisper thresholds, enhanced color palette consistency, intelligently displays axis labels on visualizations and more.



The Default Theme also offers two different page styles: card style, which offers better separation and spacing between visualizations on a single page, and flat style, which delivers a cleaner look without borders between visualizations on the same page.



Display hierarchy data with Outline Mode

With MicroStrategy 2019, users can consume grid data with collapsible view options. This allows users to easily summarize multiple rows of data based on hierarchies. Users can click within the table to collapse or expand the hierarchy groups, quickly display summary rows, or reveal the details behind data for each group in a hierarchical view. This capability is available for grids within dossiers and Report Services Documents.

LOCATION	DIVISION	VELOCITY GROUP	TOTAL FORECAST	YTD REVENUE	INVENTORY COST	Avg GM%
Total			\$37,468.00	\$179,804.64	\$328,290.99	45%
Boston			\$10,108.00	\$43,720.87	\$79,366.44	40%
	ACCESSORIES		\$1,938.00	\$9,843.99	\$8,621.49	50%
	APPAREL		\$972.00	\$3,489.89	\$5,287.37	49%
	COMPONENTS		\$4,101.00	\$8,587.18	\$4,728.24	48%
	Fast Movers		\$1,928.00	\$2,415.30	\$2,752.27	41%
	Medium Movers		\$1,798.00	\$2,123.00	\$3,288.90	44%
	Slow Movers		\$417.00	\$2,018.85	\$689.08	40%
	HARDLINES		\$3,099.00	\$23,829.83	\$59,349.34	40%
	Fast Movers		\$1,980.00	\$0.00	\$25,114.02	38%
	Medium Movers		\$963.00	\$5,789.58	\$20,468.21	42%
	Slow Movers		\$166.00	\$18,059.45	\$13,747.11	30%
Dallas			\$6,537.00	\$27,669.80	\$59,264.28	40%
	ACCESSORIES		\$1,668.00	\$5,633.48	\$5,079.58	50%
	Fast Movers		\$332.00	\$301.88	\$239.85	33%
	Medium Movers		\$524.00	\$918.84	\$1,209.03	48%
	Slow Movers		\$112.00	\$4,412.78	\$3,630.70	52%
	APPAREL		\$508.00	\$3,121.23	\$2,417.28	49%
	Medium Movers		\$472.00	\$1,010.30	\$492.40	45%
	Slow Movers		\$36.00	\$2,110.73	\$1,924.88	49%
	COMPONENTS		\$3,289.00	\$7,700.85	\$5,912.24	40%
	Fast Movers		\$1,784.00	\$1,687.50	\$1,333.15	44%
	Medium Movers		\$1,238.00	\$3,956.35	\$2,800.89	44%
	Slow Movers		\$267.00	\$2,056.80	\$1,778.20	48%
	HARDLINES		\$1,672.00	\$10,814.44	\$45,855.15	40%
	Fast Movers		\$1,085.00	\$0.00	\$13,324.29	33%
	Medium Movers		\$502.00	\$1,019.90	\$10,859.57	42%
	Slow Movers		\$85.00	\$8,554.54	\$21,671.32	40%

Seamlessly collapse and expand grid content with Outline Mode in the MicroStrategy Library App

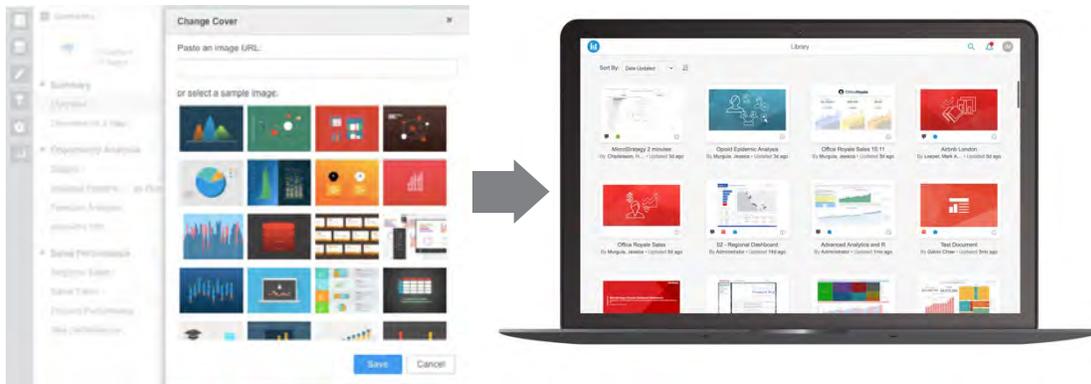
In mobile devices, Outline Mode provides users with the flexibility to expand and collapse rows of data with a single tap. This is especially beneficial on mobile devices with limited screen real estate. For example, Outline Mode adds a hierarchical structure to long grids for financial data. Users can expand and collapse business groups and categories in the balance sheet to get more insights.



Assign cover images to dossiers for the Library App

Dossiers are available through the MicroStrategy Library app on both Web and Mobile, making it easy for business users to find the information they need. The MicroStrategy Library organizes dossiers by displaying them as thumbnails, instead of offering a folder structure to browse through and find content. Designers can easily assign thumbnails or cover pages to every dossier, and that will help them visually identify unique datasets.

Pre-defined sample images are available out-of-the-box on the dossier authoring interface via MicroStrategy Web. Analysts also have the option to choose their own custom images and can assign logos, icons, and photos, as well.

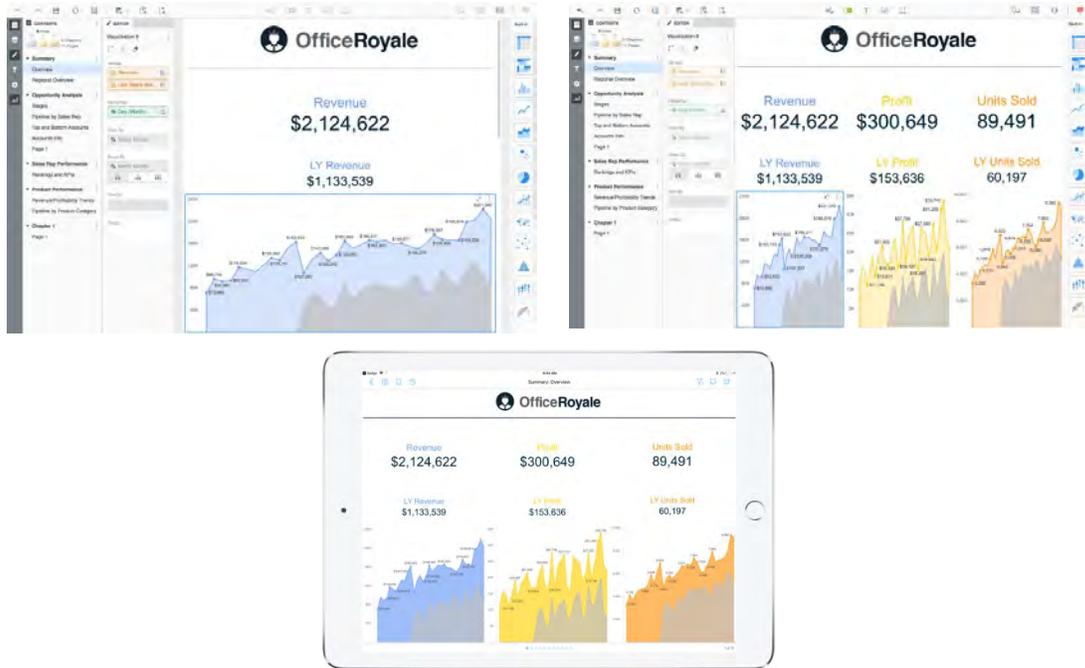


Control dossier displays with responsive design

Analysts can now easily create dossiers that are responsive in design, which provides control over how the dossier is displayed on different devices or screen sizes.

Dossier authors or analysts can arrange the visualizations with complete flexibility on a dossier interface. As the width of the screen reduces when seen on different screens or mobile devices, the visualizations that are horizontally positioned next to each other will automatically rearrange themselves into a single column. Designers who want two or more visualizations to always remain horizontally side-by-side can choose to group multiple visualizations together. Grouped visualizations will resize together with the same aspect ratio and as a single unit, despite the width of the browser or the device.

Analysts also have the ability to preview the content for various size configurations while authoring dossiers on a web browser. Analysts can resize the browser to view how visualizations rearrange themselves without having to use multiple devices to test it.



Easily certify dossiers and documents

Analysts, dashboard authors, or data stewards now have the ability to watermark BI content with a “certified” stamp. The purpose of the certified stamp on the dossier is to highlight dossiers that have been vetted by the right authority to only contain trustworthy information.

With dossier authors able to blend data from both system of record and external or personal sources, a common need for organizations who have invested in self-service strategies is the ability to ensure that everyone is able to differentiate content that is tied to certified versus untrustworthy data. This certification process, which is often associated with governance workflows may vary by organization; but the ability to watermark BI content with a “certified” stamp offers an easy way to manage governance. This step will allow business users to easily identify what content has been approved by the organization and are able trust the data.

Search	Project Access	Security Policy	Access	Administrative	Information	Comments
	Use report data system					
	Auto report control					
	* Use report already available					
	Use search engine					
	Use thresholds editor					
	* Use report data system					
	Value ID					
	PT 11 - Interchange					
	Use certify control					
	Filter report in preview					
	* Use report already available					
	* Define threshold rules report					
	Define MTR sub-report					
	Define MTR sub-report					
	Define sub-report					
	Define sub-report					
	Print report					
	Verify the MTR report (MTR User - Report Browser)					

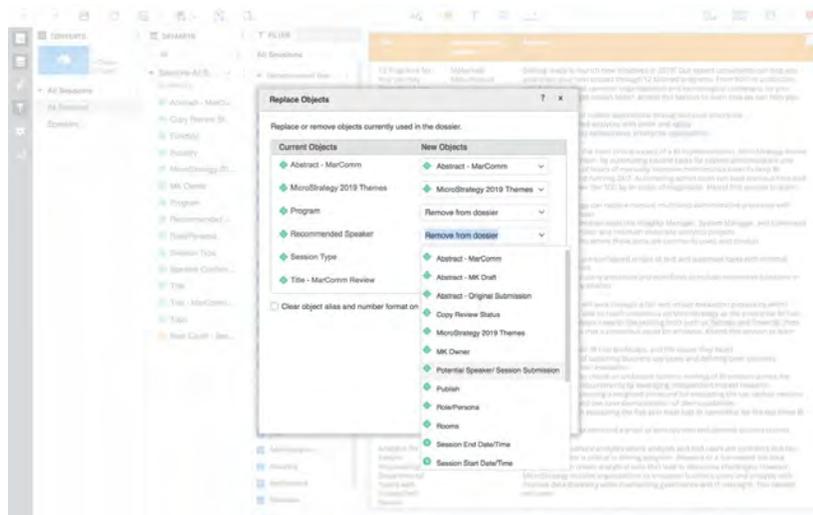
Data stewards or analysts will need the right privileges to certify content, which can be assigned via the User Manager.

Promote external and personal content to the enterprise semantic model

Analysts who create dossiers on web or desktop clients can do so on top of personal spread sheets or by connecting to external data assets that are not certified. In order to ensure that the content is governed, it is easy to map every attribute column to existing attributes in the semantic model, by using simple, point-and-click options. Analysts can do this themselves, as it doesn't require any IT architecting whatsoever, and there are graphical menu options to help them map and promote external content to system of record data. Once mapped to the semantic model, security filters will automatically be applied for other users, guaranteeing that users can only see relevant and personalized information when shared.

Alternatively, analysts can also right-click on a dataset or dashboard and use the "replace dataset" option to completely re-map the underlying dataset to a separate, certified report, or cube. This allows both administrators and analysts to work collaboratively. With the new capability to apply 'certified' marks on trusted content, it is easy to validate reports and dossiers that have been approved for enterprise-wide use.

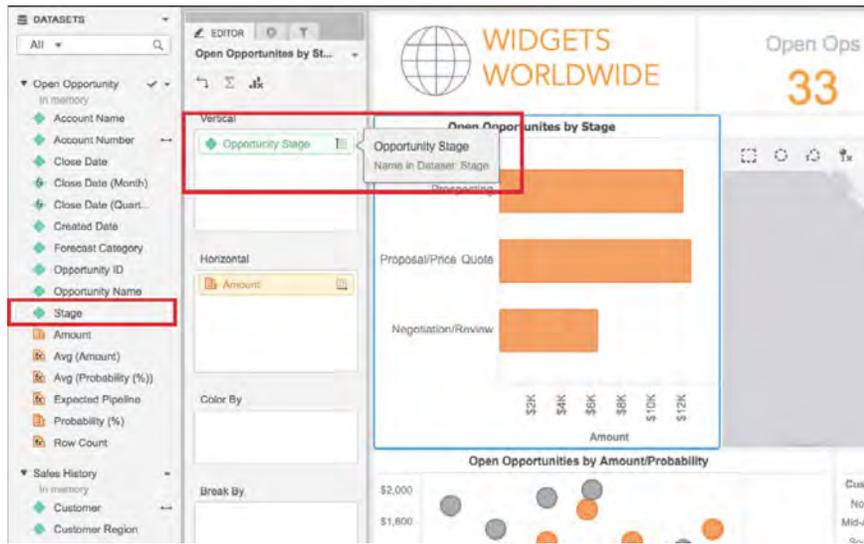
In cases where the number of columns of the underlying dataset and new dataset do not match, the report or dossier will automatically reconcile – and the mapping happens without any issues – making the process of content promotion to the system of record seamless for content authors.



Tooltips identify original names of renamed attributes and metrics

With MicroStrategy 2019, users can hover over objects in the editor or datasets panel to display a tooltip that shows the original name of an attribute or metric along with a description, if available.

End users typically rename attributes and metrics on the dashboard to reflect business terminology or when derived attributes and metrics are created. The new tooltips allow end users to track the name back to the original source.

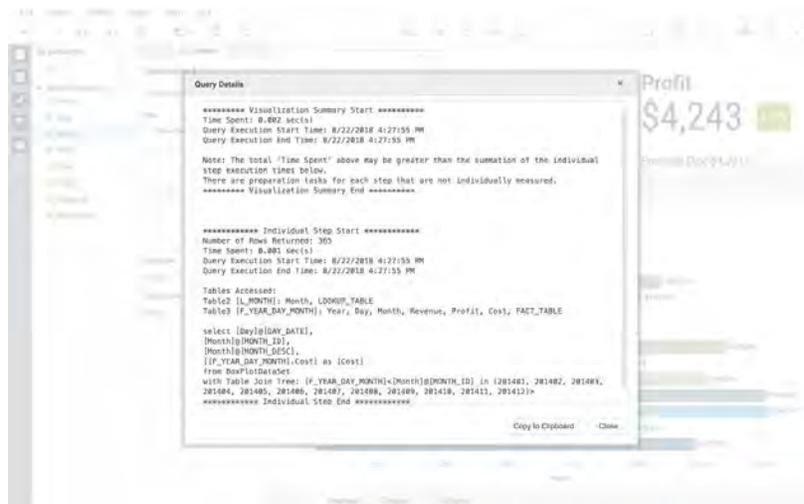


Individual visualizations have improved query details

MicroStrategy allows analysts to view query details for each visualization on the dossier. This menu option allows users to display both the query and the visualization on two separate windows, so analysts have access to both at the same time. This makes it easier and faster to understand how data is joined by MicroStrategy and allows analysts to troubleshoot more easily.

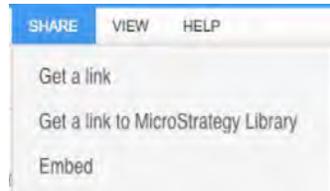
Additionally, users can copy the SQL query to the Clipboard for easier troubleshooting and sharing options. This feature is available on MicroStrategy Desktop, Workstation, and Web.

MicroStrategy 2019, also exposes execution times for each visualization in the query details window. By displaying the execution time for each visualization, designers or analysts can easily pinpoint the cause for longer execution times, enabling faster troubleshooting.



Dossier authors and analysts now have more sharing options

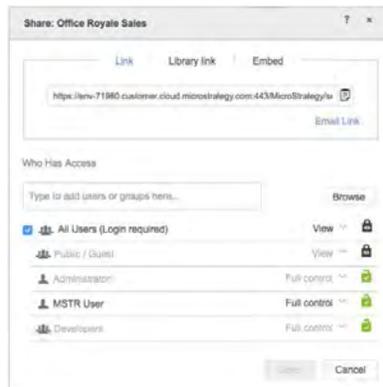
Dossier authors or analysts connected to a server can share certified dossiers using separate personalized links for three different use cases, based on the persona. Links to dossiers can be shared with:



- **Get a link:** Share with other authors or analysts who can edit the dossier. This link will give users access to the authoring interface of the dossier that will allow end users to add new data sources, add and modify new visualizations, add or modify filters, create or rearrange chapters and pages and more.
- **Get a link to MicroStrategy Library:** Share with business users or consumers who can view and interact with the dossier. This link will give users access to the dossier in the MicroStrategy Library and will allow end users to read and interact with the dossier. Consumers can switch between pages, change filter selectors, drill or sort on data, and make comments via the discussion threads but will not have the ability to edit and save changes to the dossier. With this link, consumers will not be able to edit the design of the dossier. When a link is shared with consumers, it also gives those end users the option to save the dossier to their MicroStrategy Library, and in this way, each user will have a single portal to access all dossiers that have been shared with him or her.
- **Embed:** Share with developers who want to embed the iframe into an external portal. The iframe can be used to embed directly into a third-party portal or business app, so that the same dossier can be accessed by users directly from those applications.

Analysts or authors can easily click on the “Email Link” option, from the share menu at the top, to launch a new email with the link in the body of the email, making it incredibly seamless to share direct access to the dossier, both for web and mobile users. Analysts or authors can also invite other users to access the dossier on Web by entering their names and assigning view, modify, full control, deny all and custom privileges.

Additionally, analysts can also schedule the delivery of a dossier with time and event schedules, or manually download the dossier as a .mstr or PDF file.



A New Export Engine with Brand New Capabilities

MicroStrategy 2019 delivers a completely rebuilt export engine with new capabilities when sharing dossiers in PDF format. The new micro-service that is installed automatically with the Intelligence installation provides all MicroStrategy clients the ability to generate high-fidelity PDF files with support for mapping, D3 visualizations, custom visualizations, HTML containers, and other HTML tag-based content. Additional highlights include smart pagination, support for dossiers with multiple chapters and pages, PDF bookmarks, and embedded images.



Export maps and custom visualizations

The new capabilities provide MicroStrategy clients the ability to export any graph, HTML (including tags), mapping, or D3 visualizations and all other custom visualizations. This greatly enhances the user experience, by allowing any user to share identical PDF versions of dossiers that they create.

HTML tags are now supported in dossier

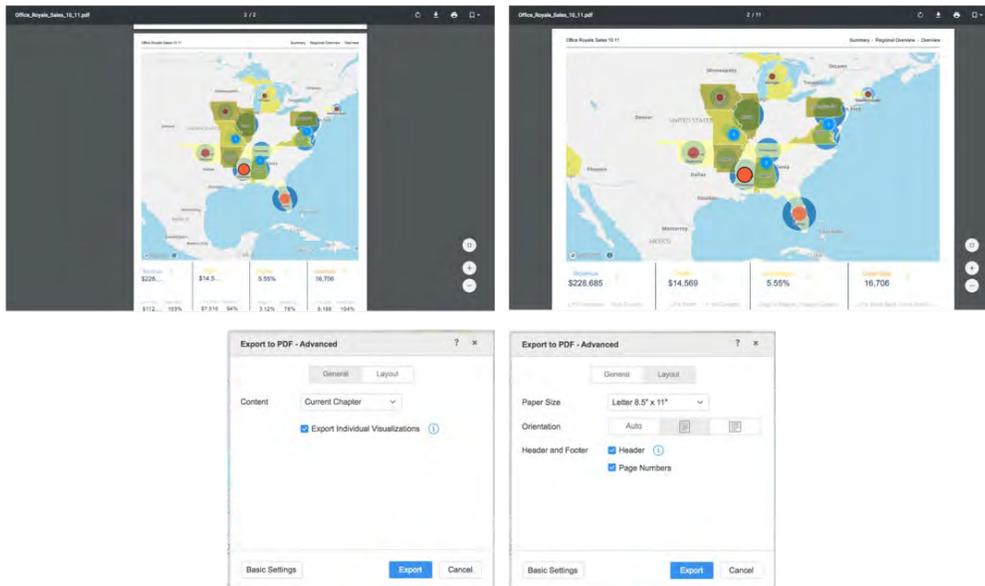
The new PDF export engine also supports cases where text strings with HTML tags are displayed on the dossier. The formatting from HTML tags as seen on dossiers in all MicroStrategy clients will be retained when exporting.

Multi-page export is now possible

Users are able to export dossiers that contain multiple visualizations on a single page, dossiers that contain multiple chapters and pages, and dossiers that contain large grid reports into highly formatted and readable PDF files.

Every visualization on a dossier can be exported to a separate page, making it extremely easy to read information that may require scrolling to see or information that has small formatting due to the size of the client's screen. Smart pagination for dossiers can expand all content into separate pages, making it incredibly easy to deliver large grid reports in PDFs that clearly display every row and column in a highly formatted manner.

Additionally, users have more options to customize advanced exporting settings prior to exporting. The options, shown below, allow end users to customize the content including choosing to export the current chapter or all chapters, selecting page orientation (Auto, landscape, or portrait), paper size, and header or footer details.



PDF bookmarks are supported

With MicroStrategy 2019, dossiers exported to PDF will create bookmarks for each chapter and its subsequent pages for better content organization and navigation.



Dossiers are optimized for performance.

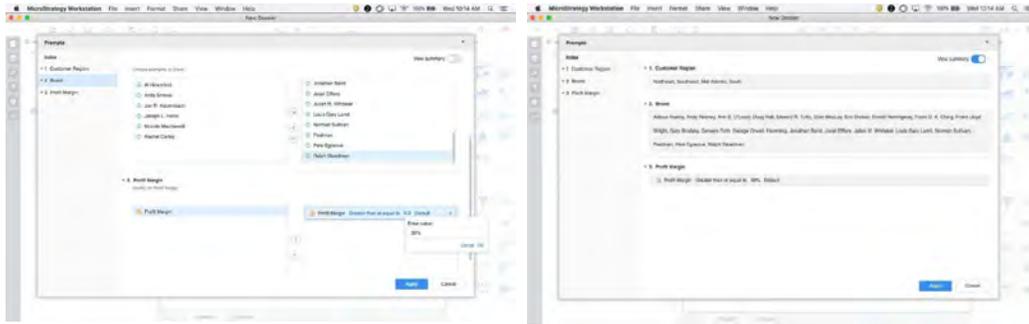
Analysts have several options to improve the performance and response times of dossiers, so end users can have the perfect experience. In addition to in-memory options, VLDB settings and other back-end optimizations, analysts can use several options including prompts, loading chapters on demand and more to improve dossier performance.

Prompts for dossiers enable data load limits

MicroStrategy 2019 support prompts on dossiers for end users. By designing dossiers with prompted datasets, end users will now be able to proactively limit the data load prior to running a dossier. This not only allows for dossiers to have personalized information, but also improves performance by processing only the necessary data.

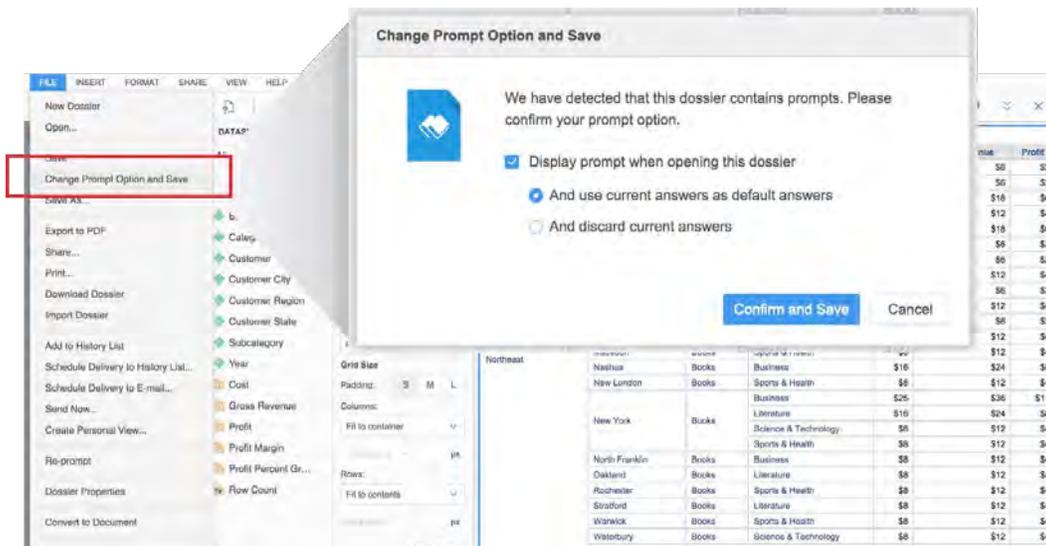
Analysts can now leverage prompted datasets when creating a dossier in any authoring interface, MicroStrategy Web, Workstation, and Desktop, or while consuming from the MicroStrategy Library.

Report Services Documents that contain prompts can now be accessed via the Library with an enhanced prompting interface.

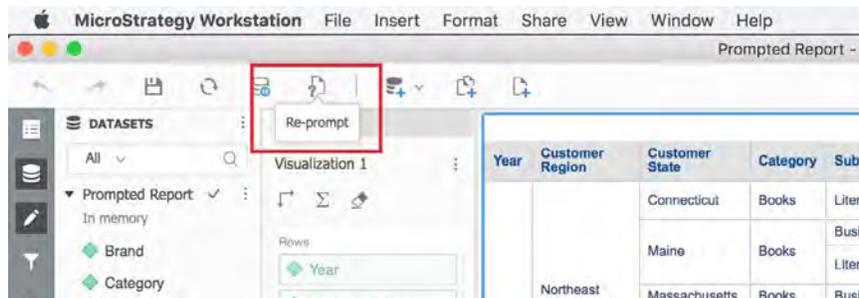


Prompts can be saved for future use

Similar to Report Services Documents, authors can set the default prompt choices for dossiers and choose if the prompts should be shown on initial execution.

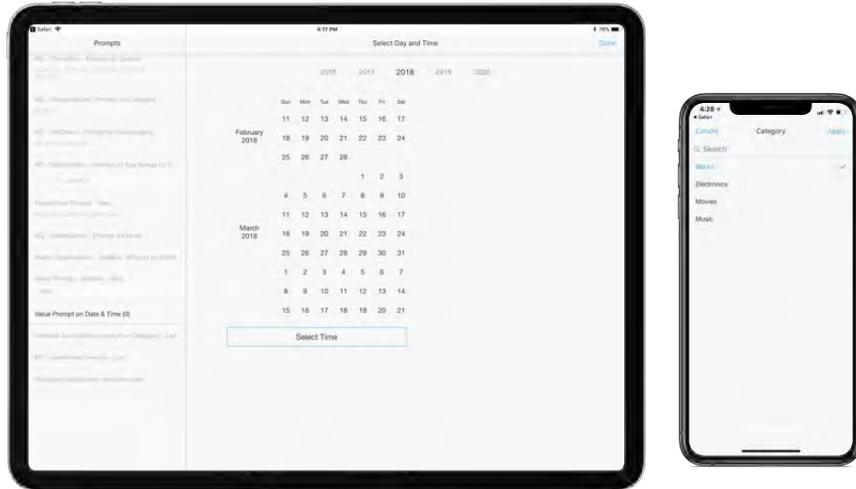


In the MicroStrategy Library, an end user's prompt selections will be retained each subsequent time the dossier is opened. Saving prompt selections helps end users as they do not need to re-enter their choices each time they run the dossier from the MicroStrategy Library. If users want to change their answers, they can simply click on the "re-prompt" or "reset" buttons, which allow the users to reset the prompt selections as needed.



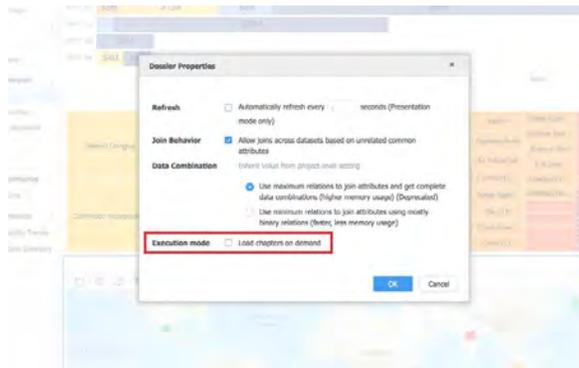
Quickly access prompts to relevant data on mobile

For efficient prompt selection on mobile, users can leverage Location Services prompts, barcode prompts, and more, which can optimize performance and user experience. If a user wants to look at other categories, they can easily re-prompt the dossier via the re-prompt button to access the analytics for other categories.



Load dossier chapters on demand

By default, when a dossier is opened, the data for all chapters and pages is executed and loaded. Analysts can design dossiers that only load the initial chapter when opened. This option can be set on the dossier properties window and is particularly helpful in improving the performance for dossiers that contain several chapters and pages.

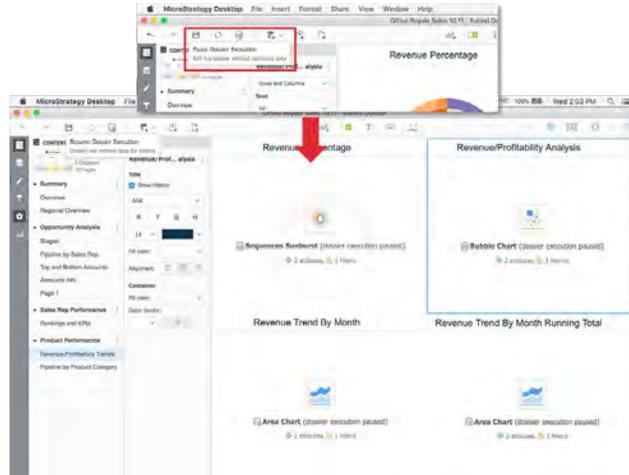


Pause and resume dossier execution to improve development time

When authoring or editing a dossier, analysts drag and drop data onto the dossier. When data is added to the dossier, it is instantly visualized as a grid or chart. For larger datasets, however, because the dossier executes each time new data is added to the dossier, there might be a lag between adding data to a dossier and seeing the new visualizations.

With MicroStrategy 2019, analysts can pause live queries or dossier execution while adding data to a dossier and prevent the dossier from processing or executing the visualization each time a new data point is added. This allows users to create or edit dossiers without lag, which is particularly important when working with live connections to sources, large datasets, or slow connections. Dossier execution can be resumed once all changes have been made. This also applies to situations when filters need to be modified.

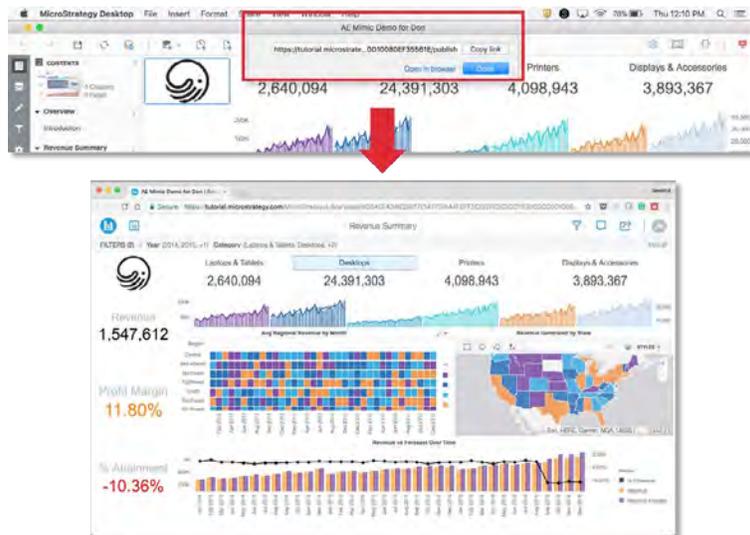
The ability to pause and resume dossier execution is available as a button on the menu bar of the dossier authoring interface and is available for MicroStrategy Desktop, Web, and Workstation.



Navigate Between MicroStrategy Interfaces Without Re-authentication

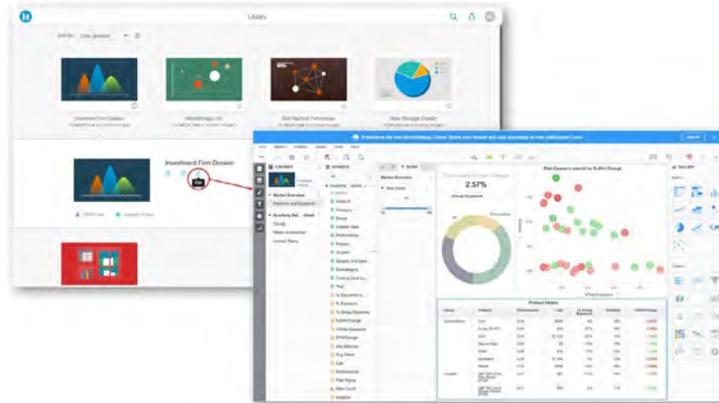
With MicroStrategy 2019, users can switch between interfaces without the need to log in multiple times, including between different MicroStrategy products, like Web and Library.

This seamless navigation between MicroStrategy Web, Desktop, Workstation, and MicroStrategy Library is supported across all authentication modes: Standard, LDAP, Kerberos, SAML, Guest, and Truste, as well as MicroStrategy Identity.



Edit dossiers from the MicroStrategy Library

Business users with the privileges to edit dossiers, or analysts who use the Library can now easily shift to an editing or exploration interface to make changes to dossiers and further explore data by dragging and dropping new dimensions and metrics into the visualizations. MicroStrategy Library allows users to access the authoring interface in Web, directly from Library with a single click.



The New MicroStrategy Desktop Enhances Storytelling Capabilities

MicroStrategy Desktop, a free data discovery tool for analysts that is available for both Mac and PC, got a face lift. The new and improved interface is completely redesigned and significantly enhances the Desktop product from prior versions of MicroStrategy.

Introduced in 2018, dossier makes it easy to tell stories with data by organizing dashboards and reports into chapters and pages. Desktop allows analysts to author and design dossiers in minutes.

With over 150-plus connectors to various databases and file options, the new Desktop allows analysts to quickly connect to and visualize data. Drag and drop options allow users to quickly connect to, prepare, enrich, and blend data from multiple sources, then visualize information with interactive dossiers.



How is Desktop different from prior versions of MicroStrategy?

With the new Desktop, analysts can access, blend, and wrangle more data sources, and visualize and publish analytics faster than ever before. There's a lot that is new with Desktop.

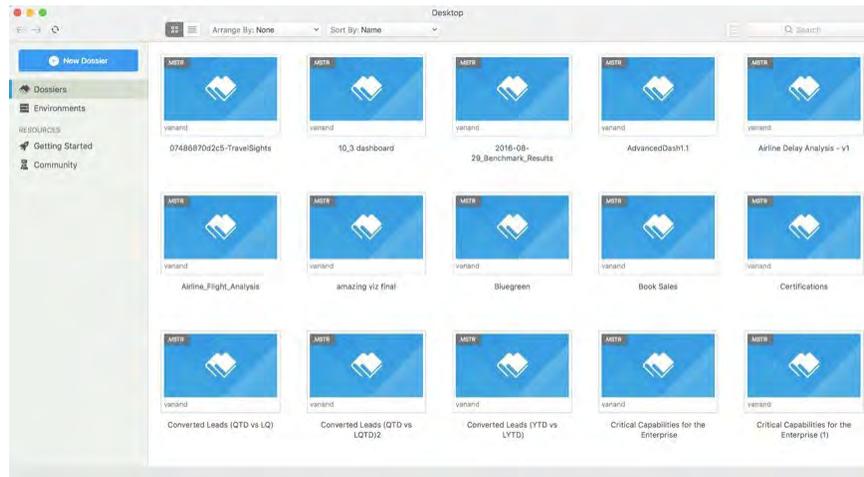
- We completely overhauled and designed a new, modern interface for data access, data preparation, visualization and sharing.
- There are lots of new data connectors.
- Users now have the ability to author and design dossiers.
- The new Desktop allows you to work offline and online. Not only can analysts connect to remote data assets, but users can also connect to the Intelligence Server and directly work within a collaborative and centralized environment.
- The ability to easily find and view all dossiers on a Mac or PC within a single folder.
- The ability to browse and edit dossiers on the server, and upload new or modified dossiers to the server.
- The ability to add multiple connections to separate environments or servers, allowing analysts to browse and find content across several applications easily.
- The ability to automatically refresh content on dossiers while connected to a server, with time triggers.
- The new Desktop allows analysts to design and view dossiers with responsive design options
- Offers new quick start tutorials and access to training resources on MicroStrategy Community, making it easy for new users to get started.

Access dossiers online and offline

MicroStrategy Desktop is exceptionally helpful to analysts as it provides access to dossiers and data while offline and without Wi-Fi. Users can not only access server content and create dossiers when online, but can also download content from the server, make edits, and work offline as well.

Easily search for data and dossiers

The modern Desktop interface available both for Windows and Mac offers a single window that lists all dossiers that are stored locally on the laptop. So no matter where the dossiers are stored, users can find them easily on Desktop.



When connected to a MicroStrategy Server or environment, users can easily search for content on any of the applications (known as Projects in prior versions of MicroStrategy) or on the MicroStrategy Library. Within the applications tab, users have the ability to navigate the folders within each application to find or save dossiers.



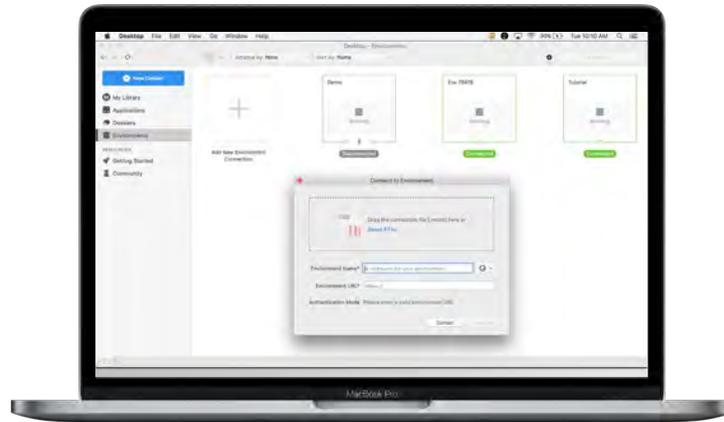
Security settings can be controlled by the user to allow other users to browse, read, use, execute, write, delete and control any object they created in the centralized environment.

Every dossier in the MicroStrategy Library is represented by a customized thumbnail image, making it easy to identify content. Each dossier thumbnail also indicates the owner name and last updated time. Dossiers in the Library can also be sorted by name, date, last updated date, or date viewed, making it easy to find content.

Publish to the MicroStrategy Server and share personalized dossiers with automated distribution

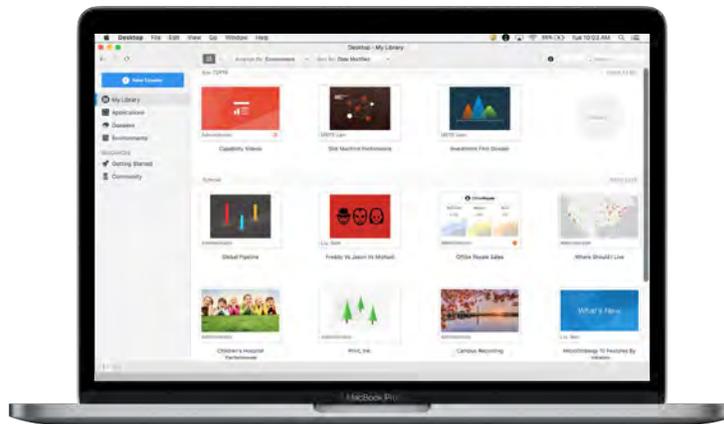
To enable teams and analysts to share dossiers securely within the enterprise, Desktop allows analysts to publish or upload dossiers to a centralized server. To publish to the server, users will need to connect to the MicroStrategy Server, on-premises or in the cloud with MicroStrategy on AWS. MicroStrategy Desktop allows analysts to connect to multiple server environments.

To connect to a new environment, analysts can either enter the URL or can browse and choose the connection file (.mstrc) from the Connect to Environment wizard, which will automatically configure the server.



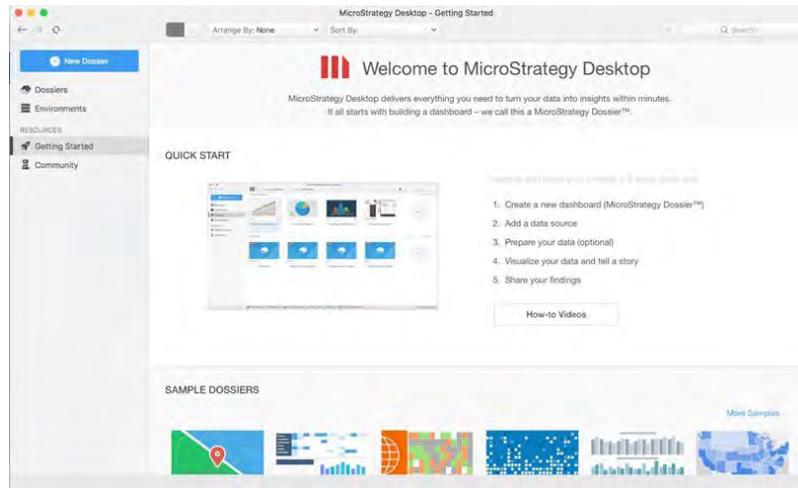
Once connected to the Server, analysts can upload dossiers to folders on the centralized server and can take advantage of enterprise capabilities including:

- Delivering governed data discovery at scale and ensuring access to trusted data
- Sharing personalized dossiers with end users with security filters
- Automating the distribution of dossiers to end users with time, event, and threshold-based schedules
- Ensure the security of data by requiring users to authenticate and login prior to seeing content
- Deliver access to end users on a browser with MicroStrategy Web
- Deliver access to end users on mobile devices with MicroStrategy Mobile
- Automated data refreshes from databases and cubes
- Access to certified data sources, in-memory cubes, and semantic metadata



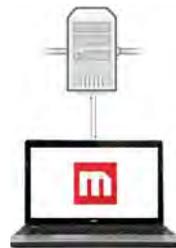
New resources and tutorial videos help users get started quickly

To help new users get started with MicroStrategy Desktop quickly, resources are available in the form of short videos and sample dossiers via the Getting Started tab.



Windows authentication is now supported for MicroStrategy Desktop

MicroStrategy Desktop for Windows, now supports Windows Authentication. Users of MicroStrategy Desktop who would like to connect to a server that is configured to use Windows Authentication can now connect much more seamlessly, making it easier and faster to share and collaborate with other users.



The memory footprint for MicroStrategy Desktop is reduced

MicroStrategy Desktop users have the flexibility to launch and work on multiple dossiers at the same time. This capability is supported on both Mac and Windows. MicroStrategy offers an optimized memory footprint for Desktop when multiple dashboards are launched at the same time. Desktop now consumes less memory than prior versions, freeing up system resources to improve overall performance.

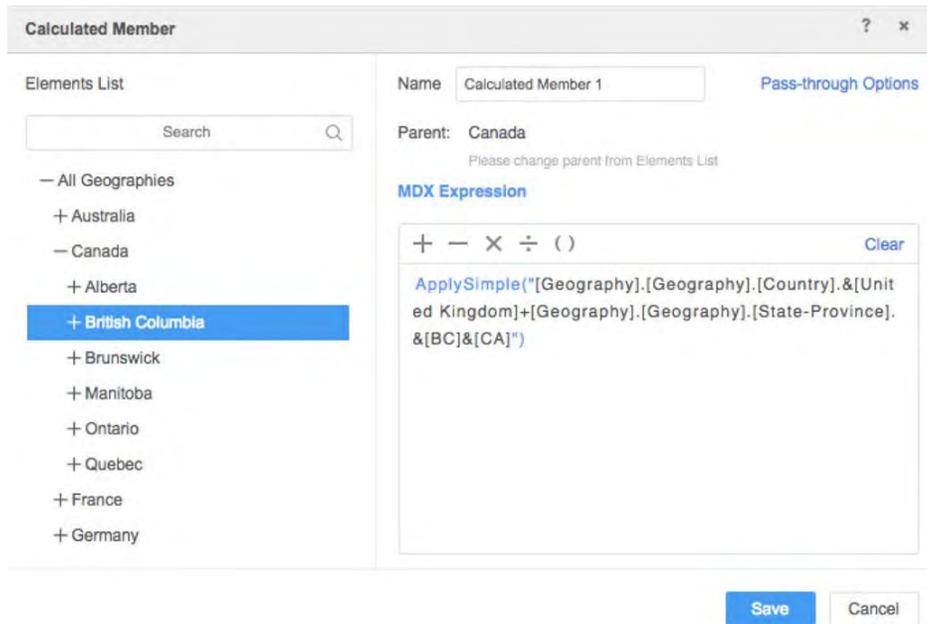
Hierarchy Reporting

MicroStrategy 2019 delivers new and improved capabilities for Hierarchy Reporting. This allows analysts to create and interact with hierarchy reports to visualize ragged or unbalanced hierarchies. This feature is supported for MDX sources, including MSAS and Essbase, and the entire hierarchy from the source is displayed in a single row or column. When users connect to these sources, the product retains the hierarchies within their sources, as it imports the data into MicroStrategy by creating a new “hierarchical attribute” that can be used like any other reusable object within dossiers. The data from these sources can be used for data discovery and building dossiers.

Net Income breakdown by FY				
Data.Fiscal	All Periods	FY 2002	FY 2003	FY 2004
Accounts	Amount	Amount	Amount	Amount
Net Income	12,809,503	3,250,075	4,806,606	4,752,823
Operating Profit	16,728,238	4,286,079	5,283,327	6,162,250
- Gross Margin	4,330,103	10,714,366	16,192,378	17,693,642
- Net Sales	64,626,468	16,099,612	23,193,105	25,333,751
- Gross Sales	68,070,219	16,862,125	24,563,438	26,634,656
Trade Sales	66,203,169	16,210,053	23,488,837	25,504,299
Intercompany Sales	2,867,030	652,072	1,064,601	1,130,357
Returns and Adjustments	2,264,901	470,856	1,034,362	759,713
Discounts	1,178,820	311,857	325,871	541,192
- Total Cost of Sales	20,236,365	5,365,426	7,010,730	7,840,209
Standard Cost of Sales	17,740,863	5,005,416	5,735,065	7,000,402
Variances	2,495,482	360,010	1,275,665	839,807
- Operating Expenses	27,881,898	8,429,158	9,981,848	11,231,313
+ Labor Expenses	22,127,263	4,975,902	6,141,950	6,000,341
Commissions	2,067,549	531,184	670,319	866,046
+ Travel Expenses	662,058	195,505	209,947	295,546
+ Marketing	156,620	39,838	52,656	64,132
Office Supplies	159,792	45,031	46,634	66,227
Professional Services	124,836	29,300	46,652	48,834
+ Telephone and Utilities	972,756	293,938	317,192	401,626
Other Expenses	100,505	27,589	30,639	42,337
+ Depreciation	918,787	249,780	279,708	389,272
Rent	341,547	91,841	103,664	145,662
- Other Income and Expenses	30,016	15,103	16,138	16,157
Interest Income	100,667	25,363	31,300	43,974
Interest Expense	154,750	38,952	48,162	67,596
Gain/Loss on Sale of Asset	(123,795)	(31,188)	(38,826)	(54,084)
Other Income	13,251	(24,369)	(1,233)	38,652
Cur. Xchg Gain/(Loss)	214,625	84,865	72,749	57,611
Total	4,768,749	1,095,106	1,060,488	1,427,363

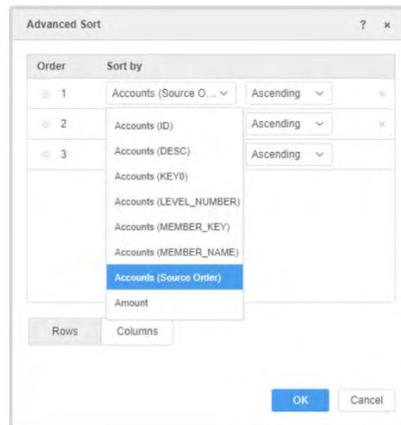
Custom MDX queries are now available for derived elements and metrics

The ability to use functions and complex formulas to define derived elements and metrics is crucial for many business reporting requirements. This is especially true on MDX sources, where time transformations can be done only by using functions. MicroStrategy 2019 allows business users and analysts to create derived metrics or attributes by modifying existing elements within the MDX source. Users can apply mathematical or other transformational functions to create derived elements within hierarchy reports using more complex formulas and calculations. In addition to using out of the box functions, users can also manually write custom MDX queries to achieve this. Business users now have more flexibility in defining derived elements and metrics, and the ability to do more advanced analysis on their data.



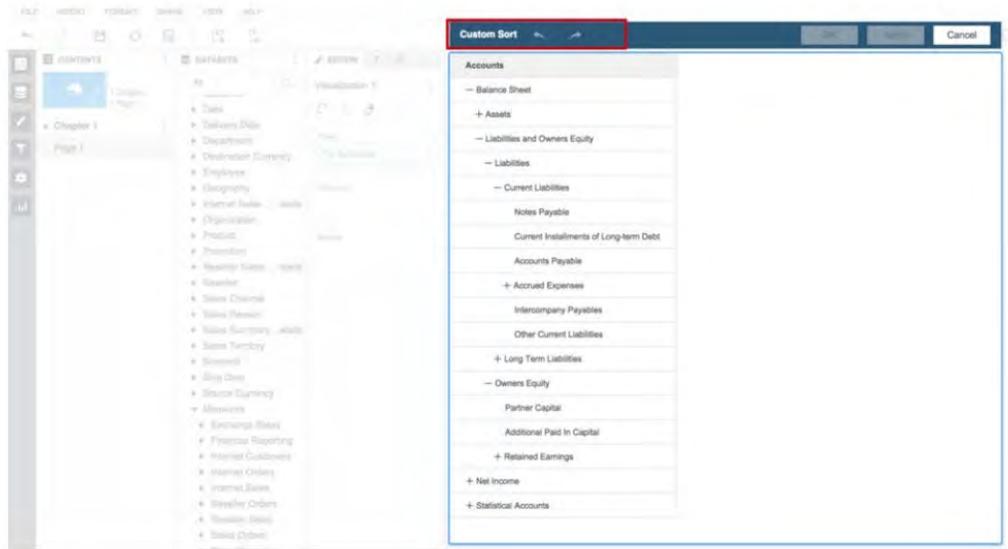
Sort based on the sort order defined in the data source

Often the data in MDX sources is ordered in accordance to business rules or requirements. In MicroStrategy 2019, elements on a report containing the hierarchical attribute will be sorted by the order defined in the data source by default, as the user expects.



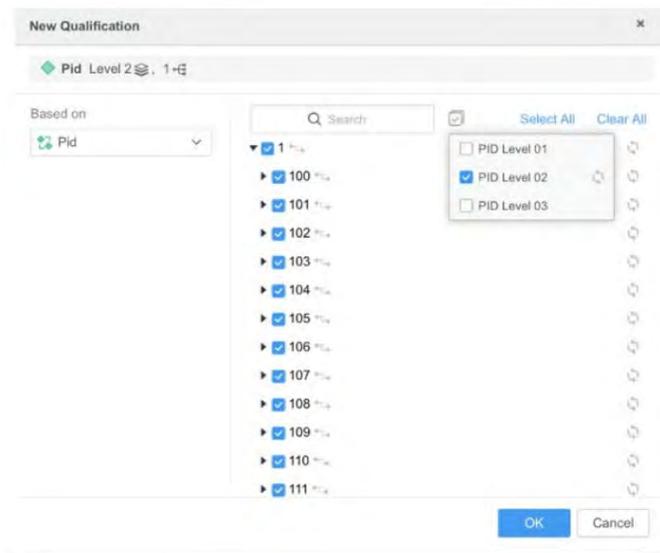
Custom sort hierarchy elements

Analysts require the flexibility to re-order data, irrespective of how the data architect has modeled the data. In addition to sorting hierarchy elements in either ascending or descending order, analysts have fine-grained control over the order in which data is displayed by having the ability to manually sort hierarchy elements.



Data security is available for hierarchy reports

All enterprise-class BI systems must provide a mechanism to secure data so users are able to view only appropriate data. Analysts can easily define security filters on hierarchical attributes, allowing customers to deploy hierarchy reports securely and easily across their organizations.



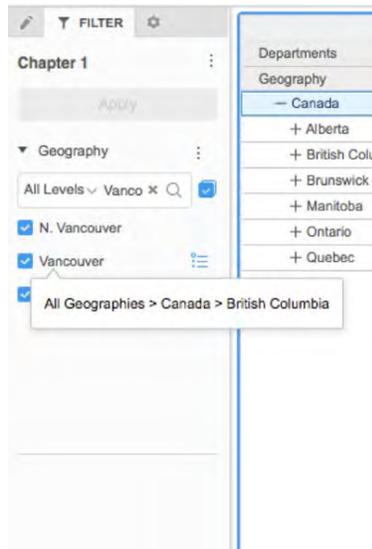
Select the entire level of a specific branch in the Filter Panel

Analysts can select the entire level on the Filter panel with a few clicks. This makes filter selections easier and more user friendly for analysts to report at a specific level of the hierarchy.



View the hierarchy path for elements in search results

When searching for a hierarchy element on the Filter panel, the entire path of the element within the hierarchy will be displayed. This helps resolve ambiguous leaf nodes in hierarchies—for example, Vancouver can be both in OR and in BC. This feature will provide further information and help users understand which particular hierarchy element needs to be selected.



New Features for Administrators and Architects

MicroStrategy 2019 introduces several enhancements and new features for administrators and architects, making user management, monitoring various systems, gathering telemetry data, and setting user security easier than ever before. The following section describes the new capabilities available across various interfaces.

MicroStrategy Workstation

MicroStrategy Workstation is a brand-new addition to the MicroStrategy 2019 platform. Targeted at administrators and developers, it is a unified product that makes it faster and easier to build and maintain scalable enterprise content, manage users and groups, assign security roles, create data models, and much more.

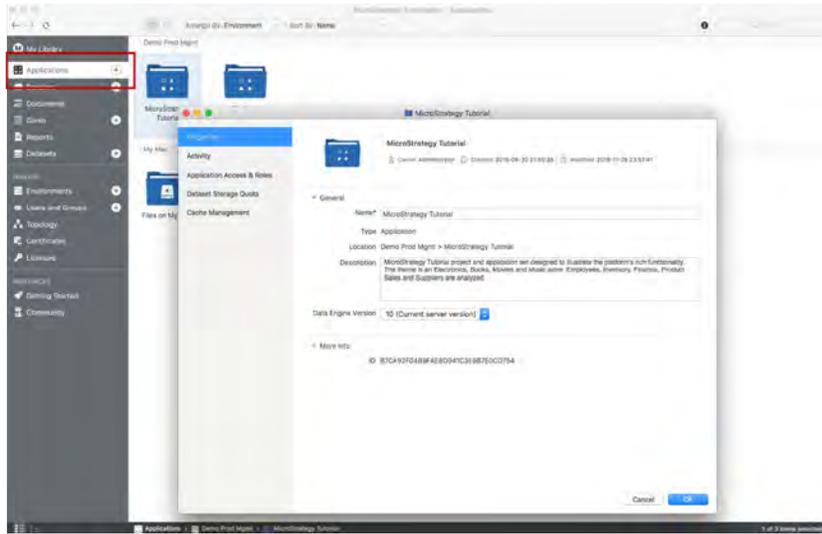
MicroStrategy Workstation allows administrators and developers to:

- Connect to data assets to create or edit dossiers, both locally and on MicroStrategy servers
- Connect to on-premises and cloud environments
- Connect and save content to multiple MicroStrategy environments or Servers
- Create applications
- Find and interact with dossiers, documents, data sets, and reports, with separate smart folders to easily find dossiers, documents and reports
- Create and manage users or groups and assign roles
- Manage permissions and access to content (ACLs)
- Schedule datasets for publishing
- Certify dossiers, documents, and data sets
- Share dossiers and documents by adding them to users' libraries
- Usage activity of dossiers and applications
- Monitor and start or stop services via Topology view
- View your system certificates
- Monitor your licenses
- Advanced settings to customize the analytical engine behavior
- Manage cache
- Create and manage row-level and column-level filters on datasets
- A quick start page to get users up and running quickly
- Integration with the MicroStrategy Community

Create a new application in Workstation

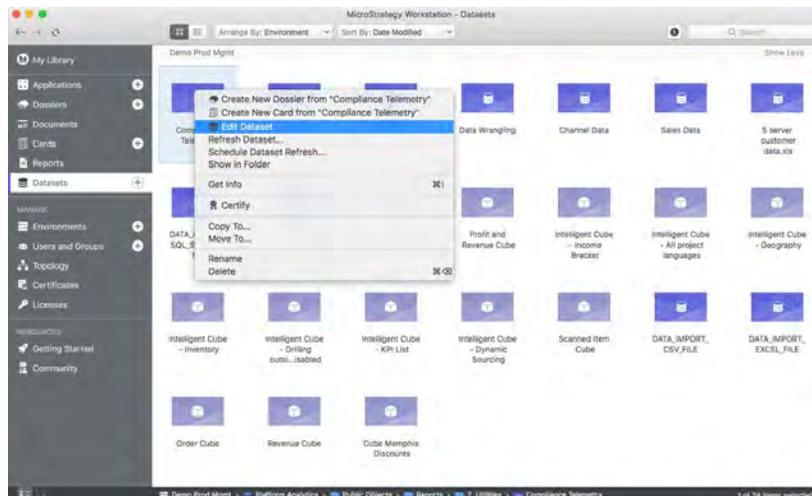
With MicroStrategy Workstation, administrators can create new applications in an environment. An application is a container that allows you to logically group analytics content, like reports, datasets, dossiers, cards, and documents. Additionally, it can also house objects like filters, prompts, database connections, templates, and more.

Users will need to be connected to an environment or a server in order create an application. Once an application has been created, its contents can be accessed via Workstation, Desktop, Web, Mobile, Library, and Developer.



Create and manage datasets

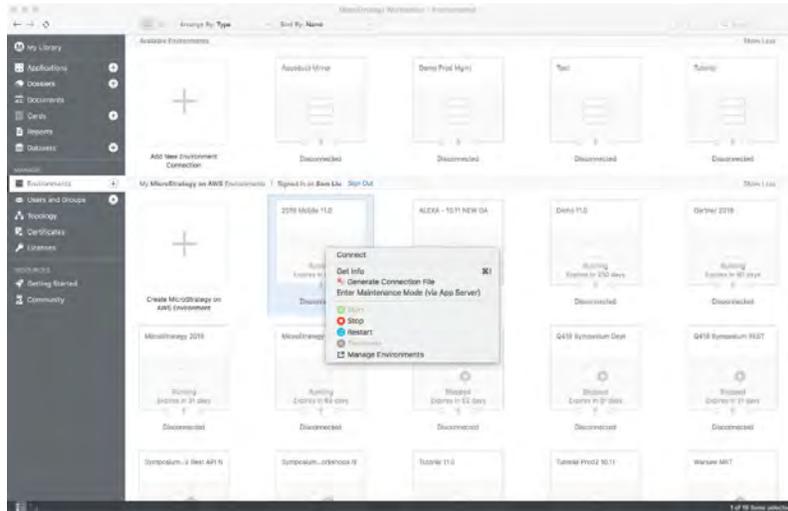
Workstation allows administrators to create and publish standalone datasets as in-memory cubes to the Intelligence Server, on-premises, or in the cloud. These datasets can then be used to create a dossier. Administrators can edit and refresh datasets as needed or set schedules to automatically refresh the data. Administrators can also combine multiple tables from different types of data sources into a single, multiple-table dataset, which can be customized and certified.



Create and connect to MicroStrategy on AWS

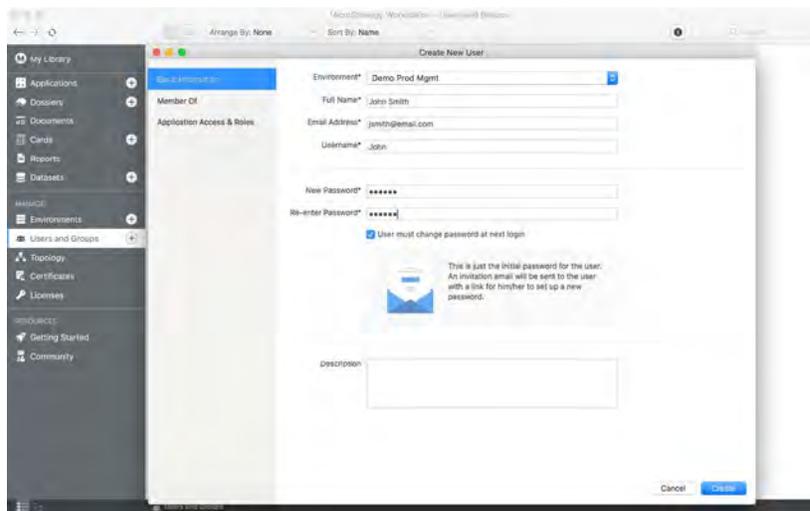
Administrators can also add connections to servers in the cloud on-premises, similar to Desktop.

In addition to allowing administrators to connect to existing servers, administrators can also provision a new cloud environment and manage environments through the options to Start, Stop, Restart and Terminate the cloud server.



Create and manage users and user groups

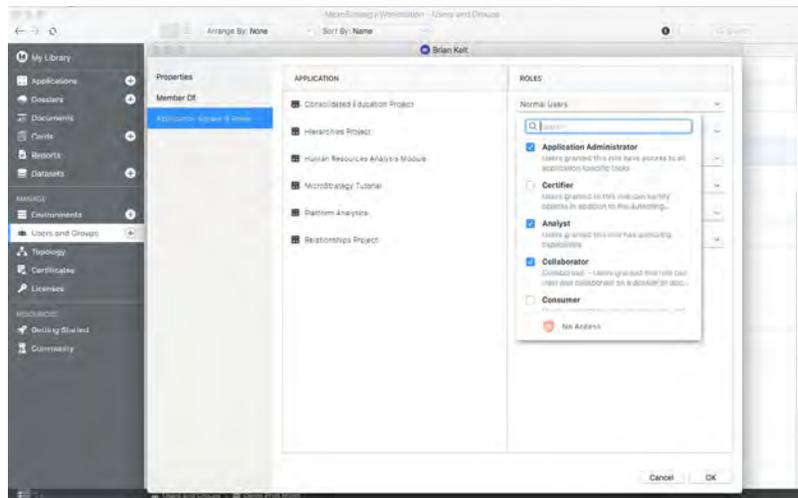
MicroStrategy Workstation allows administrators to create new users and user groups and to manage permissions. This makes it easier to get started with sharing information and collaborating securely and in a governed manner via a server.



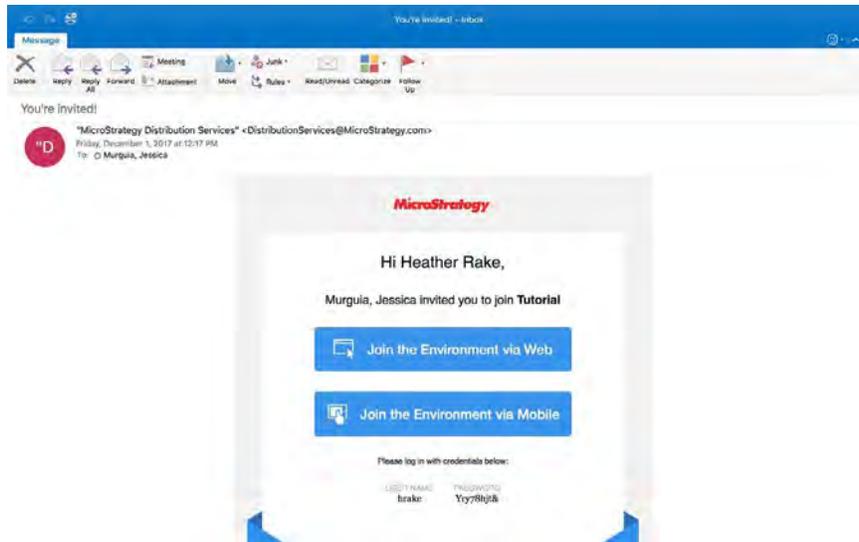
Manage properties and security access

With Workstation, administrators have access to an intuitive and easy-to-use interface to quickly change the security role of users or a user group, to browse, read, use, execute, write, delete and control dossiers, documents or reports. The five most commonly used roles are available in this interface: Application

Administrator, Certifier, Analyst, Collaborator, and Consumer. Beyond that, administrators can customize and restrict the security access (ACLs) as needed.



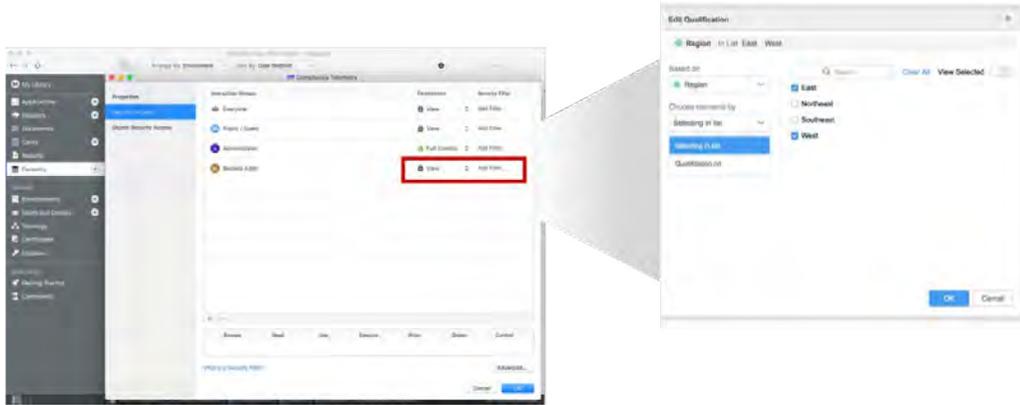
When new users are created, email notifications are sent out to easily enable the user to login and access the content.



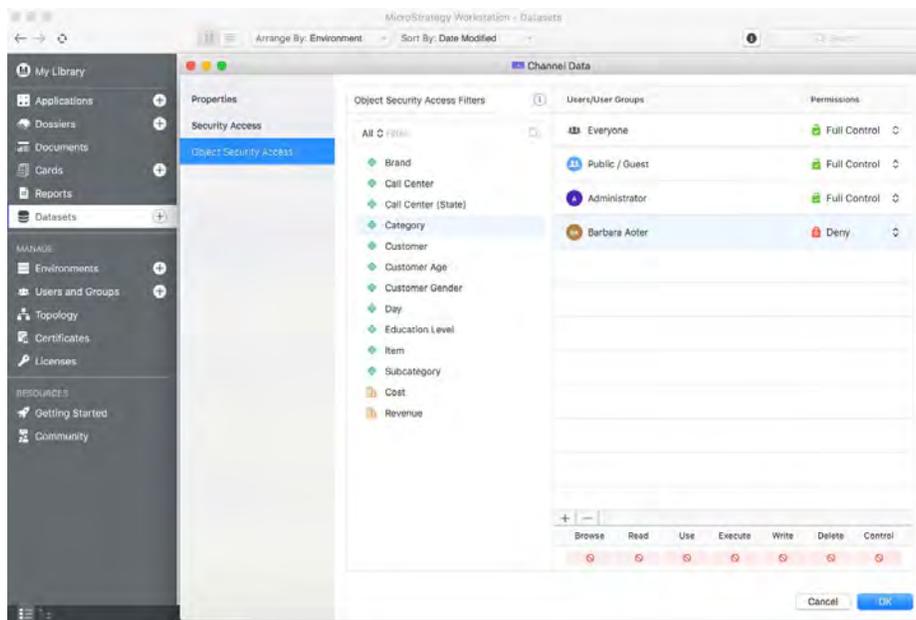
Add row- and column-level security to your dataset from MicroStrategy Workstation

With MicroStrategy 2019, administrators can create and apply security filters via Workstation that limit the data users can see when accessing dossiers or documents.

With a simple interface, administrators can easily restrict the data that an end user can see by creating a row-level security filter.



Additionally, administrators can also assign "Object Security Access" to any user. This filter allows administrators to add security at the column level and control which attributes and metrics users are able to see.



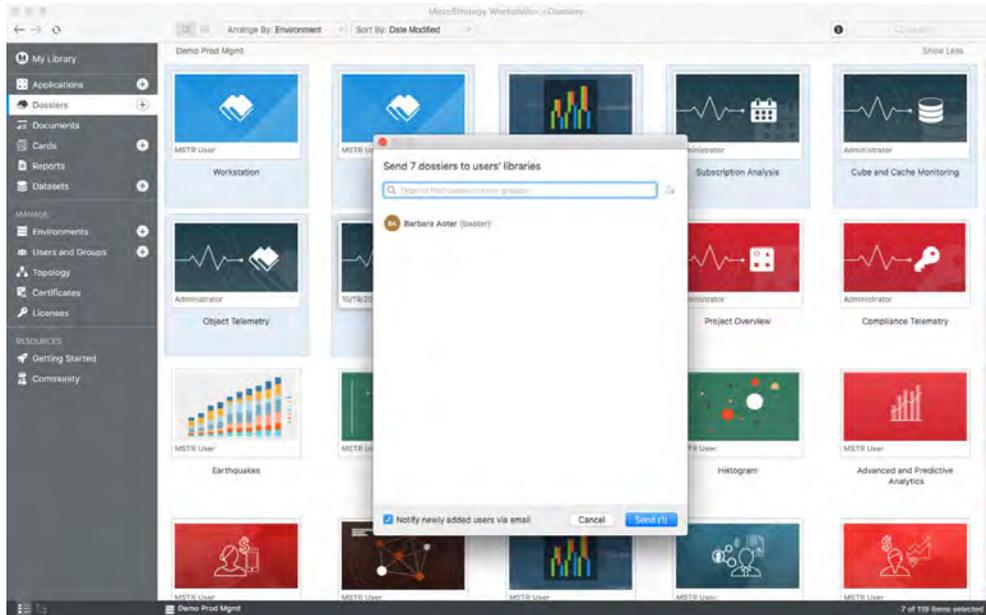
Publish multiple dossiers or documents to the MicroStrategy Library

Workstation makes it easy to share content to users across the enterprise. Administrators can easily do this by either

- creating a link to the dossiers saved on the server which can then be sent to users via email or a different communication medium, or
- directly publish the dossiers or documents to the users' libraries.

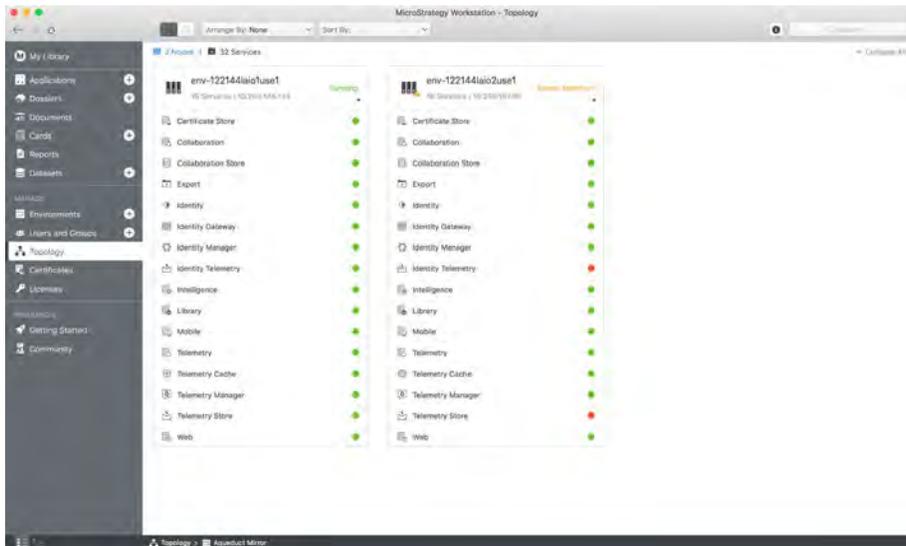
Administrators can select multiple dossiers or documents at a time (up to a maximum of 100) from MicroStrategy Workstation and publish them to users' libraries. Via the MicroStrategy Library, end users can access personalized dossiers and documents on a browser or on a mobile device.

Administrators can select either individual users or user groups as recipients for the dossiers or documents. Additionally, it offers the option to send an email notification to the user when the dossiers or documents are published.

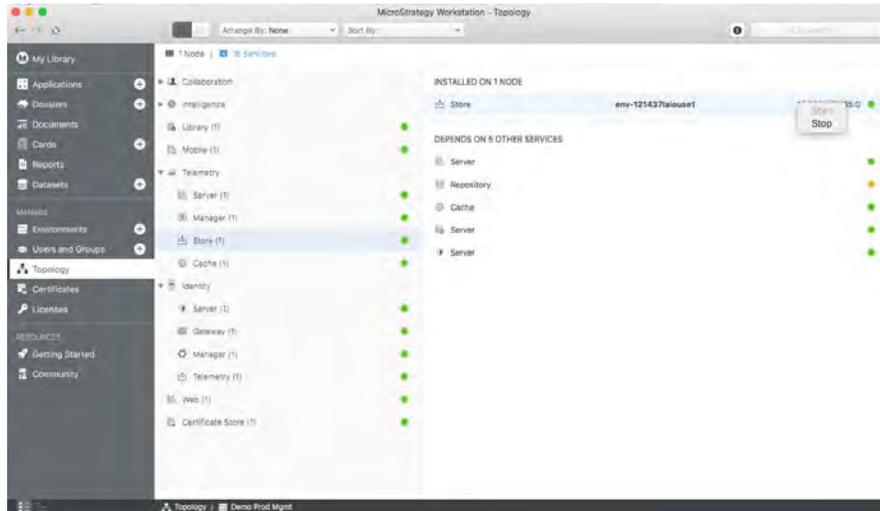


Manage and monitor services with Workstation

MicroStrategy Workstation now provides users with a graphical interface that presents the entire topology of every node within their environment, in addition to related services for available nodes. Through the Topology menu on Workstation, administrators can monitor the current state of every service on each node, as well as start or stop individual services.

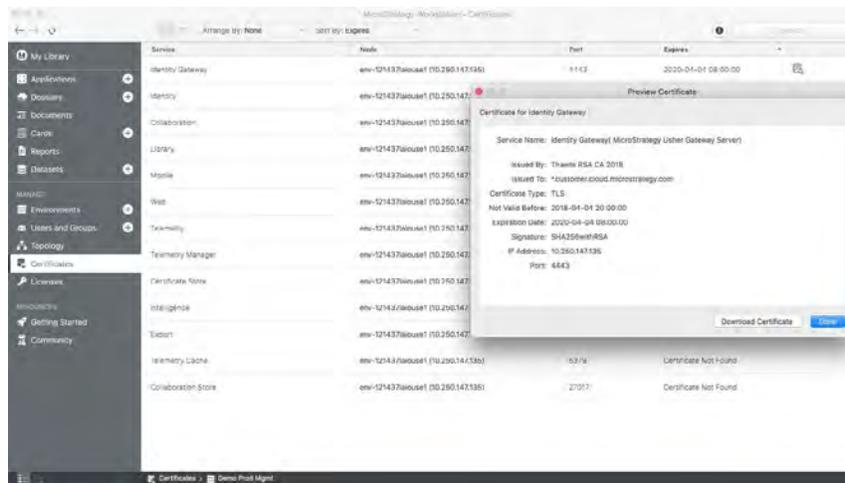


Topology provides the Nodes view which shows a summary view of each services' status in the selected environment and Services view shows detailed information of the selected service including the machine name and port number. The Topology section is controlled via the Monitor Environment and Administer Environment privileges which provides the administrator with greater control over who can view system information.



View security certificates for each environment

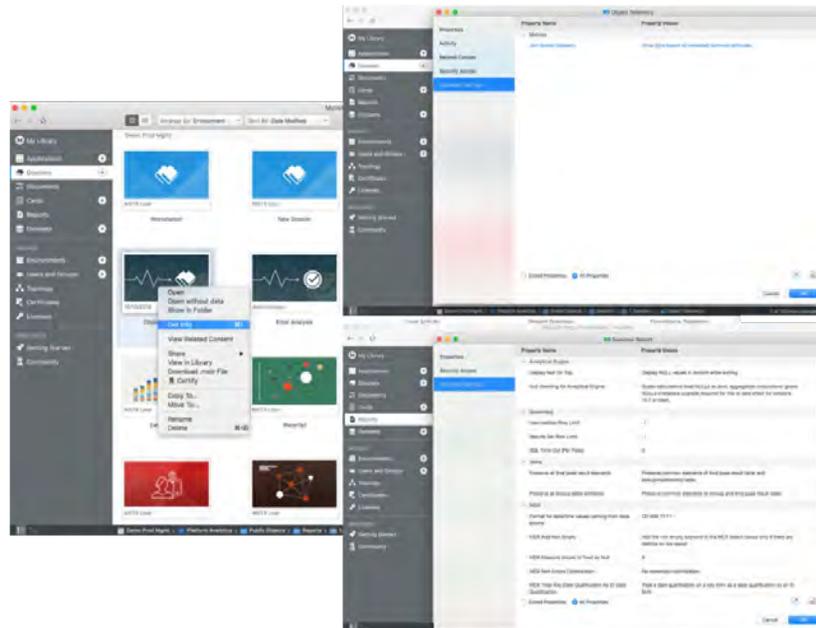
With Workstation, administrators are able to view all their environment certificates in a single location, along with details such as where the certificates are located and when the certificate expires. Certificates are also downloadable.



Advanced performance optimization settings are now available on Workstation

Previously available governors and VLDB settings within Developer and Web are now also available in Workstation. Administrators can use the new settings available with Workstation to improve the performance of queries with customized SQL queries.

These settings affect how the MicroStrategy Intelligence Server manages joins, performs metric calculations, and optimizes queries, among other options. With the new MicroStrategy Workstation, administrators and developers can access advanced performance and optimization settings for dossiers, reports, and documents



Introducing the Enterprise Semantic Graph

MicroStrategy 2019 introduces the industry's first Enterprise Semantic Graph. It elevates the potential of enterprise data assets, makes truly federated analytics possible, and delivers personalized recommendations and insights based on who you are, where you are, and what you're doing. With MicroStrategy 2019, the semantic foundation has evolved. Supplementing metadata content and the foundational business glossary with real-time usage information with new Platform Analytics capabilities, system and location telemetry, and powering the system with recommendation and insight engines, the enterprise semantic graph delivers an enriched index for the enterprise that can power AI applications through contextual recommendations and personalized insights.

New Platform Analytics Delivers More for Every Administrator

MicroStrategy 2019 delivers next-generation telemetry capabilities that help administrators easily understand its usage on every project, by every user, by capturing and presenting real-time usage data from the MicroStrategy platform with the new Platform Analytics application. With this, administrators can actively monitor the health of the system, track adoption rates, and ensure that the organization's mission-critical applications are always up and running.

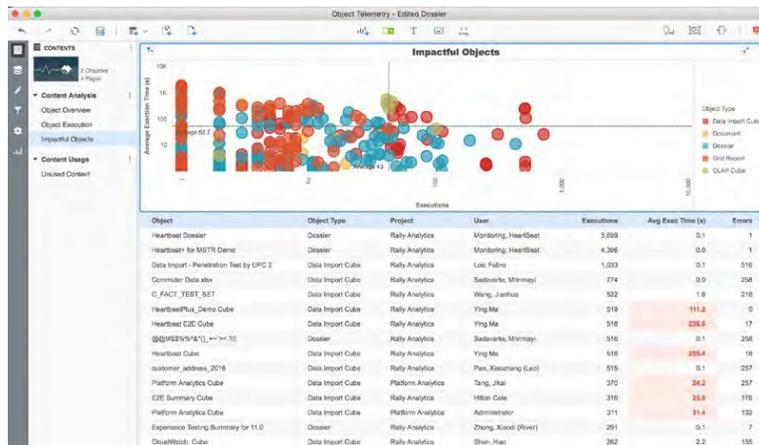
With Platform Analytics, administrators get a 360 degree view of their system, allowing them to easily stay on top of every aspect of their analytics applications, an especially useful feature in large scale deployments. It provides real-time insights on usage to measure patterns, system resource availability, performance and execution times, and error rates.

Platform Analytics is accessible as a dedicated monitoring application, like Enterprise Manager, and includes several pre-built dossiers that surface critical usage telemetry information. Administrators can access the dossiers within the application using MicroStrategy Workstation, Web, or Desktop. It is also possible to build custom dossiers to measure relevant KPIs. To make usage information on specific applications or dossiers more accessible, dashboards are embedded at the dossier and application levels.

Administrators receive out-of-the-box dossiers with Platform Analytics

The Platform Analytics application includes several dossiers that allow administrators to monitor their environments, such as:

- Compliance Telemetry
- Cube and Cache Monitoring
- Error Analysis
- Object Telemetry
- Project Overview
- Subscription Analysis
- User Activity
- MicroStrategy Badge Inbox Messages
- Intelligence Center

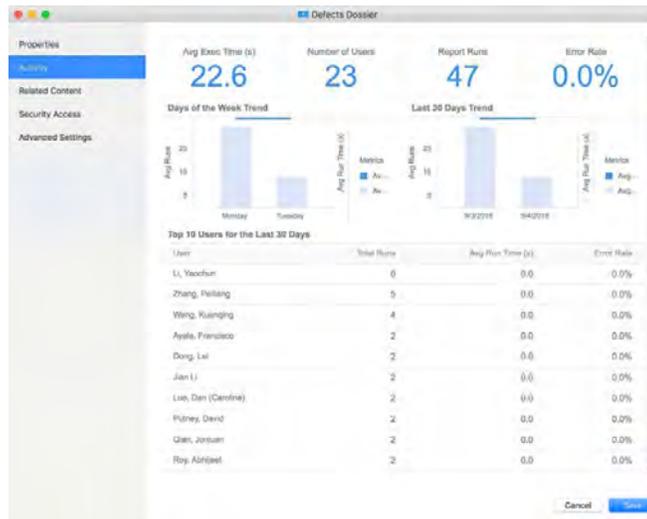


Self-service capabilities allow administrators to build custom dossiers to track relevant KPIs. Analysts or administrators can access the schema as well as data from external sources to create reports and dossiers.

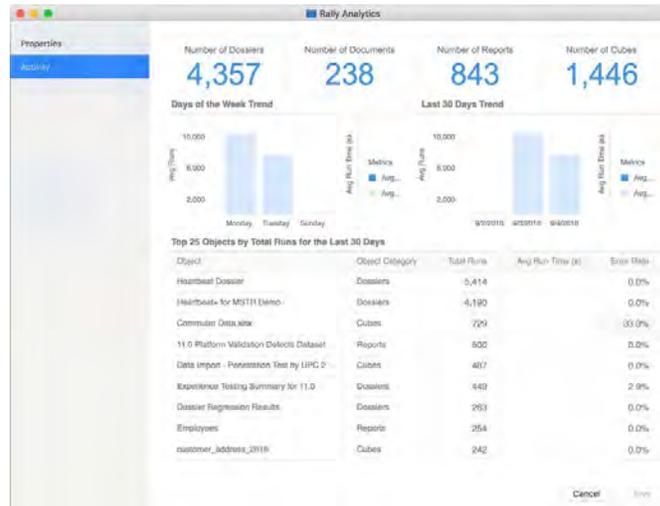
New usage activity dashboards are embedded in every dossier and application

Platform Analytics exposes telemetry data by directly embedding information into dossiers within Workstation. Users can find the telemetry and usage information by simply right-clicking on a dossier and selecting "Get Info" in the drop-down menu. For any dossier within any application, the following information can be tracked on the activity dashboard:

- Average execution time
- Number of users
- Top 10 users running that dossier
- Weekly trends
- Report runs, error rate, and more



Similarly, it is now possible to track information at the application level. Administrators can right click on any application within Workstation (also known as “Project” within Developer), to surface information, including the number of dossiers, documents, cubes, and reports within the application, weekly trends, top objects accessed, and more.



Easily configure and set up Platform Analytics

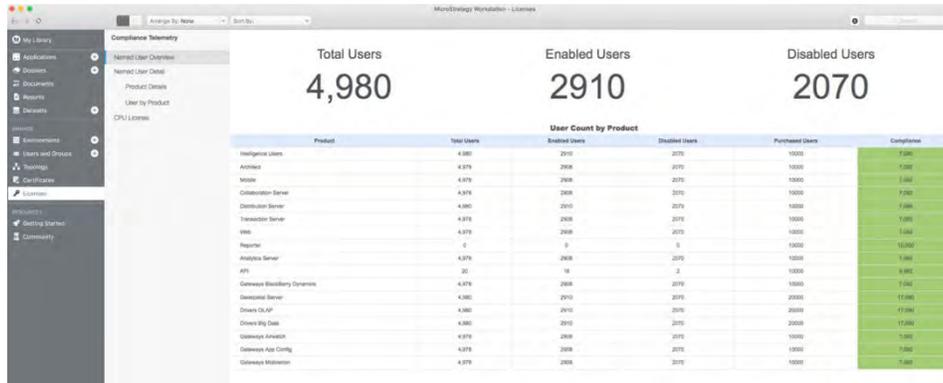
Configuring Platform Analytics requires setting up a repository, enabling and loading telemetry data into the repository, and more. The Platform Analytics repository can store usage data across all environments.

For information on how to configure and set up the Platform Analytics application, follow the link below:

https://www2.microstrategy.com/producthelp/current/PlatformAnalytics/WebHelp/Lang_1033/Content/home.htm

Audit license usage with a compliance telemetry dossier

With Platform Analytics, administrators get access to a compliance telemetry dossier embedded in Workstation (also accessible via Desktop, Library, Web and any other client), which enables them to audit their environments easily. The dossier provides information on the total number of users, in-compliance users, out-of-compliance users, over-allocated licenses, and more. This information is gathered from across multiple environments and gives administrators a real-time view of their entire deployment.



Monitor multiple MicroStrategy environments with Platform Analytics

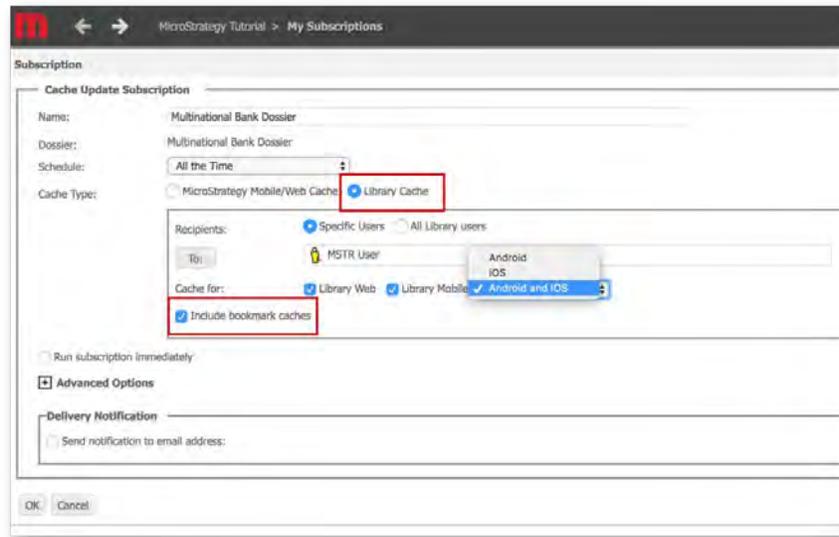
Platform Analytics can consolidate telemetry from multiple MicroStrategy metadata into a single Platform Analytics repository and project. This allows administrators to use a single instance of Platform Analytics to gather telemetry for all their environments, regardless of whether the environments share the same metadata or not, making it more robust and scalable.

Schedule Dossier and Bookmark Caches for MicroStrategy Library

With MicroStrategy Dossier, users automatically save the last state of analysis with personalized shortcuts or views in the Library. Dossier caches are generated for these personalized views for each user to promote better performance. Administrators can make changes to the number and size of caches being generated in the system via Workstation. With these settings, administrators have the flexibility of allowing the caches to be generated for optimal performance, while governing them to avoid any scalability or memory issues.

Administrators can also schedule dossier caches for Library (both Web and Mobile). The subscription can be defined for specific users or be set to "All Library users" which will create dossier caches for every user that has added the dossier to their Library, and any that add it in the future. In addition, administrators can also choose to schedule bookmark caches as optional when setting up the dossier cache subscription.

Scheduled dossier caches will ensure that the latest data is stored in a server-side cache delivering a high performance or reduced loading time to end users for all client applications.



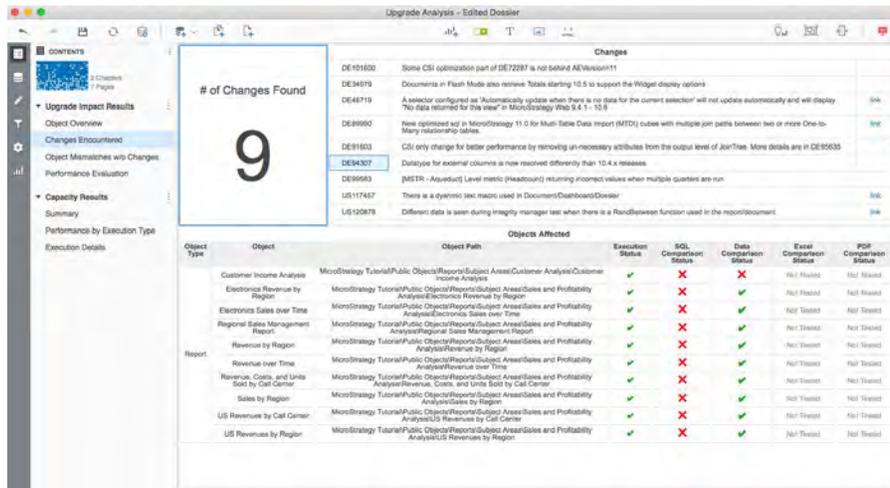
Perform End-to-End Upgrade Testing for Capacity Planning and Object Migration Analysis

MicroStrategy 2019 introduces the new Capacity Testing Tool, which provides end-to-end testing for sizing, upgrade validation, and more. This command-line tool provides platform administrators a quick and easy way to configure end-user simulated tests and can test system resources and throughput to help ensure that enterprise environments are properly sized and tuned to provide the best experience. Additionally, its able to execute the same test across multiple environments providing the ability to see the performance of a new version of MicroStrategy versus the current platform release being used.

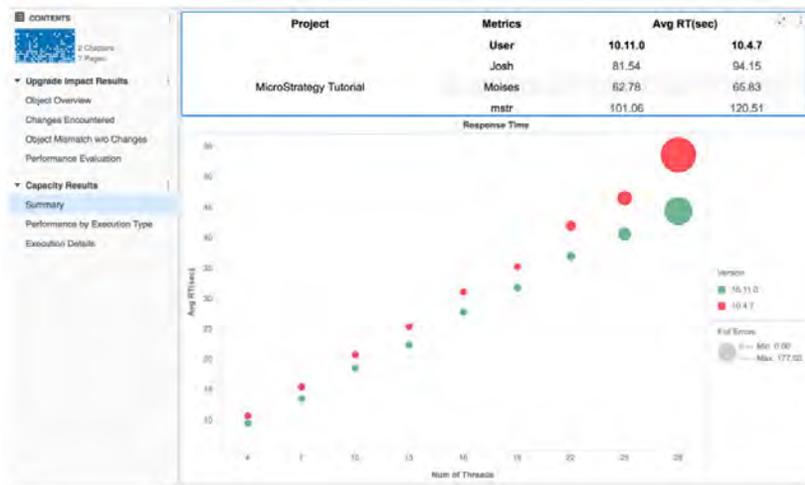
For more detailed information on the Capacity Testing Tool, refer to the Upgrade Guide [here](#).

Once testing has been completed, administrators can use the Upgrade Analysis dossier, to quickly analyze performance results to evaluate upgrading to the new platform release.

With MicroStrategy 2019, Platform Administrators can upgrade their environments with more confidence by performing a comparison analysis of all the differences derived from upgrading the software with an explanation of the cause or reason for such changes by using MicroStrategy Integrity Manager. With the added ability to compare data for Report Services documents and dossiers against different environments and versions, administrators can now perform SQL and data comparison analysis for all content objects. Administrators can use the results of Integrity Manager tests to analyze and understand changes and improvements on the upgraded environment with the **Upgrade Analysis dossier**.



The Upgrade Analysis dossier consumes the results of comparison testing in MicroStrategy Integrity and the new MicroStrategy Capacity Testing Tool to help Platform Administrators understand the impact of upgrading from engine changes along with performance improvements. The dossier includes upgrade impact analysis based upon the Integrity Manager testing to identify objects that are affected by changes in the engine behavior, manifested as differences in SQL, data or significant changes in performance. The analysis also correlates unmatched differences to a specific code affected modifications or defect fixes that were made from 10.5 to 11.0 with an explanation of the change that can be found in a linked MicroStrategy Community article to better understand why the change was made and how it has impacted the object. The capacity results provide the granular data necessary to compare differences in performance, providing the ability to identify any outliers that may need to be investigated further.

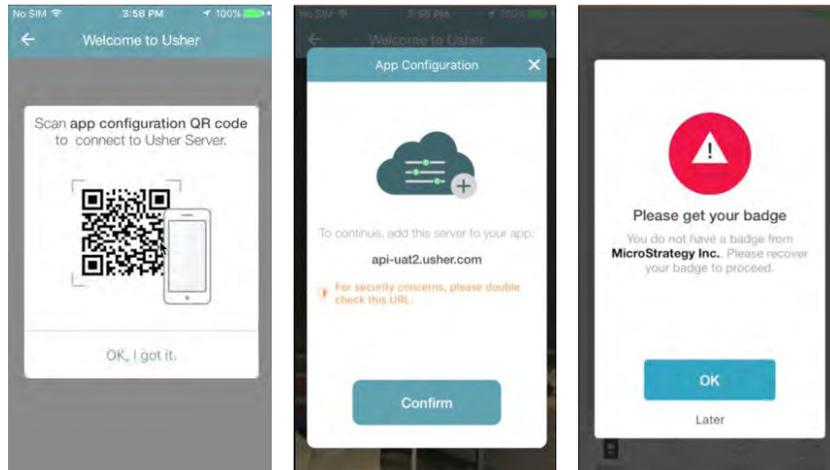


For more detailed information on the Upgrade Analysis Dossier, refer to the Upgrade Guide [here](#).

Easily Set up MicroStrategy Badge with Auto Server Configuration

Badge has a simple method to recover or load a badge. Badge users simply navigate to a Badge-enabled application in their browser and scan the QR code to attempt access, regardless if the user has the correct badge provisioned to their mobile device. If the user's Badge app lacks the correct server configuration or required badge, the user is prompted to approve the action of setting the configuration and recovering the badge. If the corresponding Badge Network leverages Active Directory or an Open LDAP directory, the user is also prompted to enter their username and password.

Support provided for Okta integration



Badge provides integration <https://www.acceptto.com/> with the Okta identity and access management

1 User scans Badge QR Code on the login page of the application.

2 User approves new server configuration.

3 User approves badge recovery to download the corresponding badge.

platform via SAML. Any customer who is using Okta within their enterprise can now enable their users to single sign on (SSO) into applications by using password-free Badge digital credentials. This feature will enable single sign-on to over 5,000 applications which are pre-integrated with Okta's identity cloud.

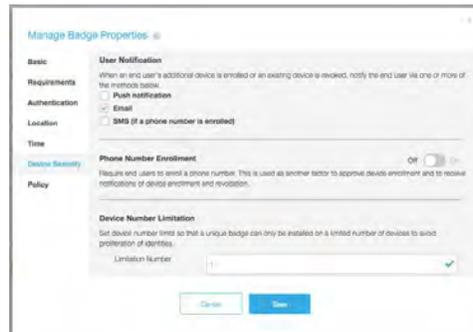
Badge leverages Okta's inbound SAML option and requires only simple configuration including downloading the IDP certificate from Badge and uploading Okta service provider metadata.

Support provided for AMAG symmetry and Brivo OnAir PACS

Badge now works with AMAG Technology's Symmetry and Brivo's OnAir physical access control system (PACS). Badge app users can digitally interact with their enterprise physical infrastructure including accessing doors, gates, and other resources managed by these PACS. AMAG and Brivo customers can now reduce friction and frustration of users by leveraging soft keys, QR codes and Bluetooth beacons supported by Badge to access doors leveraging the user's mobile phone to serve as a secure digital badge. AMAG and Brivo customers can also exploit mobile biometrics, entering of PIN codes, geo-fencing, two-way messaging, and other advanced features not available in traditional and competitive badge solutions. Badge Administrators are also able to leverage rich Badge app telemetry data to run pre-integrated analytics reports on usage behavior, gateway utilization, and other physical access intelligence.

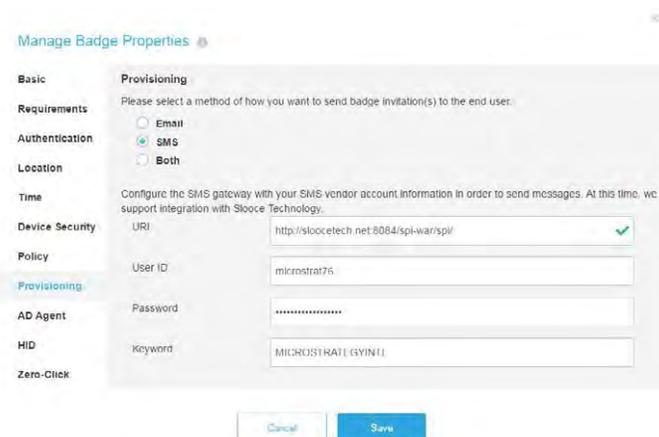
Control the number of authorized devices

MicroStrategy Administrators can limit the number of mobile devices that users can install their badges. A different limit can be set for different badges. Limiting the number of devices per badge type improves a security posture. Device management and central governance is further enhanced by layering this new feature with the previously released Phone Number Enrollment option to more tightly bind a user to a defined set of devices.



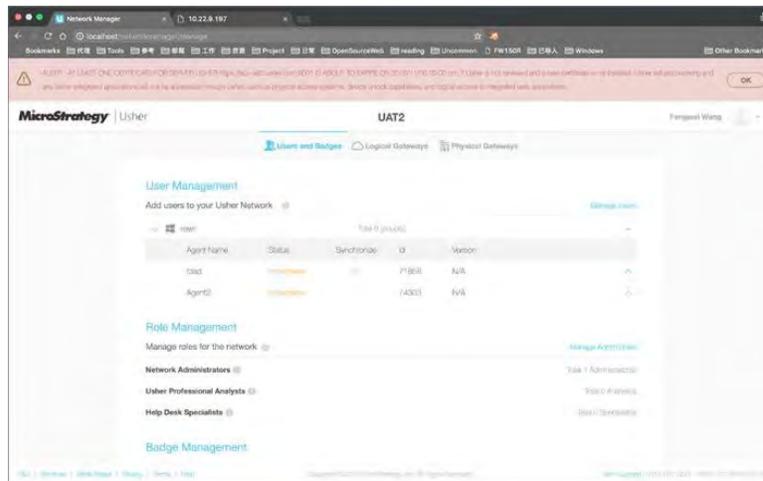
SMS badge distribution enables easy badge installation and recovery

MicroStrategy Administrators can help users install or recover badges by sending a link via text message. This can be done in addition to or in place of an email communication. Provisioning via SMS communications improves Badge's security posture and more tightly binds the badge to a known, registered mobile device. Although not used by Badge for identity authentication purposes (per NIST SP 800-63-3), device ownership and presence can be routinely confirmed using a one-time verification code, including prior to unlocking the badge for first time use. In fact, many organizational security policies prohibit the use of email for issuing credentials. It is harder for a hacker to gain access to a specific smartphone than it is to gain access to an email account which can be accessed from anywhere without physical theft. Additionally, this feature allows badges to be distributed to users without an Active Directory or other Badge supported directory profile. Out of the box, Badge has integrated with Slooce (<http://www.sloocetech.com>) and Twilio (<http://www.twilio.com>) to deliver this functionality. Please contact MicroStrategy to find out if your existing in-house or third-party Short Message Service (SMS) service provider is supported.



Digital certificate expiration notifications are now sent to Badge users

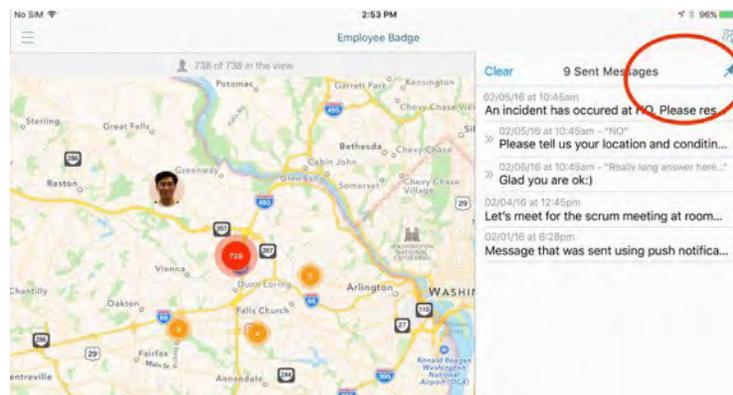
Many Badge components and connections rely on the use of various security certificates (TLS) which expire at regular time intervals. To help prevent customer environments from becoming unavailable unexpectedly due to expired certificates, Identity Manager checks digital certificates on a daily basis. When a certificate reaches 60, 30, or 3 days from expiration, an email will be sent to all Network Admins warning them of this so that they can renew Badge and install a new certificate before expiration, therefore averting a temporary loss of Badge access to a variety of connected resources. In addition to email alerts, when a user with Network Administrator role logs into the system, an alert will be displayed if the Badge certificate is due to expire in 30 days or less.



Communicator enhancements delivers more for administrators

Communicator allows administrators to communicate with Badge users with push notification polls and receive responses in real-time. The number of poll response options is five. Furthermore, sent communications and received responses display in Communicator as a threaded conversation, accessible in a pinned panel as well as in a drop-down menu.

Badge pre-caches photos and demographic information of Badge users in the vicinity of the Communicator user. This way, a subsequent query by the Communicator user does not have to reach out to the server, decreasing response time by a significant amount for any Badge users who are nearby.



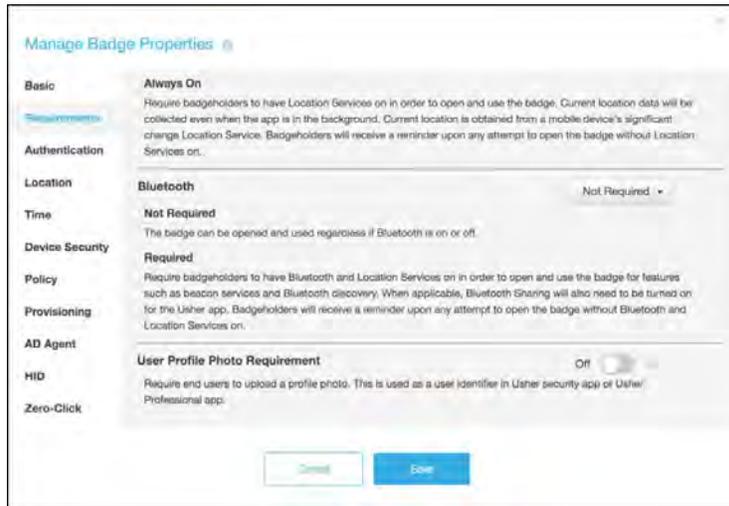
Okta Universal Directory support is now available

Badge supports Okta Universal Directory as an Identity Management source. This is in addition to existing support for Microsoft Active Directory, OpenLDAP, AWS Directory Services, Novell NDS (NetIQ eDirectory), Apple Open Directory, and Apache Directory. Thousands of organizations are using Okta as their corporate user identity repository to aggregate multiple directories and govern internal access. Badge's identity engine synchronizes to Okta Universal Directory for person-records and attributes, supporting the enforcement of Okta provisioning as an authoritative source for authorization (privileges, entitlements and restrictions).

Connect multiple Identity Networks to a single logical resource

Multiple Identity Networks can connect to the same logical resource. The logical resource identifies each Identity Network and its corresponding Gateway Agent as a unique, trusted Identity Provider with distinct signing certificates. This enables Badge customers to point as many Identity networks as they need at the same logical resource (e.g., Salesforce).

Photo policy enhancements improve Badge



Several Badge features, such as identity validation in the mobile app as well as user location and communication in Communicator, are supported by allowing users to see a photo of the user(s) with whom they are interacting. In MicroStrategy 10.7, Network Manager allows an administrator to configure a Badge in a way that can require users to upload a photo to his or her badge if one does not currently exist. Failing to do so will prevent further access to the resources secured by the badge.

For implementations where an administrator does not require a user photo, the initials of users who have not uploaded a photo are displayed in the photo field to demonstrate to all parties involved (e.g., when a Communicator user is looking at a grid of users, or in a peer-to-peer validation scenario) that the user image repositories have loaded to the fullest extent possible.

Badge properties' reporting identifies users and user behavior

Badge properties set by Identity Manager that can require end-user action or compliance are able to be reported on with a new out-of-the-box dashboard and schema. This way, Badge can report on pertinent user behavior outside of access requests and geography. The new reports display information on the number (and identities of) users who have or have not configured their badges in certain ways, filtered by and overlaid against the corresponding Identity Manager setting at the time of the action. A few examples of newly trackable actions include:

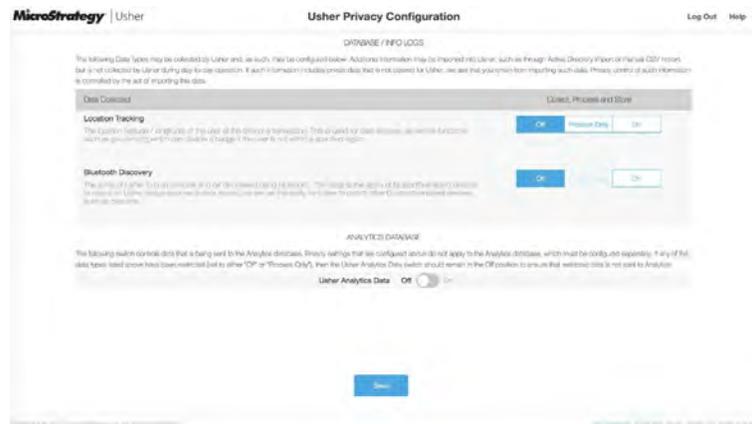
- Location Services Enablement
- Bluetooth Enablement
- Badge Authentication
- Photo Uploaded
- Multiple Device Installations
- Terms of Use Acceptance

Secure deployments ensure user privacy

Administrators can tailor their deployment to protect their users' privacy. Badge collection and storage of certain data elements can be restricted with a flexible set of controls.

Badge Privacy screen controls:

- Transaction location information
- Bluetooth discovery
- Badge Telemetry feed to Analytics Active Directory controls (existing):
- Control information imported from Active Directory by opting not to import restricted or personal information, e.g., don't import phone number
- Specific Badge Functions Control (existing):
- Control information collected by opting not to require data that should be restricted; e.g., don't require that users enter their phone number



Discovery with caching, filtering, and search on attributes and groups

Communication tools in Communicator have been enhanced, making it easier than ever to send messages to your specific, targeted users. Additional user attributes can be configured in Network Manager for more filter and search options, and a new, streamlined workflow makes managing groups easier.

In addition, the Previously Discovered Users list provides the ability to select users who have recently exited Communicator range. For example, a security guard who monitors employees entering an office building could send a message only to those who were recently in the area when a set of keys were found.

Lastly, user data is now cached, providing better discovery and search performance, even when connectivity is low or drops entirely.

Communicator is now available to all users, with role-based functionality restrictions

Communicator is now available to all users irrespective of their Communicator analyst role. However, access to specific functionality can be restricted based on a user's role and their access level for that badge network, including the ability to view other users' specific locations and profiles.

Communicator users without the Analyst role will not have access to the map view showing the location of other users. Communicator users without the Analyst role will see contact information for a user but will not have access to the "View Profile" link to view the badge interaction history of individual users.

Badge issuance enhancements enable more security

Enterprises require Separation of Duties across many roles, including Badge Issuance Approver, in order to mitigate the danger of a single employee taking unauthorized actions. The Approver role is activated and assignable using Network Manager.

Approvers are responsible for reviewing badges that are ready to be issued prior to their issuance. They may review the identity record, including biographic and biometric data, and enter notes (e.g., a case number, background check results, etc.) to explain the approval decision, before selecting "Approve" or "Deny". The capability is available in workflows for all new badges and badges re-issued after being previously revoked centrally.

New "Master Administrator" role supports better admin capabilities

Identity Manager adds a new Master Administrator role, supporting Separation of Duties and improved user administrator capabilities. The Master Administrator role is activated and assignable within Network Manager. One Master Administrator is required but up to five are available. A minimum of two is recommended for security best practices.

Multi-directory support delivers a composite identity record

MicroStrategy Identity Server now supports multiple directory sources simultaneously, building a composite identity record by pulling all mapped attributes for the person from across all directories. Directories may be organized on order of precedence for when duplicate records or attribute data are discovered, and log files report all conflicts encountered for every synchronization attempt based on user name match within different directories.

Login carousel gives users more options

Badge now allows administrators to provide users with a carousel of login methods. Login methods may be set on a per- application basis.



Get a custom user profile with active directory integration

The new Communicator now offers an enhanced user profile that can be customized to include any Active Directory attribute. This provides enterprises with the flexibility to include the information most relevant for their needs, from contact info and office location to custom fields. Customizing profiles to include information valuable to the organization and its users improves adoption and productivity. Customization is done within Identity Manager through simple grouping and ordering of attributes.



MicroStrategy Library App and MicroStrategy Mobile

Both apps are Certified for iOS 12

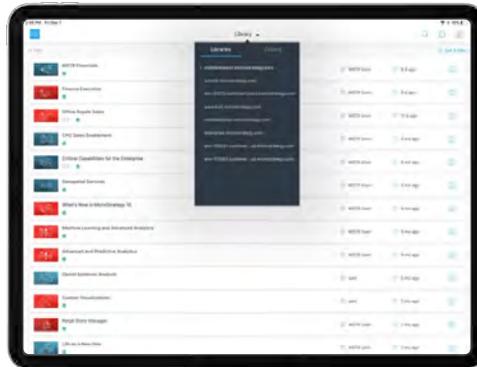
The MicroStrategy Mobile and MicroStrategy Library out-of-the-box apps are compatible and certified with Apple's latest operating system release, iOS 12, which Apple reports to be faster and more responsive.



Offline access and improved dossier performance is now available in MicroStrategy Library App

The MicroStrategy Library app has vastly improved performance and offline capabilities. Organizations can now leverage subscription caches that enable users to access critical content faster without needing to regularly re-execute the dossier.

Additionally, pre-caching is now available on iOS devices—making critical dossiers available offline without requiring users to execute the dossier first. Users can identify the pre-cached dossiers in their Library via a green indicator.



Caching workflows have been optimized to ensure that device caches automatically load when available. Users can view their dossiers while the server reconciles and downloads the newer versions of them.

When a new cache is available, users are prompted with an in-app message to refresh the dossier.



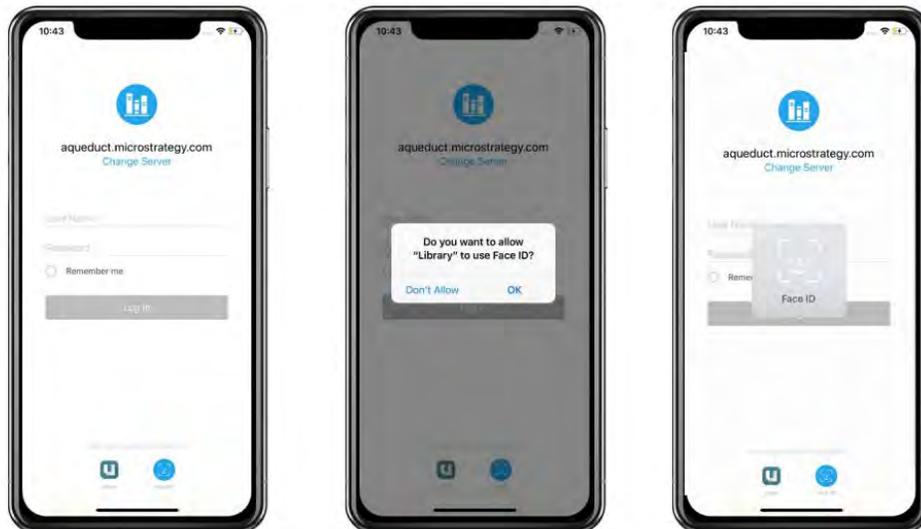
“Use Mobile” Privilege is now Required to Access MicroStrategy Library

To access the MicroStrategy Library app, administrators will need to grant “Use Mobile” privileges to users. If the privilege is disabled, users will see a “Need Permission” message. Users can tap on “Send Request” to contact their administrators directly from the app.



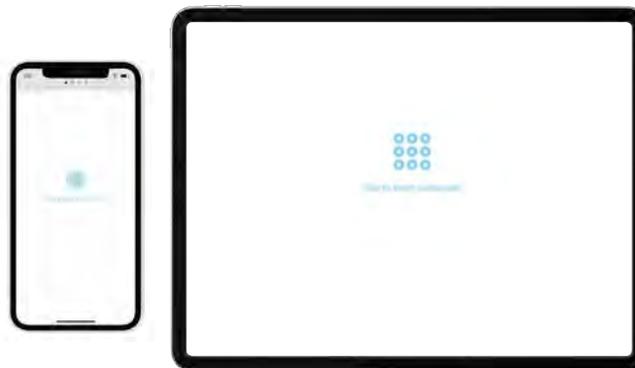
Employ Face ID integration for more convenient access

iPhone X users can use Face ID as an authentication method via a native integration with MicroStrategy Mobile and Library apps. At the app level, users can use the Face ID instead of the device passcode to unlock apps. At the document level, users can be prompted to use Face ID before gaining access to certain documents and reports as an additional authentication to secure documents. This provides on-the-go business users with a quick, convenient way to access their apps and analytics.



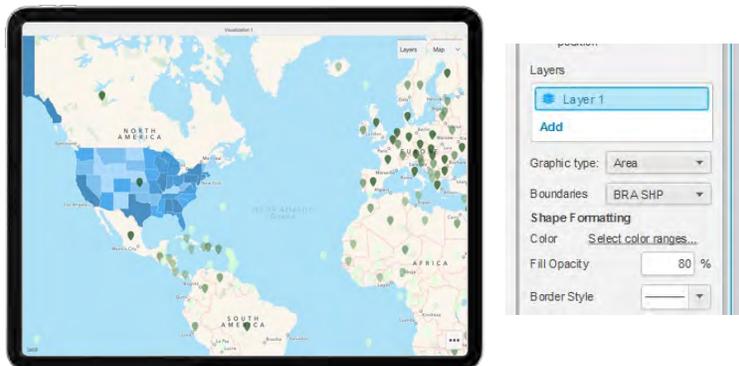
Redesigned authentication workflow delivers a more intuitive user experience

Mobile users will now be prompted to authenticate via TouchID, FaceID, or Device Passcode, depending on their device type and application settings. If one of the authentication modes fails, our new design will guide users seamlessly to the next available authentication method. When the device is locked, or the application is running in the background, users are prompted with different lock screens as per the device's default authentication method.



SHP files are now supported for custom shapes

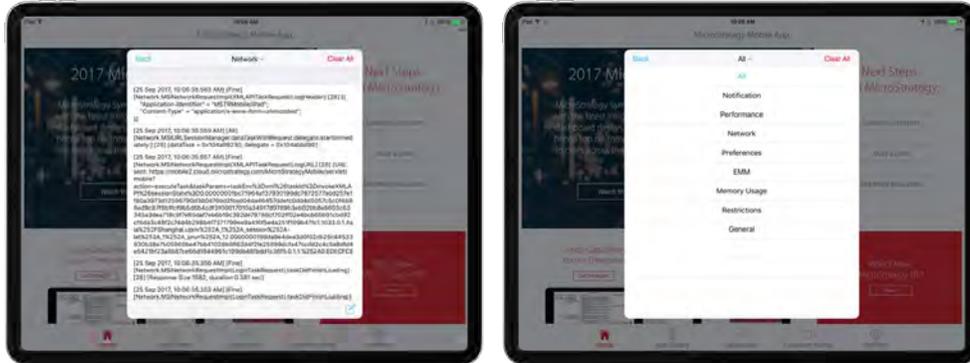
Previously, MicroStrategy allowed users to add custom shapes using KML shapes in the Map widget. App developers can now use .SHP files to deploy custom shapes and areas maps. This parity with MicroStrategy Web provides a consistent user experience and behavior across different web and iOS interfaces.



Log enhancements enable performance improvements

MicroStrategy Mobile iOS users can now store large amounts of log information within the app. This enhancement enriches the user experience by reducing the total time it takes to resize and display logs. Log entries in the mobile app are now classified into different modules, such as performance, memory usage, notifications, network, preferences, EMM, restrictions, and general. End users can filter the modules and view the log entries to get a better understanding of app operations. For example, they might look at the memory usage log to understand why a large document or multimedia file didn't load and see how much space they need on their device to load it properly. This also helps end users provide the logs to administrators to conduct further analyses and performance optimization tweaks.

This new log framework makes the logs more digestible for analysis; Users can search, view and analyze logs by modules rather than having to review one massive pile of rows. For example, users can focus on reviewing the performance log to analyze processing time for server and network operation.



Configure and Deploy Apps via Native EMM Integration

MicroStrategy Mobile continues to provide native integration with AirWatch, MobileIron, and Blackberry Dynamics to configure, deploy, and secure apps.

The latest MicroStrategy Mobile SDK available is certified with the following vendor builds:

		
<p>MicroStrategy Mobile AirWatch MicroStrategy version: 10.11 iOS Watch SDK: v5.9.5.1 Supported: iOS10 - iOS11 XCode Version: XCode 9.x</p>	<p>MicroStrategy Mobile BlackBerry Dynamics MicroStrategy version: 10.11 iOS BlackBerry SDK: v4.0.0.140 iOS Supported: iOS9/above, iOS11 XCode Version: XCode 9</p>	<p>MicroStrategy Mobile MobileIron MicroStrategy version: 10.11 iOS MobileIron SDK: v4.0.0.363 iOS Supported: iOS10, iOS11 XCode Version: XCode 9</p>

Additionally, the MicroStrategy Mobile and MicroStrategy Library apps on both iOS and Android have been compiled according to AppConfig guidelines. No SDK use is required; customers can use the out-of-the-box apps to deploy their applications securely. They can also configure applications remotely via any of the leading Enterprise Mobility Management (EMM) vendors compatible with AppConfig standards.



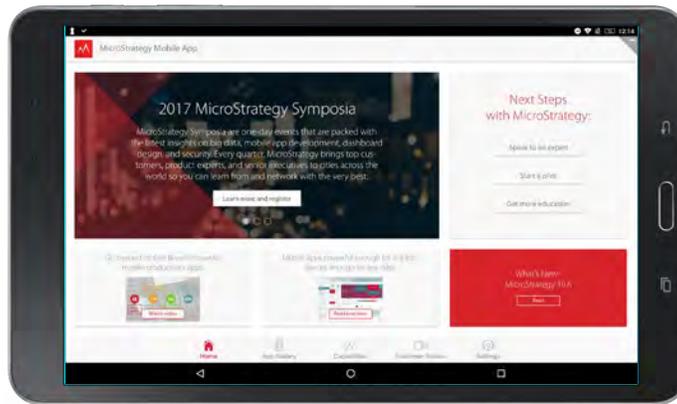
Custom Error Messages Available on Mobile

Administrators can customize error messages during report/document execution to make the error messages easier to understand by mobile users. Administrators can also override unhandled intelligence server error messages.



Embed images during Android app compilation

The Android framework supports bundling images as part of the app resources to boost performance. Bundling images during app compilation eliminates requests for downloading images that are not expected to change in the short term. This feature accelerates app performance through better image loading. This is especially helpful when users are located in a remote area with weak network conditions.



Best-fit image is now auto selected based on device resolution

Android app designers can now define multiple resolutions for images in their dashboards and then allow the Android device to auto-select the best-fit image depending on its own resolution. With so many different Android device resolutions in the market, this responsive design capability makes it easier for Android app developers to optimize user experience.

New Administrative Features with MicroStrategy Cloud Console

Organizations can deploy MicroStrategy 2019 on public and private cloud platforms, on-premises, or hybrid environments.

Available with MicroStrategy 2019, organizations can easily launch pre-configured, fully-optimized, enterprise-ready environments on Microsoft Azure or AWS in under 30 minutes – with a centrally managed and intuitive provisioning and management portal.

In addition to having access to the incredibly easy to use management portal, organizations also have the means to also ensure compliance and governance on single-tenant infrastructure with certifications and audit-friendly service features for PCI, ISO, SOC, and other regularity standards, available as a subscription Platform as a Service.

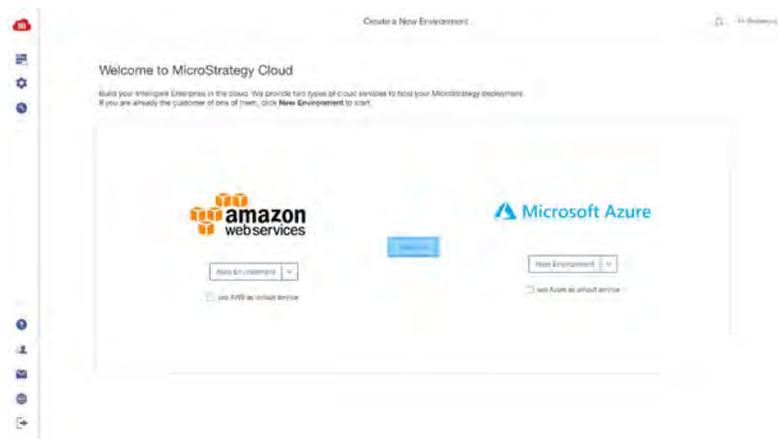
The convenient web-based management console allows administrators or architects to maximize resource use and adapt to workload changes by scaling compute elasticity — vertically and horizontally. Easy menu driven options allow administrators to scale up or down on a predetermined schedule to meet anticipated demand and save cost during off hours or periods of low system usage

With the MicroStrategy Cloud Console, organizations can enable 99.999% uptime and also up to 4 -node clustering with linear scalability.

Organizations can try the MicroStrategy Cloud Console, free for 30 days to experience enterprise analytics in the cloud and try out the new capabilities using the centralized management console.

Microstrategy is Now Optimized for AWS and Microsoft Azure

MicroStrategy has partnered with Microsoft Azure and AWS to deliver best-in-class security, performance, reliability, and support – ensuring that your analytics and mobility applications are in good hands.

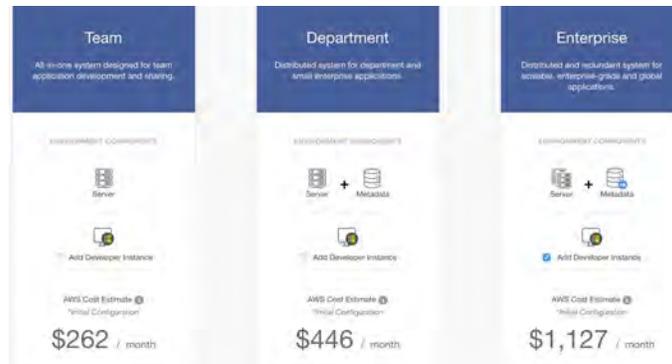


For organizations with AWS or Microsoft Azure strategies, administrators can deploy and manage MicroStrategy environments on their own using the new and updated provisioning console. With the centralized management portal, organizations of any size can now launch fully configured and ready-to-use

enterprise analytics and mobility projects—all in less than 30 minutes. Administrators, for the first time, have total control of their environments, making it easy to start, stop, resize, and terminate as needed—ensuring access to the latest features and capabilities.

Custom, easy deployment is now available

With the MicroStrategy Cloud Console,, organizations can choose from separate pre-packaged deployment options based on the size and need. Available deployment options that cover sandbox testing needs to enterprise ready and high availability requirements are: Team, Department and Enterprise.



MicroStrategy on AWS

Organizations of any size can now launch fully configured and ready-to-use enterprise analytics and mobility projects on AWS—all in less than 30 minutes. With a modern provisioning and management web-based console, administrators have total control of their environments, making it easy to start, stop, resize, and terminate as needed—ensuring access to the latest features and capabilities.

Deployment options available for MicroStrategy on AWS within the Cloud Console:

1. MicroStrategy on AWS for Teams:

- Includes Intelligence Server, Web/Mobile/Library Server, Collaboration, Badge, Platform Analytics, and Metadata/statistics database installed on one Server.
- Optional:
 - Windows Utility box add-on for Developer and MicroStrategy Tools.
- Additional details:
 - Global Availability in 12 Regions across N. America, Europe, and Asia
 - OS on RHEL Linux or AWS Linux
 - MySQL Relational Database Service installed on the server for the MicroStrategy metadata and statistics.
 - Scale from 2 vCPU/15.25 GiB RAM to 64 vCPU/488 GiB RAM

2. MicroStrategy on AWS for Department:

- Includes a robust 3 tier architecture on a small and easy to manage footprint with the use of java virtual machines. Includes Intelligence Server, Web/Mobile/Library Server, Collaboration, Badge, and Platform Analytics, installed on one Server.
- Metadata and statistics reside in separate database.

- Optional:
 - Windows Utility box add-on for Developer and MicroStrategy Tools.
- Additional details:
 - Global Availability in 12 Regions across N. America, Europe, and Asia
 - OS on RHEL Linux or AWS Linux
 - MySQL Metadata
 - Scale from 2 vCPU/15.25 GiB RAM to 64 vCPU/488 GiB RAM

3. MicroStrategy on AWS for Enterprise:

- Includes a robust 3 tier architecture on a small and easy to manage footprint with the use of java virtual machines. Includes Intelligence Server, Web/Mobile/Library Server, Badge, Platform Analytics, and Collaboration installed on a 2-4 node cluster for increased performance and high availability
- Metadata/statistics database installed on a separate highly available database enabled by database replication to a standby database
- Optional:
 - Windows Utility box add-on for Developer and MicroStrategy Tools
- Additional Details:
 - Global Availability in 12 Regions across N. America, Europe, and Asia
 - OS on RHEL Linux or AWS Linux
 - MySQL Metadata
 - Scale from 2 vCPU/15.25 GB RAM to 64 vCPU/432 GB RAM

MicroStrategy on Azure

For the first time and new in MicroStrategy 2019, organizations can now launch fully configured and ready-to-use enterprise analytics and mobility projects on Microsoft Azure—all in less than 30 minutes. With a modern provisioning and management web-based console, administrators have total control of their environments, making it easy to start, stop, resize, and terminate as needed—ensuring access to the latest features and capabilities.

Deployment Options for MicroStrategy on Azure

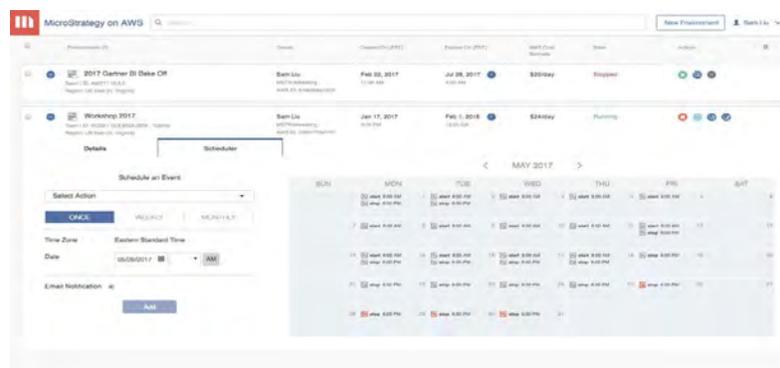
MicroStrategy on Azure:

- Intelligence Server, Web/Mobile/Library Server, Collaboration, and Metadata/statistics database installed on one Server.
- Optional:
 - Windows Utility box add-on for Developer and MicroStrategy Tools
- Additional details:
 - Available in US Easy and EU West
 - OS on RHEL Linux
 - MySQL Metadata
- (2vCPU 16GB RAM to 64 vCPU 432 GB RAM)

Maintain complete control of your cloud environment

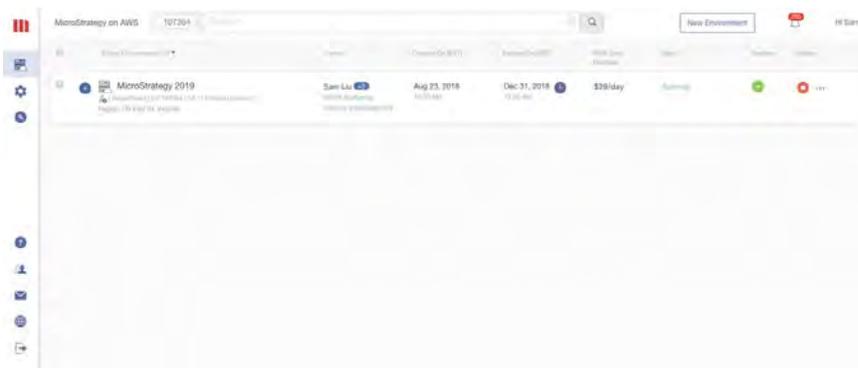
Administrators who sign up for a MicroStrategy Cloud Console account gain access to a new and updated web-based provisioning console. This self-service administration tool, gives organizations the ability to:

- Create new environments
- Choose from pre-configured deployment options (Teams, Departments, Enterprise)
- Select the MicroStrategy version, deployment size and geographic region
- Deploy into existing or new AWS Virtual Private Cloud (VPC) or Azure Virtual Network (VNet) accounts
- Perform administrative tasks
- Schedule administrative tasks (Currently Available for AWS)
- Create custom workflows with our RESTful API (Currently Available for MicroStrategy on AWS)



The navigation bar enables easy access to cloud resources

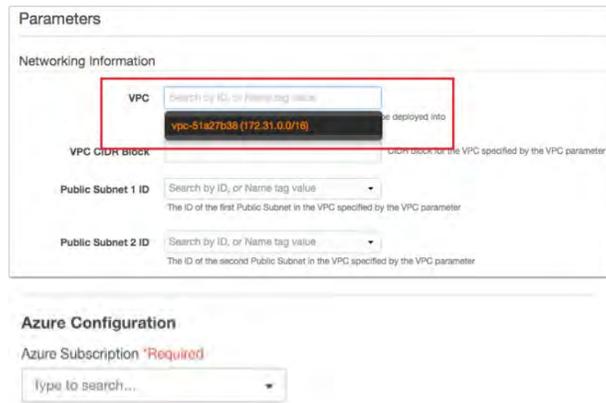
The navigation bar consolidates access to all cloud resources in one convenient location that is always accessible, no matter where you are in the provisioning console. This includes easy access to environments, AWS or Azure accounts, and API access. It is also now easier to change users, get help, submit feedback, or change languages, thereby facilitating navigation in the MicroStrategy on AWS or Azure console.



Deploy MicroStrategy into an existing virtual private cloud for AWS (VPC) or Virtual Network for Azure (VNet)

Customers are able to deploy, manage, upgrade, and resize their own MicroStrategy on AWS or Azure environments within their own VPC or VNet accounts and still leverage the powerful deployment and management tool.

Deploying MicroStrategy into existing VPC or VNet accounts will now give customers full control of their own AWS or Azure security settings.

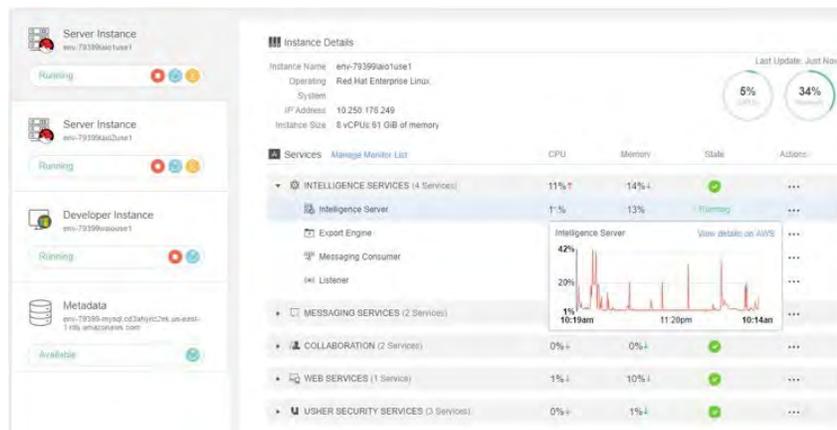


Deploy on Linux

MicroStrategy on AWS can be deployed on Linux. Customers have an option to deploy on both RHEL Linux or AWS Linux. MicroStrategy on Azure for teams will be available on RHEL Linux with MSTR 2019.

Easily monitor your instances

MicroStrategy Cloud Console lets administrators monitor and manage the status and performance of their instances and services from right inside the provisioning console. Administrators can now see CPU usage and memory usage on the entire instance, or at each individual service. Trends are provided so that administrators can make informed decisions on when to scale their environments up or down based on usage.

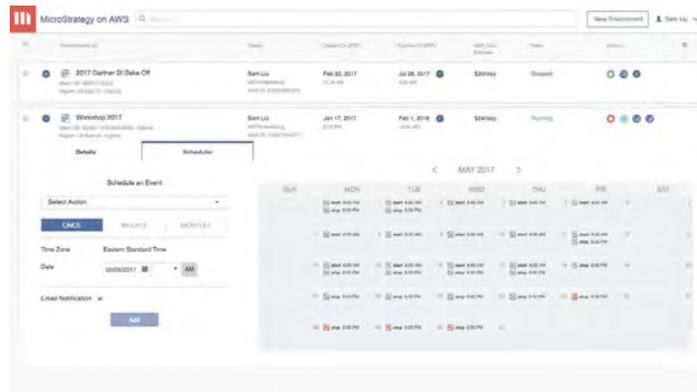


Easily manage environments and services

The MicroStrategy Cloud Console allows administrators to start, stop, or restart the entire environment or the individual instance. The MicroStrategy Cloud Console allows administrators to perform these actions at the specific services level. These services help manage the Intelligence Server, export engine, messaging services, or security services without having them interfere with other services. If administrators may stop the collaboration service without affecting other users.

Services	CPU	Memory	State	Actions
INTELLIGENCE (4 Services)	1%	22%	Running	...
Server	1%	13%	Running	Stop, Restart
Export	0%	4%	Running	...
Metadata	0%	5%	Running	...
Listener	--	--	Stopped	...
COLLABORATION (3 Services)	0%	1%	Running	...
Server	0%	1%	Running	...
Store	0%	0%	Running	...
Cache	0%	0%	Running	...

In addition to manually being able to start, stop, and restart and manage your environments, administrators can also schedule tasks on the portal with a familiar calendar interface.



In addition to starting and stopping, administrators can also schedule tasks to resize environments, and to manage costs based on usage.

Schedule an Event

Resize

16 vCPUs 122 GiB of Memory

On: S M T W T F S

Time Zone: Eastern Standard Time

Time: 8:00 AM

Email Notification

Add

Seamlessly upgrade with Critical Updates

This functionality makes upgrading the platform easier than ever before. Administrators can upgrade to the latest Critical Update (previously known as hotfix) with a single click.

With the general availability of any Critical Update, the latest version is always automatically available on the MicroStrategy Cloud Console. An upgrade button will appear on the main administrative page, and by clicking on it will automatically validate the upgrade process and administrators can then choose to schedule the upgrade at an off-peak time or can also upgrade instantly.

For instance, for deployments that are on MicroStrategy 2019, will see an “upgrade” button with the update is available. Clicking on which, the ensure deployment will be upgraded to MicroStrategy 2019 Critical Update 1, when available. The process will automatically restart the MicroStrategy Server, and the entire process takes less than an hour. Full backups of your environments are also created during upgrades.

Snapshot and Restore MicroStrategy applications enable a risk-free upgrade path

Administrators now have the option to deliver a risk-free upgrade path to a parallel environment with all the artifacts from the existing or older version, completed in as little as two hours. It now possible to generate a backup file (mstr.bak) that captures a backup of your MicroStrategy environment which can be easily and quickly restored into a new MicroStrategy on AWS or MicroStrategy on Azure instance. This enables rapid environment upgrades and migrations and allows customers to easily migrate between on-premises, MicroStrategy on AWS and Azure, and also allows organizations to create parallel environments for major MicroStrategy upgrades. This is currently available for Linux environments with MySQL metadata.

With this feature, administrators can backup metadata, cubes, caches, inbox, images, plugins, ODBC, system properties and configurations, statistics, dossier comments, and restore in MicroStrategy on AWS or Azure environments.

Restore an Environment

Restore environment from MicroStrategy Backup. ⓘ

Enter the s3 bucket backup file path below. If you don't have a s3 bucket, [create a new bucket](#) and upload your backup file to that bucket. ***Required***

Example:

Important: Backup file version cannot be higher than the version selected above.

Contact Information Create Multiple Environments

First Name	Last Name
<input type="text" value="Jin"/>	<input type="text" value="Yan"/>
Email	Last Name
<input type="text" value="jyan@microstrategy.com"/>	<input type="text" value="Yan"/>

The backup file, MSTR.BAK, snapshots the following components on your environment:

- Backup metadata database
- Backup selected (or all) projects
- Backup cubes & caches
- Backup Web/Mobile/Library images
- Backup Web/Mobile/Library plugins
- Backup Collaboration history
- Backup Mobile configurations
- Tomcat configurations (JVM size, timezones)
- Backup ODBC files

The MicroStrategy Cloud Console enables global expansion

MicroStrategy on AWS allows organizations to deploy the application directly into data centers in the North America, Europe, Australia, and Asia. These regions around the world allow organizations to deploy in a data center close to home, so they can deliver faster response times for mission-critical KPIs.

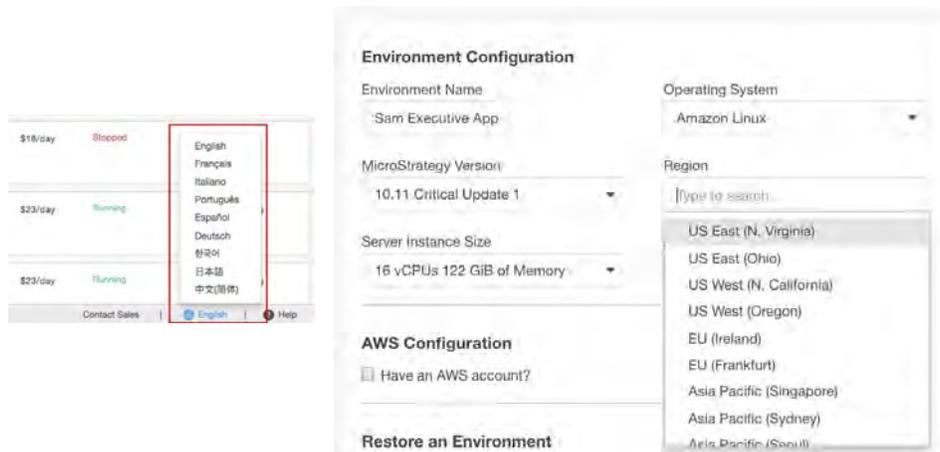
This makes it easier for organizations to comply with local data regulations. Customers can now deploy MicroStrategy on AWS in data centers in different locations: Northern Virginia, Ohio, Oregon, Ireland, Frankfurt, London, Sydney, Tokyo, Singapore, Seoul and Canada

- US East - Northern Virginia, Ohio
- US West
- Northern California, Oregon
- Asia Pacific - Singapore, Sydney, Tokyo, Seoul,
- Mumbai
- Canada - Central
- Europe - Frankfurt, Ireland, London

MicroStrategy on Azure for Teams will have availability in US East and EU West, for MicroStrategy 2019.

The MicroStrategy Cloud Console is now available in nine languages

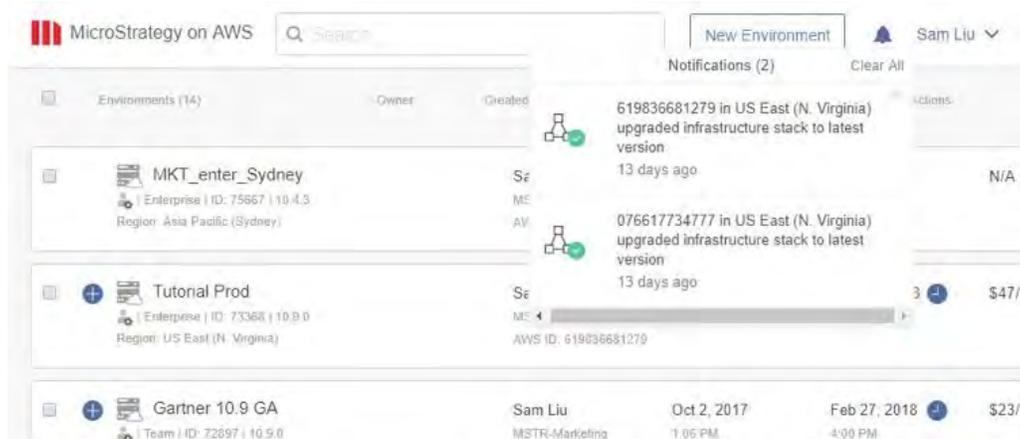
In addition to expanding the list of data centers around the world, MicroStrategy Cloud Console is available in 9 different languages: English, French, Italian, Portuguese, Spanish, Dutch, Japanese, Korean, and Chinese.



Receive important information via Notification Center

With the notification center customers are able to receive important information regarding their environments via notifications as shown below.

In situations where a specific cloud environment is about to expire, or if there are updates available, the MicroStrategy Cloud Console notification center will notify users with relevant updates they may have.



Automatic Architecture Updates are available for the MicroStrategy Cloud Console

MicroStrategy works hard behind the scenes to provide you the most optimized platform architecture. Each time MicroStrategy pushes out a new architectural design, we automatically upgrade the underlying Amazon Cloud Formation template so that the next time you deploy a new environment, you will get the latest and greatest environment.

Share environments with colleagues

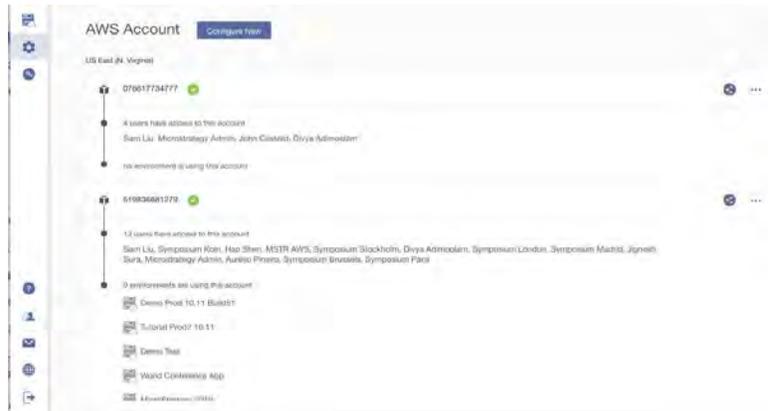
MicroStrategy Cloud Console allows administrators to invite collaborators to their environments, allowing multiple people to manage an environment. Collaborators will have the ability to start, stop, resize, restart, and even schedule tasks. This will allow organizations to oversee environments in case individuals are not available.

The Account Management Page delivers ease to administrators

The Account Management page allows users to configure, manage, and share their AWS accounts from the Cloud Console. This page makes it easy for administrators to track which environments are being deployed into which accounts and monitor user access to AWS accounts.

Within this new management page, an administrator can:

- Configure a new account
- Share an account
- Retract permissions from users and accounts



API-enabled operations are now available for the MicroStrategy Cloud Console

The MicroStrategy Cloud Console API provides unlimited flexibility for organizations to create and deploy customized end-to-end API drive workflows. This empowers developers and administrators to integrate the provisioning console into automated workflows via REST API endpoints, extending the power of the provisioning console to their own custom automation workflows.

Developers can build personalized user interfaces for deploying, managing, and automating their cloud environments. It's also easy to integrate with other automation tools, and the API works with any programming language. With the API you can launch multiple MicroStrategy instances with a single line of code, resize them as needed, and terminate them when they are no longer required.

MicroStrategy on AWS REST APIs

This documents REST APIs for the MicroStrategy Cloud environment. For each endpoint, you need to provide the API key in the header. The value for this request parameter was generated during setup when you clicked Generate API Key.

Environments : Environment APIs		Show/Hide	List Operations	Expand Operations
GET	/environments			Search for environments
POST	/environments			Create an environment
GET	/environments/contacts			Get contact information for environments
POST	/environments/emails/resend			Resend emails to owners of environments
POST	/environments/reboot			Reboot environments
POST	/environments/start			Start environments
POST	/environments/states			Get states for environments
POST	/environments/stop			Stop environments
POST	/environments/terminate			Terminate environments
GET	/environments/{envId}			Get information for an environment
POST	/environments/{envId}/contacts			Update contact information for an environment
POST	/environments/{envId}/expiration			Update expiration date for an environment
GET	/environments/{envId}/instances			Get instances of an environment
GET	/environments/{envId}/instances/states			Get instance states for an environment

Use our friendly landing page to get started in under 30 minutes

Once deployed, MicroStrategy Cloud Console offers a landing page to make it easier for anyone to find the information they are looking for. This new and updated landing page will incorporate improved user experience making it easy to get started with deploying the full MicroStrategy platform in under 30 minutes, start building MicroStrategy applications and share insights in minutes. Administrators can share this page with analysts and developers who can immediately start building dossiers or reports on top of 150+ sources instantly.



Siri Shortcuts are Now Available in iOS for MicroStrategy Badge

Badge can now leverage Siri on iOS 12 or greater for hands-free action to open doors and garages. Set up by swiping left on a digital key and recording a Siri voice command.

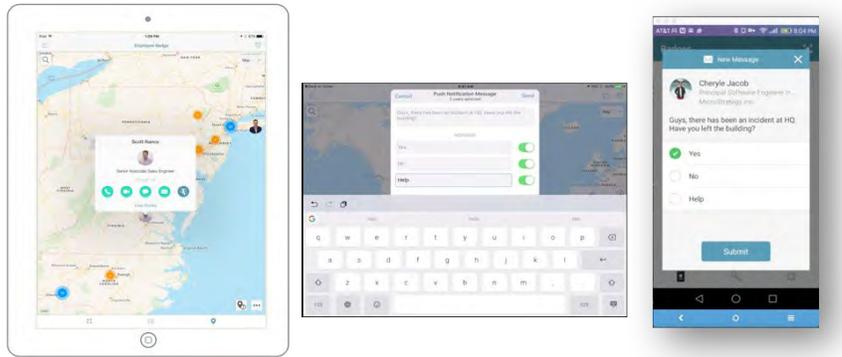
Two-way communication provides users with instant messaging on Badge

MicroStrategy Badge's two-way communication capability enables a MicroStrategy Communicator user to instantly message an individual or group of Badge users. Messages are sent directly to each user's mobile device using a Badge-secured communication channel. Easy-to-use, low friction responses are in the form of configurable single-choice soft buttons (e.g., Yes, No, and Help-In Distress).



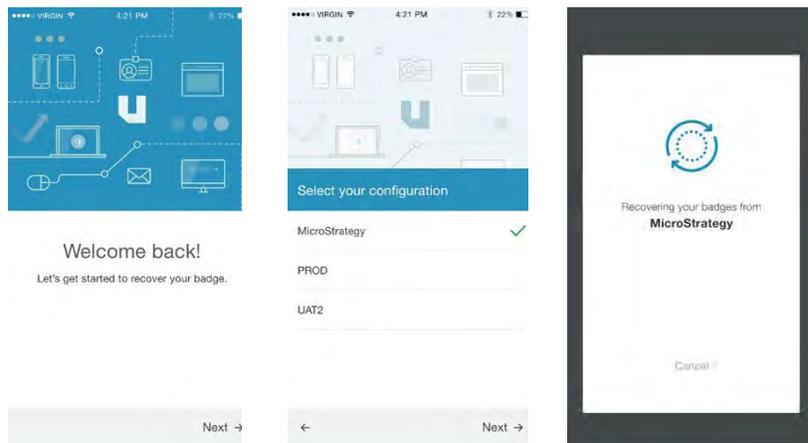
Building on the existing one-way message broadcasting feature, Badge's two-way messaging capability

enables a simple yet effective feedback mechanism. All responses feed into a dashboard in Communicator for tabulating responses and drilling down to individual responses. Badge's two-way messaging capability enables a wide variety of use cases and applications where secure, private communication with an authenticated user is important. Examples include instant communication with geographically distributed workforce, polling of a set of users, and emergency response management, by communicating individual status and to locate users that need help or have not responded.



Recover badges through iCloud and Google Drive

Self-service functions in the Badge app empower users to easily install and recover badges, including when restoring a device, or switching to a new device, resulting in productivity gains and lower helpdesk costs. Badge leverages the iOS Keychain and Android Keystore to make it easier for users to restore badges and security certificates. The Badge app will also automatically back up or restore Identity server configuration data to iCloud (iOS) or Google Drive (Android) so that it never needs to be reentered or reprogrammed. Upon installation or recovery, the Badge app automatically checks for any saved server configurations in the iCloud or Google Drive account of the user and downloads them. By downloading the configuration from iCloud or Google Drive, the entire recovery process can be managed inside the application by the user. This eliminates the need to search for an external configuration source (QR code, email invite, system admin) in order to regain access to their credentials.



Device-based biometrics enhance enterprise security

Badge supports device-based biometrics to enhance enterprise security. On iOS devices, Badge leverages TouchID™ and Face ID. Badge also supports a variety of Android devices with built-in fingerprint scanners. Users of devices running Android 6.0 (Marshmallow) and later can now be enabled or required to use their fingerprint-enabled device to access logical and physical access systems and applications, improving both security and convenience simultaneously. This includes configurable support for multi-factor and 'step-up' authentication for a given transaction. Android devices and devices without a fingerprint sensor can use a configurable PIN / passcode as an alternative.

Enhanced VPN proxy services deliver more versatility

The Virtual Private Networking (VPN) support within the MicroStrategy Identity Server has been completely re-architected to deliver higher performance, more versatility and increased reliability. This VPN Proxy module supports multi-factor authentication, or password replacement, depending on the VPN provider, both server-centric and client-centric VPN providers are supported including Cisco, Fortinet, Juniper Networks, Citrix and PulseSecure. This enhancement will also make it easier to integrate MicroStrategy Identity with more VPN protocols and providers in the future.

Office 365 login is now available on MicroStrategy

The MicroStrategy Identity Server includes an Office 365 SAML gateway integration. Badge users can now authenticate using SAML 2.0 into all Office 365 web applications whether their organization uses "Synchronized Identity" or "Federated Identity" with Office365. Native Office365 applications including Outlook running on Windows 7, 8 and 10 are also supported using Badge for authentication. Badge supports the use of Outlook and native mail apps on Android, iOS and MacOS leveraging either Badge or traditional Office365 username and password so that customers do not need to segregate their Exchange servers off of Office365/Azure, as many organizations have bundled their email services with their Office365 accounts as opposed to isolating mail on-premise.

Integrate AWS with directory services

Thousands of organizations leverage AWS to operate their SaaS or Cloud business. Badge supports native integration with AWS Directory Services. Badge synchronizes to AWS Directory Services as an authoritative source for person-records and attributes, supporting the enforcement of AWS provisioning as an authoritative source for authorization (privileges, entitlements and restrictions). Badge also continues to support other AD/LDAP directories as needed in addition to AWS Directory Services.

Badge now supports watchOS 3

Badge on watchOS 3 includes a Complication option. If the Badge Complication is used in an active watch face, the full Badge WatchKit app will be kept in-memory as a companion and can launch nearly instantly (up to seven times faster than previously). The Badge WatchKit app now makes requests directly from the Apple Watch to the Identity Server instead of going through the Badge app on the paired iPhone, significantly improving performance.

In watchOS 3, the Side button on the watch now navigates to the new Dock and presents your recently opened apps in “cards” similar to how double-tapping on the home button on the iPhone works. This also makes it easier to re-open Badge for users who are regularly accessing Badge resources via their Apple Watch.



Universal Scanner reads non-Badge barcodes

The Badge integrated QR scanner can now read non-Badge barcodes and QR codes (e.g., Aztec Codes). The scanning transaction can be stored in the Identity Server and linked to the user performing the scan, the time of the scan, and the location at which the scan took place (if Location Services are enabled). The barcodes and QR codes supported are those compatible with Apple’s AVFoundation or Google’s ZXing. This non-Badge barcode data can be used in Platform Analytics to parse barcode data, create derived attributes from the parsed barcode data, and link to third-party and legacy-backend logical systems to generate custom reports.

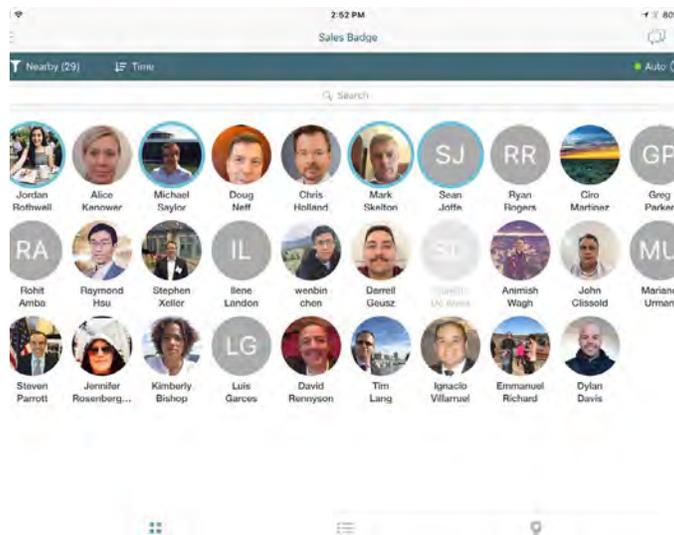


Many organizations utilize various barcodes and QR codes to represent people (such as an employee, contractor, customer, patient, or a party to a transaction) and objects (such as a vehicle, computer, desk, component, package, form, contract, transaction receipt, or other important document). The Badge mobile app now serves as a convenient means of documenting a transaction or linking a Badge user and another person or object at a certain moment in time using an identity-centric and location-aware approach. The information from the scans can help create reports and dashboards that tie these scanning transactions (and data inside the scanned codes) to Badge users, further digitizing an organization’s physical infrastructure and adding insight to its business operations.

Nearby user auto-discovery enables increased control

Communicator users can now control the manner in which lists of nearby Badge users are discovered and/or refreshed. Communicator may be configured to display location-based lists of Badge users that are either dynamic or static.

When configured for dynamic display, Communicator provides a list of Badge users (based on selected filter criteria) and automatically updates this list over time. This mode allows a Communicator user to observe the comings and goings of Badge users based on the location configured. This is especially useful for someone like a security guard who wants to automatically see pictures of people as they approach his or her post. When auto-discovery is turned on (as indicated in the top-right of the image below), the icons of users newly entering the area are highlighted in blue while the icons of users leaving the area are greyed out before disappearing.



When configured for static display, Communicator will behave as it did in previous releases, providing an initial list of Badge users (based on selected filter criteria) that does not change the display over time unless a user performs a refresh gesture by pulling down from the top of the screen. This mode allows a Communicator user to select the appropriate people nearby and engage in an ongoing discussion with those individuals without worrying about people entering or leaving the region and altering the list of users with whom the Communicator user is communicating.

Get seamless login with G Suite (Google Apps) support

Badge leverages a SAML identity provider template to interface with the G Suite (Google Apps) SAML service provider enabling Badge's seamless login functionality to all Google Apps available in the G Suite.

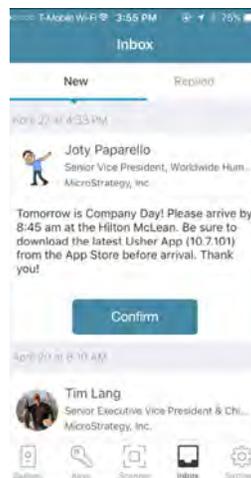
NFC support for iOS devices increases security

Now, both Android and iOS device owners can enjoy the security and convenience of using NFC tags to access resources, which has the advantage of explicitly signaling the user's intent to access the resource due to its very short range.

Badge supports NFC tags on iPhone 7, iPhone 7 Plus, and iPhone 8 devices running iOS 11. Users select the Near Field Communications (NFC) scanner within Badge and hold their device (or watch) near an NFC tag to execute the tag action. Type 1, 2, 3, 4 and 5 NFC tags are supported.

MicroStrategy Inbox now saves messages

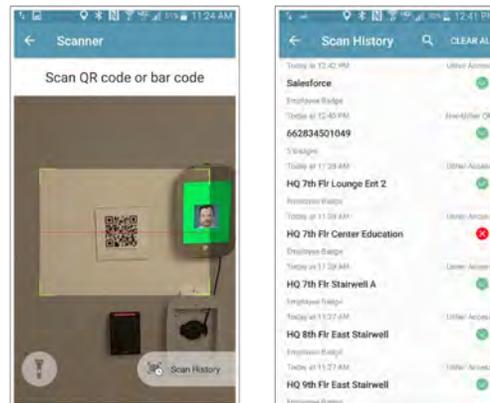
With the debut of the Inbox in the Badge app, communications sent from managers and administrators via Communicator are no longer lost when a push notification is dismissed. Badge users now have the ability to read and respond to queries at their leisure. Users can even review messages that they have already replied to in the past. The Badge Inbox is accessible via a new tab in the Badge app and greatly enhances user convenience and the overall communications usability of Communicator messaging for purposes such as safety and productivity.



In addition, a display indicator on the inbox icon in the Badge app shows the number of unread messages, so users don't have to click into the inbox to check for messages. Once all messages have been read, the indicator is removed.

List of scanned actions is now accessible

Users now have personal real-time analytics showing their own scan history, with the ability to identify the scan date and time, the resource being accessed, and badge used, and the results of the scan. Third-party (non-Badge) codes are also supported for a complete history of scanning activity.



Unlock Mac OS and Windows 10 with Badge for Android

Android users can unlock a Windows 10 computer and MacOS 10.10 or higher computers. Now, both Android and iOS device owners can enjoy the security and convenience of using Badge to log into their computers.

Shared kiosks are now available for multi-user authentication

Enable rapid authentication of multiple users in a shared workstation (terminal) or tablet environment with Badge. Multiple users can be paired with a single browser or Web application for use cases as diverse as reception areas, retail stores, healthcare providers, and utility workers. Getting set up is a snap — users simply scan a QR code to become associated with a kiosk. To authenticate, users just tap their photo on the kiosk screen and approve the Badge push notification on their phone.

Search and filter on directory attribute groups

All directory gateway attributes mapped in Identity Manager are now searchable in Communicator, including directory groups and distribution lists.

More languages are now supported

Badge and Communicator now support all MicroStrategy-supported languages, which include German, French, Spanish (EU), Italian, Portuguese (BR), Dutch, Polish, Swedish, Danish, Korean, Japanese, Simplified Chinese (CN), and Traditional Chinese (TW). This localization includes out-of-the-box Badge labels, but it also supports Administrator-defined custom fields by allowing the Identity Manager Administrator to enter their own translations for custom-defined fields. The language that is displayed in Badge is based on the phone's language setting.

Multi-attribute search enables powerful search capabilities

Communicator now enables users to search on one or more directory attributes simultaneously, making search much more powerful. For example, a user could search for a colleague's last name within a certain division or department.

Attributes in both Active Directory and non-Active Directory Identity Networks are supported.

Log in offline on a desktop via USB cable

Enable frictionless, secure login to the operating system on a user's computer by using a USB cable between their Badge device and their computer. This avoids the need for a Bluetooth or internet connection, ideal for high security environments (e.g., data centers, government, military) and remote environments (e.g., aircraft, vehicles, ships, field locations). Supports MacOS desktops and iOS smart devices.

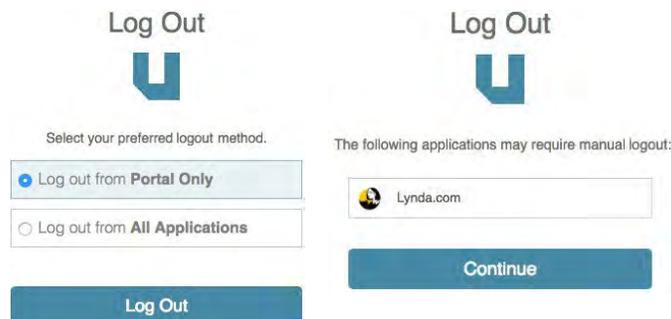
Login carousel is now available

MicroStrategy Identity Server now allows administrators to provide users with a carousel of login methods. Login methods may be set on a per-application basis.



Single sign-off improves security and convenience

Single sign-off improves security and user convenience by prompting users to ensure they are logged off on all applications. Users can choose to log out of everything in a given system or all applications, and they are reminded of applications that may require manual logout.



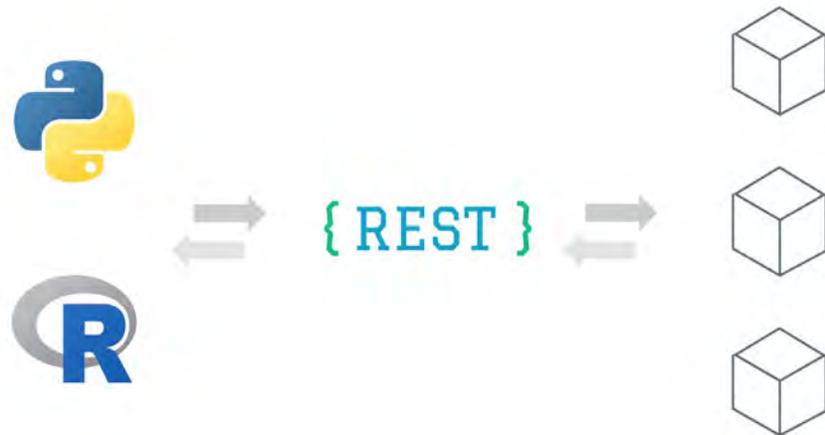
New Features for Data Scientists

The MicroStrategy 2019 platform offers unprecedented ways for data scientists to connect to, model, visualize, and deploy their data. With new R and Python packages, data scientists have the flexibility to code in their language of choice, wherever they choose - all integrated with MicroStrategy. For plug-and-play coding, MicroStrategy offers the R Integration Pack, included out-of-the-box. And best of all, MicroStrategy 2019 offers best in class visualizations, so data scientists can quickly visualize their data and deploy their results to other users. Meet all the data scientists' development needs with MicroStrategy 2019.

Introducing Open-Source R and Python Packages for Data Scientists

With these new open-source packages, data scientists can easily use Python and R to integrate AI-driven solutions making predictions and other insights actionable by the workforce in MicroStrategy dossiers, reports, and custom applications—all in a few lines of code.

The libraries allow users to create and update MicroStrategy in-memory cubes from R and Python data frames, as well as extract data from cubes and reports directly from R and Python. Users can check out MicroStrategy's Community page for **Python & R** for details and demos, and download the packages from **PyPI** and **CRAN**, respectively.



Streamlined Installation of the R Integration Pack Enables Access to Machine Learning, AI, and Predictive Analytics

Hundreds of MicroStrategy customers rely on R to build machine learning algorithms and predictive models. From regression models to market basket analysis, Monte Carlo simulation, and naive Bayes classification, R empowers analysts to apply 100s of different analytical models directly to the data in their MicroStrategy reports and dashboards. With its new seamless setup experience, MicroStrategy 2019 makes it easier than ever before to get started with R, as the R Integration Pack is bundled and installed as part of the main installation, and R is automatically available on the I-Server. Analysts can now check the [R Integration Pack GitHub](#) for more information, as well as off-the-shelf R scripts.



New Features for Developers

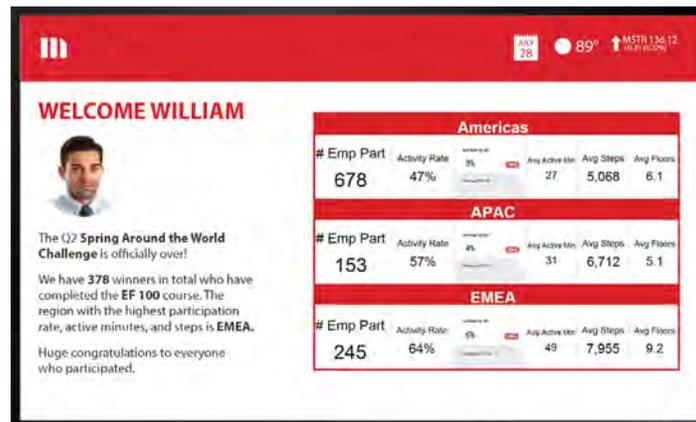
MicroStrategy 2019 offers the most comprehensive API layer for developers to embed intelligence into custom or commercial applications, resulting in the flexibility to leverage today's and tomorrow's tools and information assets. Developers are empowered to use white labeling and single sign-on capabilities to deploy branded web and mobile applications, embed sophisticated analytical functionality in existing applications, build custom connectors, integrate with other technologies and visualizations tools, and more. MicroStrategy 2019 introduces new REST APIs, Embedding API, and various other new capabilities for developers to build data-driven applications with ease.

MicroStrategy HyperIntelligence

MicroStrategy 2019 introduces HyperIntelligence—the most impactful innovation in analytics since mobile. HyperIntelligence delivers zero-click, real-time experiences that inject intelligence into the tools, websites, devices, and screens your users already use. With MicroStrategy 2019, developers can create an entirely new class of Zero-Click Intelligence applications including cards that you can build through MicroStrategy Workstation, as well as augmented reality apps, proximity-based smart screens, and applications that integrate with popular voice-activated assistants and chatbots. These applications provide answers to the questions you didn't know to ask, before you asked them—making every person, application, and device more intelligent.

Proximity-based access is enabled with auto-discovery

Android and iOS users can now take advantage of proximity-based detection using Bluetooth Low Energy (BLE) rather than manually selecting digital keys or scanning QR codes. MicroStrategy Badge users can be discovered automatically by Communicator as well as custom applications built on top of the MicroStrategy Identity SDK, available for iOS and Android.



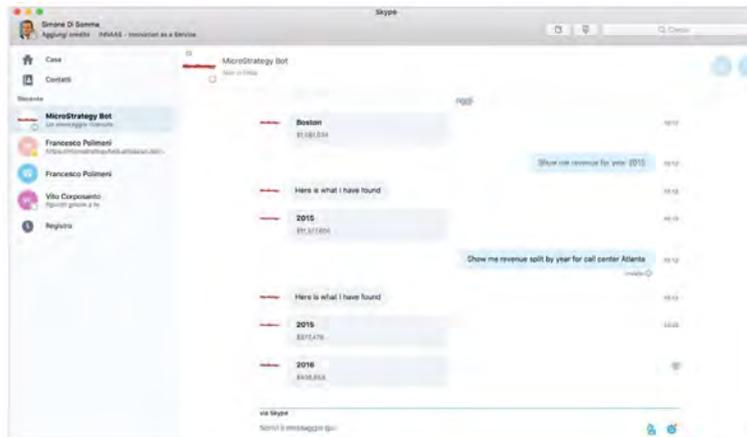
Deploy augmented reality apps

MicroStrategy 2019 enables developers to build augmented reality apps that deliver immersive, interactive intelligence experiences. Using third-party AR Kits, native mobile functionality, telemetry and identity capabilities, and powerful enterprise analytics, you can build smart screens and augmented reality apps that project information about objects, places, and surroundings—bringing answers to life like never before.



Deploy artificial intelligence with chatbots

With MicroStrategy 2019, developers can seamlessly integrate MicroStrategy with Chatbots. Natural language processing and machine learning techniques allow the messenger to understand the context of the question to retrieve the answer and provide relevant responses.



Integrate with voice controlled applications

Developers can leverage MicroStrategy APIs to integrate with Amazon Alexa and other voice-controlled applications. With MicroStrategy-powered NLG and voice recognition mechanisms, it's easy to get answers to the toughest business questions on the way to the next meeting. By integrating with voice technology or chatbots, it's easy to deliver the right data, fast.



Build Custom, Data-Driven Applications with REST APIs

MicroStrategy has invested heavily in making the platform more open to the larger technology ecosystems, that allows easier embedding, integration and extension of the capabilities. In MicroStrategy 2019, developers will get access to MicroStrategy's new REST framework, which allows for a large set of platform capabilities to be exposed via APIs in an easy and intuitive manner to allow developers to quickly customize the product's BI functionality.

The latest release offers new APIs, that allows organizations to build custom workflows for third-party applications.

- Login using all the supported authentication modes. The REST APIs can be used to authenticate users against the Intelligence Server or any third-party server.
- Leverage the MicroStrategy metadata and its associated security.
- Create, update, and delete database connections in the MicroStrategy metadata, which can be used to automate the update of data source credentials.
- Programmatically manage objects in the MicroStrategy metadata, certify or decertify a report or dossier, delete objects, and update object information.
- Execution and exporting of dossiers and documents to a variety of export formats
- Retrieving object definitions, answering prompts, and exporting to multiple file formats
- ...and more.

For detailed documentation on REST APIs, click [here](#).

Extract subsets of data from MicroStrategy with REST APIs

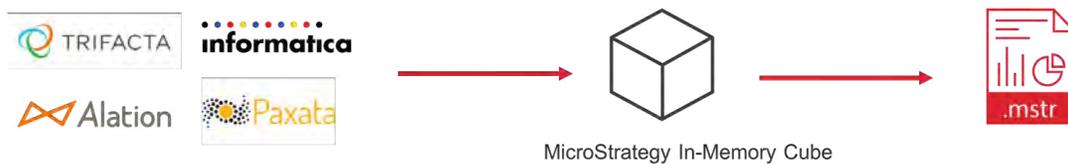
One of the greatest strengths of MicroStrategy is its centralized metadata. This metadata layer supports reports, dossiers, and analytical applications across the entire MicroStrategy environment—helping to ensure a trusted, single version of the truth.

Organizations can use the new MicroStrategy RESTful APIs in order to leverage MicroStrategy as a data source and quickly extract subsets of pre-processed data in JSON format for use in their custom applications. This addresses a primary requirement of large enterprises and OEM partners who need to consume data through MicroStrategy's governed and secured architecture via customized business applications.

Use third-party APIs to upload data and create a new dataset

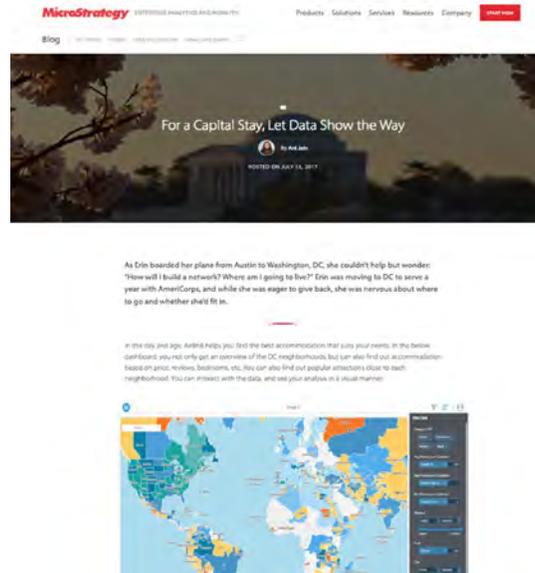
Organizations often invest in tools for data preparation and ETL which contain proprietary data structures. Instead of having an intermediate step of pushing the data into a warehouse, and then transferring it into MicroStrategy, organizations can use REST APIs to seamlessly push their data into in-memory cubes on the MicroStrategy Intelligence Server.

The Push API helps third parties like Alation, Paxata, and Trifacta, integrate with MicroStrategy, making MicroStrategy a more integrated component of the enterprise data ecosystem. This allows organizations to bypass analytical warehouses, put data directly into MicroStrategy, and save on expenses in the process.



JavaScript-Based Embedding API for Dossiers

MicroStrategy 2019 introduces a new API that makes it easy to embed dossiers directly into third-party applications. This new API makes it easy for developers to embed the interactive dossiers in applications such as blogs, articles, portals, and more. With this embedding API, developers can leverage JavaScript to expose MicroStrategy capabilities and allow third-party applications to interact with MicroStrategy content and associated functionalities. Capabilities that can be exposed via the API include: navigation to pages and chapters, apply filters, get filter elements, get a list of chapters, and more. Single Sign-On can also be implemented so that users can seamlessly access the dossier in any third-party application, without getting prompted to log in. In addition, developers can hide or show the toolbar or menu icons on the dossier title bar, including table of contents, filters, collaboration thread, export options, and settings. Users can also lock the filter panel to the left or right within a custom application. This gives users more flexibility and interactivity within the embedded dossier, where they can easily collaborate or export within an external application.



New Data Connector SDK Enables Access to New Data Sources

With MicroStrategy 2019, developers get access to a set of APIs to build almost any data connector, and an extensive SDK to support the Data Connector API. Adding to MicroStrategy's extensive library of native supported drivers, the Data Connector SDK enables MicroStrategy customers and partners to use a proprietary APIs or standard web technologies to access additional and new sources of data. The Data Connector SDK opens a more extensive list of options for both IT and business users, allowing data access to sources including Eloqua, Amazon S3, OneDrive and many more – all on top of secure authentication modes. The SDK includes documentation and instructions to make it easy to build and deploy new connections.

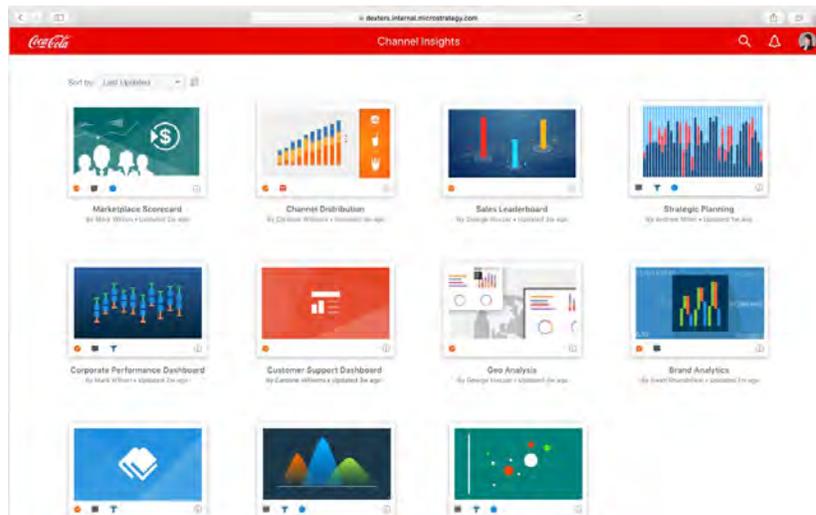
In addition, the MicroStrategy Community serves as a public marketplace for data connectors available for download. The marketplace makes it easy for any customer or partner to leverage unique data sources that are not supported out-of-the-box by MicroStrategy.



Rebrand MicroStrategy Library in Web with Library SDK

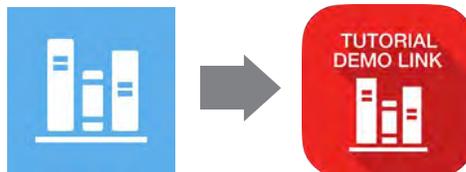
MicroStrategy Library is a personalized portal, in both Web and Mobile, for end users to access all their BI content or dossiers. This central hub lets users quickly locate the content they need by scanning thumbnail tiles or using MicroStrategy's advanced search functionality to locate dossiers or specific visualizations.

Customers looking to brand their web application can now white-label and customize MicroStrategy Library on Web with the Library SDK, with a company's own logos, change the look and feel, use custom fonts for dossiers and documents, change the name of the Library application or URL, change icons, customize authentication options, and more.



Customize and Re-brand the MicroStrategy Library App on Mobile with this New SDK

The new Library SDK enables organizations to create multiple departmental versions of an app. They can customize the app name, app icons, and splash screens. As is the case with MicroStrategy Mobile apps, customized MicroStrategy Library apps can be compiled and distributed via email, internal, or public app stores, or via EMM vendors in the AppConfig Community.

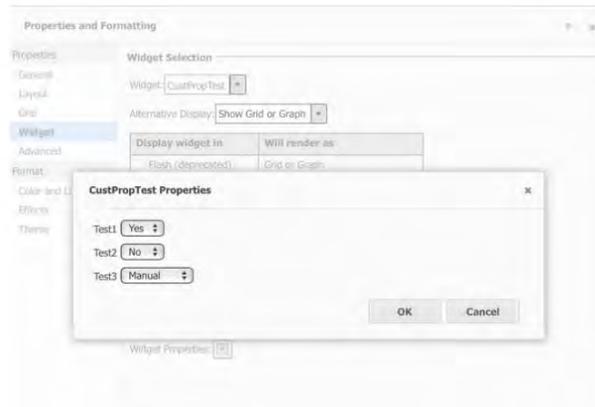


Create Customizations with Swift

Mobile app designers can create customizations using Swift in MicroStrategy Mobile iOS SDK, which provides app designers with a faster, safe and more modern development ecosystem.

Customize D3 Visualizations for Report Services Documents in Android Devices

Custom properties are now supported in D3 visualizations. This feature provides greater parity with iOS and web dashboard functionality. App designers have the flexibility to add different properties to attribute elements and metrics. For example, app designers can use shape or text color to differentiate various components of the visualization.



Custom Fonts Are Now Available in MicroStrategy Mobile Android App

Style dashboards using custom fonts to adhere to corporate style guidelines, display special characters, and much more.

Embed Images in Dashboards

Users can now consume embedded images from a file or local disk on mobile dashboards as previously available in iOS and MicroStrategy Web. The image types supported are png, jpg, jpeg, gif, bmp.

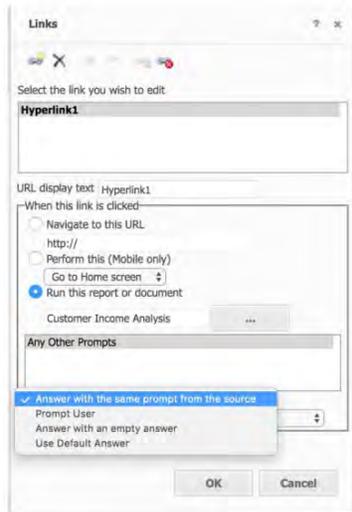
Embed Images During Android App Compilation

The Android framework supports bundling images as part of the app resources to boost performance. Bundling images during app compilation eliminates requests for downloading images that are not expected to change in the short term. This feature accelerates app performance through better image loading. This is especially helpful when users are located in a remote area with weak network conditions.



Pass prompts from source to target document without prompting users

App designers can configure apps to pass prompt answers from source to target documents without forcing users to make a selection. This feature makes it easier for end users to navigate through documents. This also brings greater parity between iOS and Android



Pass dashboard parameters via URL API

Users can now programmatically set the value of a selector via a URL API event. This feature—great for collaboration—allows a user to share a dashboard with filters already set to a desired view.

Try it today

MicroStrategy 2019 is available to download from software.microstrategy.com.

Customers can also provision MicroStrategy 2019 on the cloud with the MicroStrategy for AWS and MicroStrategy for Azure provisioning console. For mobile, the latest release is also available on respective app stores for iOS and Android, and MicroStrategy Desktop for Windows PC and Mac is available on microstrategy.com.