MicroStrategy

Analytics and Mobility

Mobile Analysis Guide

MicroStrategy ONE

MicroStrategy ONE

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Using MicroStrategy Mobile

Use MicroStrategy Mobile to distribute the power of analytics within your enterprise. You can create a powerful custom mobile app that allows users to view, analyze, and write-back information to your database or you can use MicroStrategy Mobile simply as an extension of your MicroStrategy project to view project documents, dashboards, and reports on mobile devices.

For an overview of what you can create with Mobile and how, see the following:

- *Common business scenarios for MicroStrategy Mobile, page 5*: This section provides examples of the kinds of documents and apps you can create.

- *Overview: Creating documents for mobile, page 7*: This section provides a workflow for creating documents for mobile devices and outlines the considerations to take into account while creating documents for mobile devices.

- *Overview: Creating apps with MicroStrategy Mobile, page 12*: This section provides a workflow for creating mobile apps and outlines the considerations to take into account while designing apps for mobile devices.

- *Viewing demo apps and dashboards: Restoring default settings, page 15*: This section provides steps to restore your app to MicroStrategy's default settings.

Common business scenarios for MicroStrategy Mobile

MicroStrategy Mobile can be used to support business activities, including the following examples:

- Instantly view data from any existing report or document to answer your questions. If you are in a business meeting, Mobile ensures that the data is up-to-date. Examples of documents and dashboards you can create with Mobile are:

- A dashboard used to explore data in a strategic business meeting. Dashboards allow users to change the graph used to display data and create their own filters, thresholds, and metrics.

- A dashboard-style document that displays data on a business' bestselling products and stores. Users can view inventory on bestselling products as well as data on other products that are similar. The information in the document is updated weekly.

- Instantly write information to your database. Transaction Services allow you to create forms that automatically send information to your database. Examples of how you can use Transaction Services are:

- A Corporate Request Center (CRC) app with selectors that allow users to approve or deny time off, expenses, and purchase order requests. The approvals and denials are automatically written to the database after processing.

- A customer satisfaction survey document that asks customers to rate your business on a scale and leave comments. You can ask customers to complete the survey after a transaction.

- Distribute mobile apps within your organization, or in the Apple App Store or Google Play. Mobile apps can support any recurring business needs you have. Examples of apps you can create are:

- An app for your CFO with a high-level overview of your company's performance that refreshes with up-to-date information biweekly.

- An app that displays product, sales, and inventory information for your business and maps all items to store locations. Users can drill down into graphs and widgets for deeper analysis and also scan product barcodes to

view item information. The data in the app is automatically refreshed on a weekly schedule.

- Link together multiple mobile devices with MicroStrategy Mobile installed on them to create a Command Center. You can use any of the linked devices to control the data that displays on all other linked devices. Changes made on one device, such as filtering or drilling, update the display of the other linked devices. For steps, see the *MicroStrategy Developer Library*.

- If you have Apple TV, you can display the output of each device on an HDTV.

Overview: Creating documents for mobile

Dashboard-style documents form the basis of the apps and dashboards you can create with MicroStrategy Mobile.
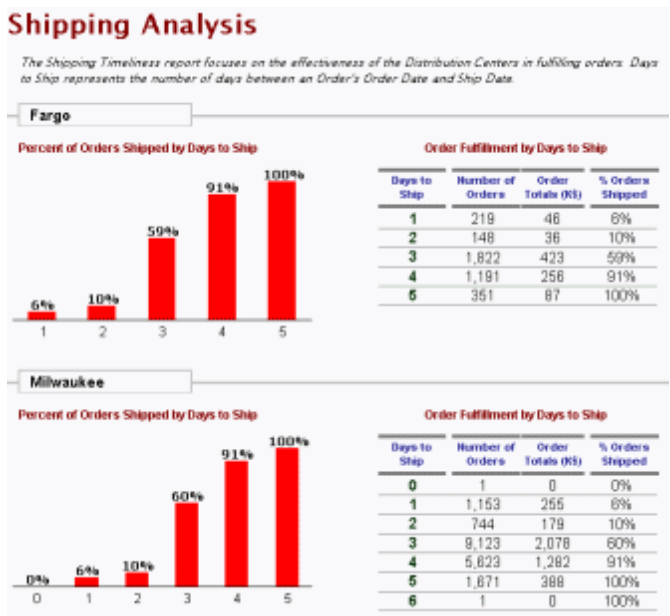
The following workflow describes the process of creating a document for viewing on a mobile device. It assumes that you are familiar with designing MicroStrategy reports and documents and have the necessary privileges to do so.

> If users want to be able to create their own filters, thresholds, or change the graph style used to display data, consider creating a dashboard instead of a document.

To view sample RS documents created for each mobile device, in the MicroStrategy Tutorial project, navigate to the **Shared Reports** folder. Click **MicroStrategy Platform Capabilities**, then click **MicroStrategy Mobile**. Select the folder to open based on the device you are using. The folder displays with a list of reports and documents designed for that device.

To create a document for a mobile device

1. Based on how users will interact with the document, decide what objects to add to the document.

   - If users want to be able to see different subsets of data depending on the situation, consider using a prompt or including a table of selectors. Examples of how prompts and selectors can be used are:

   - Viewing data on a specific product. Create a prompt that asks the user to type or scan the product's barcode. The data in the document is filtered based on the product scanned.

   - Searching for hospitals within a certain distance from the user. Create a prompt that asks for permission to obtain the user's location from their mobile device and a selector the user can use to define the maximum distance of a hospital. The data in the document is filtered to display only the hospitals that are within the distance defined by the selector to the user.

     For guidelines on creating prompts for mobile devices, see *Allowing users to filter data: prompts, page 173*.

2. If users want to be able to edit, add, or delete data from your database with a mobile device, create documents that use Transaction Services.

   ▫ If you are designing for iPhones or iPads, consider using a Transactions table to organize the Transactions data. For example, you are creating a calendar of events and want users to be able to add or edit events on the calendar. You can use a Transactions table to easily create a form that asks the user for event details and saves them to the database. For steps, see *Organizing transactions with tables on iOS devices, page 191*.

3. If you want to create a survey, where users are presented with a set of questions they answer by selecting options from a list or by typing in their answers, consider using a Survey widget. For steps, see *Gathering data from users: Survey widget, page 267*.

4. To create a document that runs other applications on the mobile device to perform a specific task, such as opening your mail app to send an email, accesses specific features within MicroStrategy Mobile, such as repeating a prompt on a document, or opens other documents or reports, add a link. For more information on what you can do with links and steps to create them, see *Linking to reports and documents from a mobile document*.

5. To include videos and images in a document, use the Video Player and Image Viewer widgets. For steps, see *Downloading and playing videos: Video Player widget, page 280* and *Displaying images: Image Viewer widget, page 219*.

6. Based on the information users want to access and how they want to use that data, decide how you will display data in your document.

   • You can display important information in a docked header or footer. Docked headers and footers are always visible at the top

and bottom, respectively, of the screen as the user scrolls up or down in the document. For steps, see *Allowing users easy access to document content: docked headers and footers, page 164*.

- You can inform users of important information, such as new content or updates, by displaying and update a badge displayed next to the MicroStrategy Mobile application icon on a user's iPhone or iPad. For steps, see *Notifying users: Displaying a badge next to the MicroStrategy Mobile application icon, page 167*.

- You can create a simple graph to display your data. Many graph types are available, such as overlapping bar graphs and pie graphs.

  For interactive graphs, such as a data cloud, graph matrix, or map, consider using a widget. For a description of each widget you can use and steps to create them, see *Adding widgets and visualizations to documents for mobile devices, page 206*.

7. Design your document based on how you want the user to interact with your document and the mobile device they are using. For best results, follow the guidelines listed in *Best practices while planning reports and documents, page 121*.

   For iPads and Android tablets, it is recommended that the document be the same size as the screen of the device. If you cannot fit all the objects you need in one document, consider splitting the document into multiple documents and linking them together, or use one of the following techniques:

   - Group small sets of related data together into panel stacks. For information on creating panel stacks for mobile devices, see *Allowing users to access information easily: mobile-friendly panel stacks, page*

146.

- Place detailed data in an Information Window that displays when the user taps on another object. For example, you are creating a document with a scatter graph. You can create an Information Window that displays when the user taps on a bubble in the scatter graph, with detailed information on the bubble. For steps, see *Providing additional information to users: Information Windows, page 149*.

8. Create the datasets that support your document. You can import data from your database or use an already existing report or Intelligent Cube.

9. Create the document based on your design. For best results, follow the guidelines listed in *Best practices while creating reports and documents, page 125*. For device-specific guidelines, see *Creating documents for mobile devices, page 127*.

10. If the document is going to be viewed on devices with different screen sizes, format the document so it displays properly on all devices. For steps, see *Formatting documents for mobile devices, page 130*.

11. Distribute the document. If the document is part of an app, deploy the app within your organization or on the App Store. For steps, see *Deploying and configuring the MicroStrategy Mobile application*. Otherwise, place the document in the Shared Reports folder of your MicroStrategy project. All users with permission to view the folder are able to view the document from their mobile device.

12. If you have MicroStrategy Enterprise Manager, you can fine-tune the design of your app based on user statistics. Enterprise Manager is a set of pre-built documents that display data on how people are using your app, such as what device they're using, which documents they view the most, and app performance. You can also create your own documents with the statistics that Enterprise Manager collects.

Overview: Creating apps with MicroStrategy Mobile

You can use MicroStrategy Mobile as a platform to create mobile business intelligence (BI) apps for your organization. By linking dashboard-style documents and dashboards together, you create the experience of a mobile app. Using visualizations and widgets, users can analyze data and make decisions based off that data as they receive it.

The app you create uses a dashborard-style document that serves as a home screen and links to other documents of interest. The home screen displays when users open your Mobile application instead of MicroStrategy's default interface. For example, the CFO Dashboard demo app has a home screen that links to documents for financial performance, what-if analysis, and so on, as shown in the following figure:

To create a mobile app

1. Evaluate what the users need and the workflow that they require. It is useful to know the following:

   • The users' current problems, their goals, and their expectations

   • The mobile device(s) the users are using for the app.

2. Define the purpose of the app and the key issues the app solves. Based on this, determine the data required for the app and whether your database contains that data.

3. Create a diagram of the documents you are designing and how users will navigate between them. Design the documents to accomplish your users' tasks and the navigation system to support your users' workflow. Best practices while designing documents are described in *Best practices while planning reports and documents, page 121*.

   You can have users navigate the app with:

   • A menu bar with buttons that link to the main documents in your app. The menu bar displays at the bottom of all documents that it is linked to.

   • Swiping left or right to view each new screen. This is useful for apps that have a linear workflow or for apps whose main purpose is to showcase information. Do this by creating a panel stack that fills the screen of the device and adding a docked panel selector to the stack. Each panel in the stack is a separate screen.

   • A link embedded in a document. You can create links to documents from a text field, image, button, or attribute element. Depending on the device you are designing for, you can create links that filter the data of the document they link to based on the object the user selects.

4. Create the documents that make up your app and link them together based on your diagram.

   To create the feel of a standalone app, designate one of the documents you create as the home screen for your app, which you configure to display when the application opens. Consider adding a button to your home screen with a link to MicroStrategy's device-specific help, which provides instructions for your users on how to interact with widgets and reports, and so on. To create a link to the help, see *Using links to access features within the MicroStrategy Mobile application, page 312*.

   For high-level steps to create a document, see *Overview: Creating documents for mobile, page 7*.

5. If you are creating a custom home screen for the app, create a mobile configuration that configures users' devices to load the custom home screen when the application loads. For steps to create a mobile configuration, including steps to define a custom home screen, see *Administering MicroStrategy Mobile*.

6. By default, users log in to your mobile app using their MicroStrategy user name and password. You can customize the way users log in to your app, by requiring a custom token when they log in or allowing them to use their Facebook credentials to log in. You can also have users log in separately for each project they want to access, or re-direct users to a different page when they cannot log in. For detailed information on how you can customize the way users log in to Mobile, see the *MicroStrategy Developer Library*.

7. Distribute your app to a preliminary set of users to gather feedback on whether your app addresses your users' needs. You can also test how easily users navigate and use your app. Redesign components of your app as necessary based on user feedback.

8. Distribute the app to users within your organization, on Google Play, or on the Apple App Store. For steps to deploy and configure your app for all mobile devices, see *Administering MicroStrategy Mobile*.

You can create customized versions of the MicroStrategy applications that use your organization's branding. For the requirements and steps to build customized applications, see the SDK page of MicroStrategy Community.

> To access the MSDZ, you must create an account in the MicroStrategy Knowledge base, at the following URL:
> *https://resource.microstrategy.com*.

9. Update and maintain the app as necessary. Most apps require periodic refreshing so the data they contain is relevant and up-to-date. To automatically refresh the data, you can create subscriptions for users to send them updated data on a schedule.

Viewing demo apps and dashboards: Restoring default settings

On the iPhone or iPad, you can restore your custom Mobile app to the MicroStrategy default project settings to view the latest demo apps that MicroStrategy provides and see examples of the latest features.

To restore your Mobile app to the MicroStrategy default app settings

1. From the iPhone or iPad home screen, tap **Settings**.

2. From the list of apps on the left, tap one of the following:**MicroStrategy**

   - If you want to reset the Mobile app, tap .

   - If you want to reset the Good Dynamics app, tap **MicroStrategyGD**.

3. Tap **Reset Application**.

You can return to your custom Mobile app by re-installing it, either by downloading it from your company's internal website or clicking a configuration URL in an email from your administrator.

Getting Started with MicroStrategy Mobile for iPhone

Introduction

This section provides an overview of basic tasks that analysts can perform with MicroStrategy Mobile for iPhone.

The steps and images in this section are based on the default settings of the application. Your interaction with the application depends on the configurations made by your administrator. For information on customizing MicroStrategy Mobile, see the MicroStrategy Mobile Administration Help.

If you are designing reports and documents for the iPhone, see the MicroStrategy Mobile Administration Help.

For information on installing and configuring MicroStrategy Mobile for iPhone, see the MicroStrategy Mobile Administration Help.

Prerequisites

- You must have the following privileges:

- Use MicroStrategy Mobile for all projects containing reports or documents that you want to view.

- Mobile View Document

For information on privileges, contact your administrator.

Getting started with MicroStrategy Mobile for iPhone

It is recommended that you install the MicroStrategy Mobile application sent to you by your administrator.

To run the MicroStrategy application on your iPhone, tap the MicroStrategy Mobile icon. You may be prompted for your MicroStrategy user name and password.

When the application opens, the MicroStrategy Home screen is displayed, as shown below.

☰ Home - MicroStrategy Tutorial		
🔍 Search this folder		↓≡
FOLDERS		
🗀 Business Roles		ⓘ
🗀 Dashboards and Scorecards		ⓘ
🗀 Enterprise Reporting Documents		ⓘ
🗀 MicroStrategy Platform Capabilities		ⓘ
🗀 Subject Areas		ⓘ
📊 heat map ↻ Jul 28, 2014, 9:00:46 AM		ⓘ
📊 iPhone DOC ↻ Jul 22, 2014, 10:14:05 AM		ⓘ
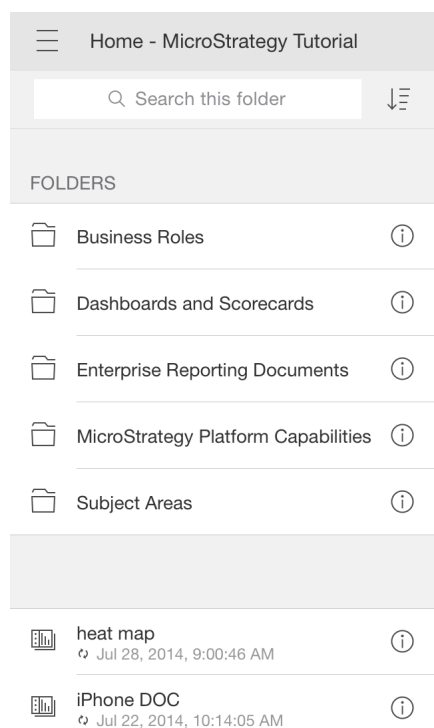
The Home screen lists the projects your device is connected to. You can use the Home screen to browse these projects and run reports and documents.

The format of the Home screen may vary according to how your administrator has configured it. Buttons may open a report, launch a micro application, open a folder for browsing, and so on. For information on customizing the Home screen, see the MicroStrategy Mobile Administration Help.

To access different areas of your application, swipe to the right to display the navigation menu. You can access the navigation menu from any screen outside the reports and documents in your app. The options in the navigation menu are described below:

- **Home**: Displays the list of projects your device is connected to.

- **Recently viewed**: Displays reports and documents that you have recently accessed.

- **Subscriptions**: Displays reports and documents that you are subscribed to.

- **Offline Transactions**: Some documents may include forms that you can fill out and send back to your company's database. The Offline Transactions screen displays a list of documents that will send information to your company's database once you are connected to the Internet.

- **Report Queue**: While a report or document is opening, you can tap **View Later** to download the report or document in the background and continue using your app. The Report Queue displays the reports and documents that were downloaded.

- **Settings**: Allows you to configure the MicroStrategy Mobile servers and projects that you are connected to, and general administrative and display options.

  It is recommended that you configure the application using the configuration URL that you receive from your administrator.

- **Learn more**: Displays MicroStrategy's Mobile website.

- **Help**: Displays the Help for the application.

To close the navigation menu, tap the navigation menu icon ☰ .

Receiving alerts when data meets certain conditions: Push notifications

You can configure MicroStrategy to send an alert to your iPhone when a metric on a report meets a specific condition. For example, you can choose to receive an alert if the Profit data in a report drops below $50,000. These alerts are called push notifications, and can be received even if the

MicroStrategy iPhone application is not running. For information on setting up push notifications, see the MicroStrategy Mobile Administration Help.

Enabling and disabling alerts

You enable or disable alerts using your iPhone's Settings screen.

⚠️ The procedure below refers to software produced by third-party vendors and thus is subject to change. MicroStrategy makes no guarantee on the availability or accuracy of third-party documentation.

To enable or disable push notifications

1. On your iPhone's Home screen, tap **Settings**.

2. Tap **Notification Center**. The Notification Center page opens, with a list of applications that can send you alerts (push notifications).

3. Tap **MicroStrategy**.

4. Turn the **Show in Notification Center** switch on or off.

5. If you have enabled notifications, configure the push notifications, as described in the following steps:

   a. Choose an **Alert Style** from the list:

      • **None**: No alerts are displayed for push notifications.

      • **Banners**: Display at the top of the iPhone screen. Tap a banner to open MicroStrategy Mobile. If you ignore the banner, it will close automatically.

      • **Alerts**: Display as a pop-up window on the iPhone. Tap a button to open MicroStrategy Mobile or close the alert.

   a. Turn the **Sounds** switch on or off.

b. Turn the **View in Lock Screen** switch on or off.

6. Push the Home button to return to the iPhone's Home screen.

Sorting the list of reports, documents, and folders

Some screens, such as the Home screen and the Subscriptions screen, contain a list of files, such as reports, documents, and folders, that you can sort. Sorting can make it easier to find the report or document you want or identify which files were updated so you can see new data. By default, files are sorted by name.

To sort by the name of the file, the date the file was last modified, or the type of file, tap the **Sort** icon ⬇☰ at the top. Select **Name**, **Last Modified**, or **Type**, depending on how you want to sort the folder.

You can also sort by the date the files were last downloaded to your iPhone. From the navigation menu, select **Settings**. Turn on **Show Timestamp Options**. Return to the screen with the files you want to sort, tap the **Sort** icon ⬇☰, and select **Last Updated**.

Running and viewing reports and documents

Once you have started MicroStrategy Mobile, you can view reports and documents on your device.

Some reports and documents may prompt you with questions when the report or document is run. The answer you provide to a prompt determines the data that is displayed on a report or document. For steps to answer prompts, see *Answering prompts in MicroStrategy Mobile for iPhone, page 16*.

This section contains information about the following:

Running reports and documents

You can locate and run reports and documents in the following ways:

- Running them from a list of subscribed-to reports and documents. For steps, see *Running subscribed-to reports and documents, page 6*.

- Browsing to their location within a project. For steps, see *Locating and running reports and documents, page 7*.

- To update the list of reports and documents, drag the screen down.

Running subscribed-to reports and documents

You can quickly access reports and documents that you have subscribed to using the Subscriptions button in the navigation menu on the left.

Subscribing to a report or document causes your iPhone to automatically download the report or document on a defined schedule, which allows you to open the report or document quickly and access it at any time. For steps to subscribe to a report or document, see the *MicroStrategy Web Help*.

To run subscribed-to reports and documents

1. Within MicroStrategy Mobile, swipe to the right to display the navigation toolbar.

2. Tap **Subscriptions**. A list of subscribed-to reports and documents is displayed.

3. Tap a report or document on the list to run it. The report or document is displayed.

   For information on viewing and navigating reports, see *Viewing and navigating data in a grid or graph report, page 8*.

   For information about viewing and navigating documents, see *Viewing and navigating data in a document, page 12*.

Locating and running reports and documents

You can run reports and documents by navigating to where they are located within a project that your iPhone is connected to.

To locate a report or document, you must have the proper permissions in MicroStrategy to access the folders containing the report or document. For information about the permissions that are assigned to you, contact your administrator.

To run reports and documents from a folder within a project

1. From the default Home screen, tap the name of the project you want to browse. The folders within the selected project are displayed.

2. Browse to the folder that contains the report or document that you want to run. A list of reports and documents is displayed.

3. The icon next to the report or document name indicates whether it is a grid report, graph report, document, or dashboard.

   - Grid reports: ⊞

   - Graph reports: ılıl

   - Documents: 🕮

   - Dashboards: 🔲

4. To make it easier to find the report or document you want, you can sort the contents of the folder by name, the date the file was last modified, or the type of file. Tap the **Sort** icon ⬇ at the top. Select **Name**, **Last Modified**, or **Type**, depending on how you want to sort the folder.

   You can also sort by the date the files were last downloaded to your iPhone. From the navigation menu, select **Settings**. Turn on **Show**

Timestamp Options. Return to the screen with the files you want to sort, tap the **Sort** icon ⬇︎☰, then select **Last Updated**.

5. To view the report or document details, tap the **i** info button ⓘ next to the report or document's name. A description of the report or document displays, along with the dates it was last modified and refreshed.

   To return to the list of reports and documents, tap the back arrow icon at the top of the screen.

6. Tap a report or document on the list to run it. The report or document is displayed.

   For information about viewing and navigating reports, see *Viewing and navigating data in a grid or graph report, page 8*.

   For information about viewing and navigating documents, see *Viewing and navigating data in a document, page 12*.

As you navigate the projects you are connected to, the name of the folder you are currently in displays at the top of the screen. To return to a folder you were in before, swipe the current folder's name to the right, then tap the name of the folder you want to return to.

Viewing and navigating data in a grid or graph report

There are two types of MicroStrategy reports: grid reports and graph reports.

• Grid reports display business data organized in rows and columns.

• Graph reports present data visually in styles such as a bar, line, or pie graph.

The following actions can be applied to most grid and graph reports after they have been displayed:

- To switch between full screen mode and non-full screen mode, tap the report.

  Full screen mode displays as much data on the screen as possible.

  Non-full screen mode displays a navigation bar at the top of the grid. The navigation bar shows the back button and the report name.

- If the report is in full screen mode, you can display the report's title, switch the page-by group, or exit the report by tapping the action button ⬇ .

- To change the orientation between portrait and landscape, rotate the device.

- To scroll across a report, swipe the screen horizontally. To scroll up and down a report, swipe the middle of the screen vertically.

- To change the group of data that is displayed, tap the currently displayed group of data at the top of the report and choose another group. You can also perform a horizontal swipe at the edge of the screen to move between groups of data.

  The currently displayed group of data appears in the page-by bar at the top of the report.

The following sections show examples of grid and graph reports displayed on an iPhone:

- For examples of grid reports on an iPhone, see *Viewing and navigating data in grid reports, page 9*.

- For examples of graph reports on an iPhone, see *Viewing graph reports, page 10*.

Viewing and navigating data in grid reports

Grid reports are the most commonly used type of report. A grid report organizes business data into rows and columns. The image below shows a grid report displayed on an iPhone.

Some reports are designed to have data automatically appear with special formatting depending upon certain conditions (such as sales over $1 million, or inventory below 50). This is called conditional formatting.

The data that meets the condition is considered to be data that has passed the threshold of the condition; once data passes the threshold, the formatting is applied. Thresholds are cells of data that are formatted differently from the rest of the data on a report.

In the example report above, the report uses thresholds in the Cost column.

Viewing graph reports

Graph reports present data visually in a style such as a bar, line, or pie graph. The images below provide examples of graph reports displayed in MicroStrategy Mobile for the iPhone.
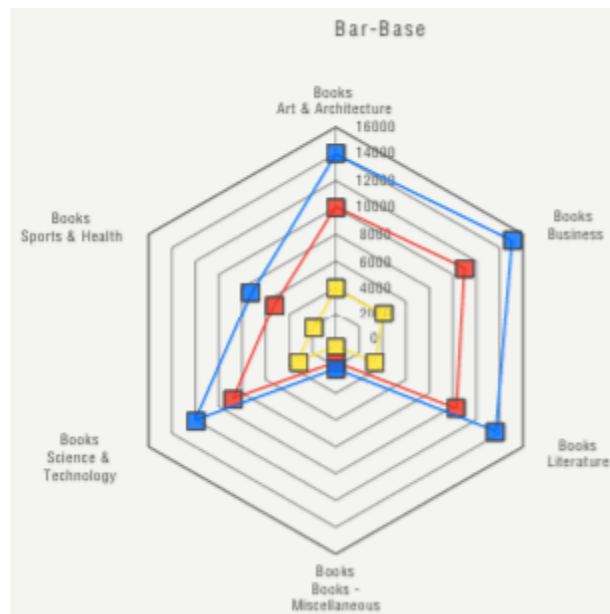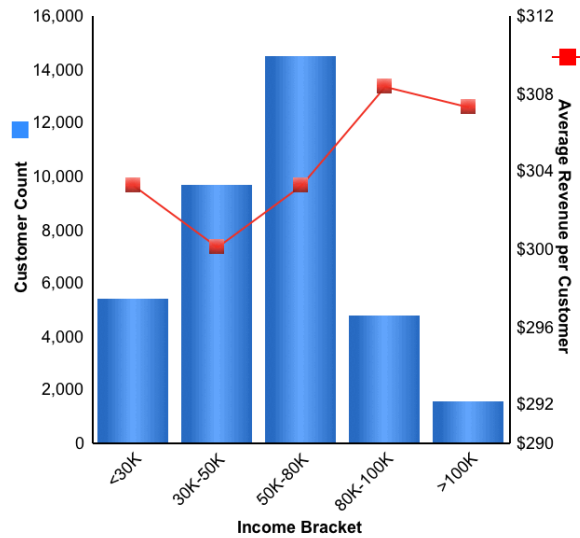
- To view tooltips to explain parts of a graph, such as a single bar in a bar graph, tap and hold on the screen.

- To zoom, perform a pinch on the center of the screen or double-tap the center of the screen to switch between a zoomed-in view and a zoomed-out view.

Viewing and navigating data in a document

Documents are used to present data from multiple reports in a presentation-quality format. They can contain a variety of graphics and text, depending upon their design.

The following actions can be used to view and navigate data in a document. Some of these actions may be disabled by the designer. For more information about designing documents for use on the iPhone, see the MicroStrategy Mobile Administration Help.

• Switch between portrait and landscape orientations by rotating the device.

• Zoom in or out on a document by performing a pinch on the center of the screen or double-tapping the center of the screen.

The following example shows a basic document displayed on an iPhone.

Switching between panels in a document: panel stacks

A document may contain panels that you can switch between, similar to slides in a slideshow.

You may be able to switch between panels by tapping a button or link, or by swiping left or right.

Some panels contain a gray bar at the bottom with a row of circles, as shown below. Each circle represents a panel and the currently displayed panel is marked with a dark circle.

To switch between panels, swipe left or right.

Viewing and navigating tabs in a document

A document may contain multiple tabs across the bottom of the document, called layouts. To view a layout, tap the tab with the layout's name.

Each layout functions as a separate document and can have its own grouping of data, formatting, and so on. The following examples show two different layouts from the same document.

The following examples show two different layouts from the same multi-layout document.

Sharing reports and documents via email

You can share a screenshot of a MicroStrategy report or document with your contacts using email. Your recipients do not need to have MicroStrategy installed to view the screenshot. The steps to share a screenshot are as follows.

Prerequisites

*   You must have configured an email account on your iPhone.

To share reports via email

1. In MicroStrategy Mobile, open a report or document that you want to share with your contacts.

2. In the top-right corner, tap the **Menu** button . The context menu opens.

3. Tap the **Email** icon . A new email message is composed, with a screenshot of the report attached.

4. Type the email addresses of your contacts in the **To** and **Cc/Bcc** fields, as applicable.

5. Once you have composed the email, tap **Send**. The email is sent.

Printing reports and documents

If you have an AirPrint-capable printer available on your network, you can print a copy of your report or document, as described in the steps below. For a complete list of printers that support AirPrint, as well as information about configuring an AirPrint printer, see your Apple documentation.

Prerequisite

*   You must have an AirPrint supported printer on your network to be able to print from your iPhone.

To print reports and documents

1. In MicroStrategy Mobile, open a report or document that you want to print.

2. In the top-right corner, tap the **Menu** button .

3. Tap the **Print** icon . The Printer Options dialog box opens.

4. To choose a printer, tap **Printer**. A list of available printers is displayed.

5. Tap the name of the printer you want to print from. The printer is selected, and you are returned to the Printer Options dialog box.

6. To change the number of copies to print, use the plus **+** and minus **-** buttons.

7. If your printer supports double-sided printing, turn the **Double-sided** switch on.

8. When you are satisfied with the settings, tap **Print**.

Answering prompts in MicroStrategy Mobile for iPhone

Some reports and documents may ask you to choose what data is displayed by asking you questions, called prompts. Prompts allow you to display only the data that you want to view.

The following table lists the types of prompt you may have to answer and steps to answer them.

Type of Prompt	Answering the prompt
Calendar	To select a date, tap it. To select a range of dates, tap and hold the start date, and drag until the end date.
Date/time wheel	Scroll through the columns to select a date and time.
Text prompt	Tap inside the text box to begin typing an answer.
Numerical	Drag the slider to choose a value.

Type of Prompt	Answering the prompt
slider	
Numeric stepper	Tap the plus or minus button to select a value.
Numeric wheel	Scroll to the value you want to use.
On/Off switch	Slide the switch to turn it on or off.
Location	Tap the ⊙ button to use your current location. ℹ️ You are prompted for permission to use your location.
Barcode	Use your device's camera to scan a barcode or QR code. To manually enter a barcode, tap the keypad button ⊞ and enter the number that corresponds with the barcode.
Selections from a list	For a list of possible selections, tap the name of the list. Tap an item in the list to select it. The item you select is displayed in the report or document. If an arrow icon displays next to an item, then the item itself may contain one or more lists. Tap the arrow icon to display the lists, then tap the lists to view the items you can select from the list. To change the list so that the items you select are excluded from the report or document, tap **in list** next to the list's name. To de-select an item, tap the item again. To de-select all items in a list, tap the **X** next to the list's name.

Using the Prompts screen

The Prompts screen displays the prompts associated with a report or document and your response to them. The Prompts screen displays if one or more of the following conditions are met:

- The report or document contains at least one prompt

- You have not opened this report or document before

- You have not saved your previous answers to the prompts in this report or document

- An answer you provided does not meet the prompt's requirements

The Prompts screen displays each prompt's name, description, and the answers you have provided. Tap the name of a prompt to answer it.

If the answer you have provided does not meet the prompt's requirements, the requirements are displayed in red text.

To change your prompt answers before running the report, tap the name of the prompt that you want to revise.

When the prompt's answer requirements are met, tap **Apply** to run the report. If you want to change your prompt answers after you run the report, tap the Menu button ▪▪▪▪, then tap the Prompts icon to display and edit your prompt answers.

Achieving the best response from MicroStrategy Mobile

The speed at which your list of reports is retrieved and reports are refreshed in MicroStrategy Mobile depends on several factors:

- Your mobile service provider.

- The time at which you are accessing the reports and documents.

The speed at which a report or document opens in MicroStrategy Mobile depends on several factors:

- The amount of usable memory on the mobile device.

- The processor speed of the mobile device.

- The version of the mobile device.

- The size and contents of the reports and documents.

    For best practices to create reports and documents for use with MicroStrategy Mobile, see the MicroStrategy Mobile Administration Help.

Consider creating subscriptions to your most commonly used reports and documents. This will give you access to them in the Reports folder on your Home screen, and will pre-load their contents on your device so that they will open more quickly. For steps to subscribe to a report or document, see the *MicroStrategy Web Help*.

Analyzing Reports and Documents on an iPhone

Introduction

This chapter describes some of the tasks that an analyst can perform to analyze data in a MicroStrategy report or document using MicroStrategy Mobile on an iPhone. The following topics are covered:

- *Analyzing reports and documents on an iPhone, page 20*

- *Interacting with data, page 27*

After you run a report or document in MicroStrategy Mobile, you can view data at different levels, view a subset of data, and analyze data using interactive graphs. You can also follow links to display different reports or documents, or to access iPhone functionality such as sending email or placing phone calls.

Prerequisite

This chapter assumes you are familiar with the information provided in *Chapter , Getting Started with MicroStrategy Mobile for iPhone*.

Analyzing reports and documents on an iPhone

You can interact with MicroStrategy reports and documents that are displayed on an iPhone to analyze the data. This section provides details to perform the following:

- *Sorting data in a grid report, page 21*

- *Viewing data at different levels: drilling, page 22*

- *Viewing reports and documents: links, page 22*

- *Using documents to send or update data in your data warehouse: Transaction Services, page 25*

- *Viewing a subset of data: changing your prompt answers, page 24*

- *Copying text from documents, page 24*

You can also view details about a specific point on a graph report. For more information, see *Viewing more information about a point on a graph: tooltips, page 25*.

Sorting data in a grid report

Sorting allows you to reorganize the way data is displayed so that you can analyze it more effectively. For example, you could sort the data in a report in descending order of profit to get a quick idea of your most profitable products.

To sort data in a grid report

1. Tap and hold the column header you want to sort your data by. The context menu opens.

2. Tap **Sort**. The Sort menu opens, for sorting in ascending or descending order, as shown below.
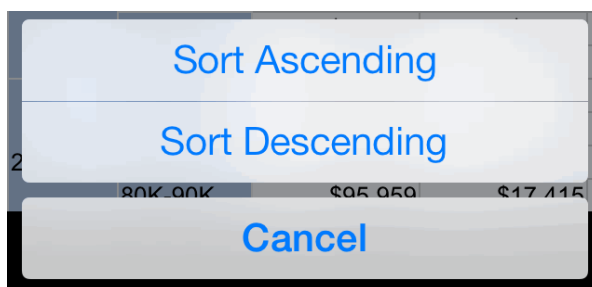
3. Tap **Sort Ascending**, or **Sort Descending**, as applicable.

Viewing data at different levels: drilling

Some MicroStrategy reports and documents allow you to view information at lower, more detailed levels or higher, summarized levels. For example, a report can display time at the year level by default, but can also display data grouped by quarter or month.

Supplier	Units Sold	Revenue	Profit
ACS Innovations	2,802	$1,237,776	$218,871
ATF Electronics	528	$372,525	$60,348
Audiotronics Inc.	3,421	$550,880	$94,912
Digital Equipment	2,063	$159,424	$28,065
Digital Office Inc.	1,635	$538,867	$90,296
DSS Appliance Co.	2,001	$926,595	$168,972
Entertaintron Inc.	3,472	$684,536	$119,718
Impact Components	2,161	$327,935	$57,508
MegaStore Corp.	1,148	$617,987	$108,968
Universal EL	1,570	$611,319	$109,671
Total	**20,801**	**$6,027,843**	**$1,057,330**
Average	**2,080**	**$602,784**	**$105,733**
Maximum	**3,472**	**$1,237,776**	**$218,871**

You may be able to change the level at which you are viewing data by tapping an object. In the example above, tapping **ACS Innovations** displays data for each category of products sold by ACS Innovations.

To go back to the level you were at previously, tap the back arrow in the top left.

If drilling was enabled for a report or document, you can drill from page-bys, attributes, or metrics. Drilling is enabled by the designer. For an introduction to drilling, see the *Basic Reporting Guide*.

Viewing reports and documents: links

Some documents may contain links that you can use to open a report or another document, navigate to another location in your app, or open another application on your iPhone.

To open a link in a document, tap the link. The link may be an image or a text field. The function and appearance of a link depends on the way it was designed.

Tapping on a link may change the following properties of the report or document that the link executes:

- The group of data displayed in the report or document

- The prompt answers that are used in the report or document

- The view of the report: as a grid, as a graph, or as a grid and graph

- If the document contains multiple tabs, called layouts, the tab that displays when the document opens

For steps to create links in documents, see the MicroStrategy Mobile Administration Help.

Opening iPhone applications in documents using links

Some documents may contain links that you can use to interact with applications that are stored on your iPhone. Tap the link to open the application. The link may be an image or a text field. The function and appearance of a link depends on the way it was designed.

A link in a MicroStrategy document may open one of the following applications on your iPhone:

- Email

- Phone

- SMS (text)

- Maps

- Videos

For example, a MicroStrategy document displays sales information for a particular product, including how the product is selling and which stores carry it. The document contains links to applications on your iPhone, which you can tap to:

- Open a video demonstrating the product

- View a map of the nearest stores that carry the product

- Call the store to see if they have the product in stock

The document designer determines how these applications are accessed on the document, and what actions the applications perform. For more information on creating links that open other iPhone applications, see the MicroStrategy Mobile Administration Help.

Viewing a subset of data: changing your prompt answers

MicroStrategy reports and documents that present you with a question use your prompt answers to display a subset of data. Some reports and documents may allow you to change your prompt answer to display different subsets of data without having to re-execute the report.

To change your prompt answers, tap the **Menu** button (⋯) at the top of the report or document, then tap the **Filter** button (▽). The Filter screen is displayed, and you can change your prompt answers.

Copying text from documents

You can copy text from a document. First, select the text to copy by tapping and holding the text. If zoom is disabled, you can also select the text by double-tapping it.

ⓘ If you do not know whether or not zoom is enabled, double-tap the text. If zoom is enabled, double-tapping zooms in or out.

From the pop-up menu that displays, choose to copy the selected text or select all the text in the text field.

If the text is displayed in the Detail section of a document, you must tap the text.

Viewing more information about a point on a graph: tooltips

A tooltip displays detailed information about a specific data point on a graph report. Tooltips provide information such as the value of a specific data point, the name of a group, or the label of a graph's X-axis. An example of a tooltip in a boxplot graph is shown below:
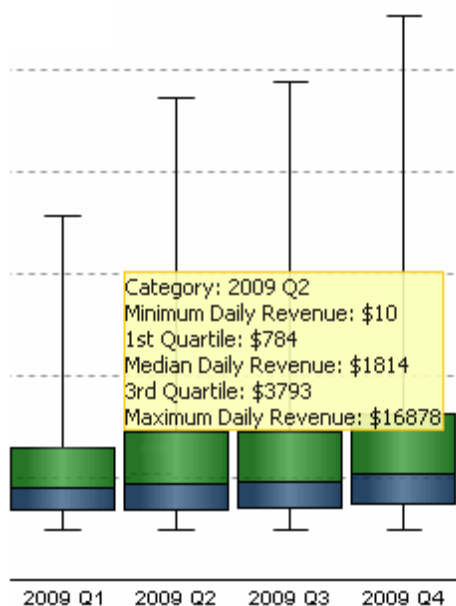
To display a tooltip on a graph report, tap and hold on a data point on the graph.

Using documents to send or update data in your data warehouse: Transaction Services

Some documents may include forms that you can use to edit or add information to your data warehouse through Transaction Services. Some examples are documents that approve requests, track business activity, and execute business decisions, directly from your mobile device. Any new data or changes are saved in your data warehouse.

Prerequisites

To use a Transaction Services-enabled document, you must meet the following criteria:

- You must have Transaction Services.

- You must have the Execute Transaction privilege.

- The Transaction Services-enabled document must already be created.

Using Transaction Services-enabled documents

Depending on the way the document is designed, you may be able to manipulate data in the following ways:

- Edit text or numerical values in a text box.

- Use a slider to select from a range of values.

- Select values from a drop-down list.

- Use an On/Off switch for Yes or No conditions.

- Use a date/time wheel to select a date.

- Use your device's camera to scan a barcode. To manually enter a barcode or QR code, tap the keypad button ⊞ and enter the number that corresponds with the barcode.

  Once you have completed your manipulations, you may be able to perform one or more of the following:

  ℹ The designer may use different names for the buttons or links described below.

- To preview the results of your changes in the Grid/Graph without updating your data warehouse, tap **Recalculate**.

- To update your data warehouse with the values you provided, tap **Submit**.

  ℹ If you are not connected to the internet, the document as added to the list of offline transactions that are pending changes. Your changes are sent to

your data warehouse when a connection is available. For steps to edit your pending changes, see *To edit pending transactions, page 27* below.

- To undo the changes you have made, tap **Discard Changes**. The document reverts to the values from the last time you submitted data.

To edit pending transactions

1. In the document's header, tap the **Offline Transactions** button: ⧄. A list of the transactions that are pending changes are displayed.

2. To change the values you want to submit, tap a transaction in the queue to select it, and then tap **Edit**.

3. To delete a transaction, tap the transaction in the queue to select it, and then tap **Delete**.

4. To view transactions for all documents that are pending changes, tap the list icon ☰, then tap the document whose transactions you want to edit or delete.

Interacting with data

Documents displayed on an iPhone can contain interactive objects you can use to analyze data, upload or download files, and so on.

For examples of interactive objects you can use to analyze data, and instructions to analyze the data that they contain, see the following sections:

- *Analyzing data in a tabular layout: Interactive Grids, page 28*

- *Analyzing data on a Map: Maps, page 31*

- *Analyzing data at a glance: Microcharts, page 35*

- *Analyzing data on a time-based graph: Time Series, page 37*

For instructions to use interactive objects that allow you to view videos, upload images, and download files, see the following sections:

- *Downloading multimedia files: Multimedia, page 38*

- *Uploading images to your data warehouse from your camera or photo album, page 39*

- *Browsing a gallery of images: Image Viewer, page 40*

- *Playing videos: Video Player, page 40*

Analyzing data in a tabular layout: Interactive Grids

Some documents may display data in an interactive grid, as shown in the example below.

In this interactive grid, attributes and metric values are displayed in the columns and rows, and grouping appears at the top of the screen.

The actions that you can perform depend on how the table was designed. You may be able to do the following:

- If a column has an orange triangle above its title, the column contains more than one metric. You can tap the column's title to switch between

28

metrics.

- To sort the grid by a column, tap and hold the title of the column. Click **Sort**, then choose **Ascending** or **Descending** to sort the grid by the column.

- To undo a sort, tap and hold the title of the column you used to sort the grid. Click **Clear Sort**.

- To display different groups of data, tap different page-bys.

- Tap on objects to drill. For more information about drilling, see *Viewing data at different levels: drilling, page 22*.

- Tap on objects to follow links. For more information about linking, see *Viewing reports and documents: links, page 22*, and *Opening iPhone applications in documents using links, page 23*.

- To toggle between full screen and non-full screen mode, tap the center of the screen once.

- To switch the page displayed, swipe across the screen.

Analyzing Hierarchy Reports

Unbalanced hierarchies are hierarchies with branches that descend to inconsistent levels. For example, in an Employee hierarchy, different parts of the organizational structure will have more management levels than others.

Many organizations have aspects of their business that are organized in unbalanced hierarchies. Besides the Employee hierarchy, other typical examples include a chart of accounts, complex product portfolios, and multinational geographic groupings.

Hierarchy Reports are a class of reports in which the data is naturally organized and presented in a hierarchical structure. Hierarchy Reporting features treat hierarchies as a first-class citizen, and make interacting with entire hierarchies intuitive and efficient. Both balanced and unbalanced

hierarchies may be represented in a hierarchy report, although unbalanced hierarchies benefit the most from Hierarchy Reporting features.

Hierarchical Attributes

To facilitate the building of hierarchy reports, there is a new type of attribute: the hierarchical attribute. The hierarchical attribute represents an entire hierarchy and all its levels. For example, you may have a Time hierarchical attribute that represents the Time hierarchy, including its levels Year, Quarter, Month, and Day. In contrast, a normal attribute usually represents a single level of a hierarchy (for example, Year). The hierarchical attribute appears on a grid, filtered, and sorted, much like a normal attribute.

Navigating Hierarchy Reports

Navigate through the hierarchy by expanding and collapsing the hierarchical attributes using the plus (+) and minus (-) icons. You can also tap the cell directly above the top level of the hierarchy and choose **Expand/Collapse** >**Expand All** or **Collapse All**.

Sorting Hierarchy Reports

When a report with a hierarchical attribute is sorted, the structure of the hierarchy remains intact, so every element retains its parent in the hierarchy tree. Each level of the hierarchy is sorted separately from the other levels.

To sort on a hierarchy or a metric, tap the cell directly above the top level of the hierarchy and choose **Sort Ascending** or **Sort Descending**.

Filtering Hierarchy Reports

To filter a Hierarchy report, tap the Filter icon to open the Filter panel. Then, tap the filter you want to use. The Filter panel displays the elements of the hierarchy in a tree. Expand or collapse the filters using the plus (+) and

minus icons. You can also expand or collapse all of the filters by tapping
Expand/Collapse >**Expand All** or **Collapse All**.

Analyzing data on a Map: Maps

Some documents may display data based on locations on a map, as shown
below.
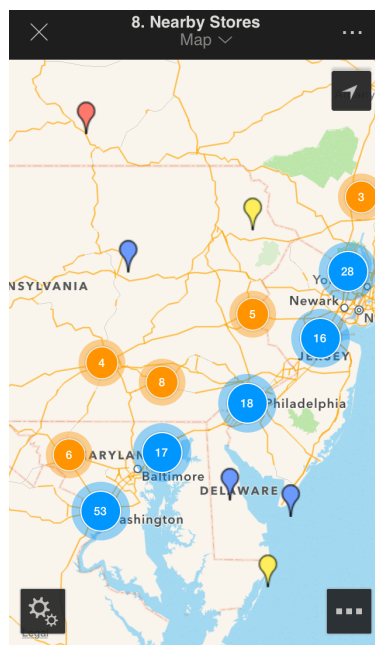
The map uses pins to represent nearby stores. Stores with pins that overlap
each other are grouped together, with the number of pins in the group
marked in the circle.

Some maps may show image markers or the color concentrations of a
density map, instead of pins. For an example of a density map, see
Analyzing data on a Map: Map, page 71.

The document containing a map may prompt you for your current location, so
that the map can show locations that are within a given distance from your
current location. For instructions to answer prompts on an iPhone, see
Answering prompts in MicroStrategy Mobile for iPhone, page 16.

Depending upon how the map was designed, you may be able to:

- Swipe to a different area on the map.

- Zoom in or out by pinching the map. For some maps, markers are displayed instead of colors as you zoom in.

- Rotate the map by placing two fingers on the map and spinning them.

- View more information about a specific marker, by tapping the marker on the map.

- Switch between Map, Satellite, and Hybrid views. Tap the **Settings** icon ⚙, tap **Style**, and then tap the appropriate button.

- Select a different metric to display with the markers. Tap the **Settings** icon ⚙, tap **Map Based on**, and select the metric you want to display.

- You can ungroup markers. Tap the **Settings** icon ⚙, tap **Marker Type**, and turn off **Advanced Clustering**.

- You can display or hide text with a marker's metric value instead of the marker. Tap the **Settings** icon ⚙, tap **Marker Type**, and select either **Marker** or **Text**. The map shown below has metric text displayed.
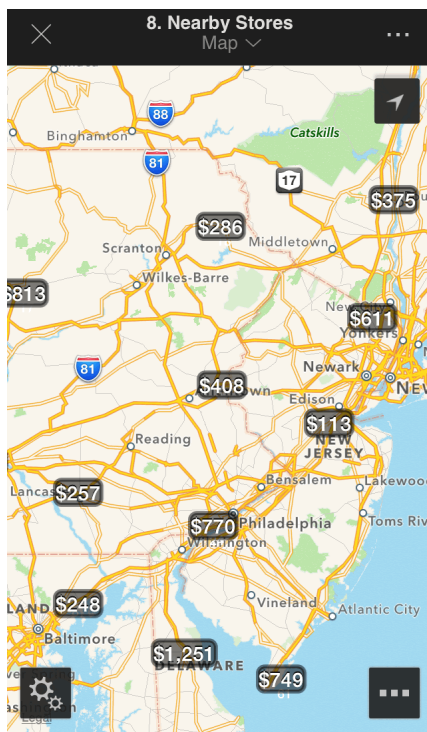
If Advanced Clustering is turned on, the metric text is for the group of markers.

- You can select a set of locations to analyze by creating a region. To do this, tap the **Select** icon ![...], and do one of the following:

  - To select locations within a certain radius of a central location, tap the **Circle** icon. Tap the central location, then drag your finger outward until the radius is as large as you want. As you draw, the radius of the circle, in miles, is displayed.

  - To select locations within a rectangular area, tap the **Rectangle** icon, and then draw a rectangle on the map. As you draw, the length and width of the rectangle, in miles, is displayed.

  - To select locations by drawing a freeform shape around them, tap the **Freeform** icon, and then draw a shape on the map around the locations.

- To select individual markers, tap the **Marker** icon, and then select markers on the map. Tap **Done** to create the region.

A tab for the newly defined region is displayed at the top of the screen, listing how many markers or locations are included in the region. For example, in the map displayed below, two regions have been created. First, a rectangle was drawn on the map, which created Region 1, with 20 markers. Next, a circle was drawn on the map, which created Region 2, with 30 markers. If more than one region is defined, as in this case, another tab, labeled All, is also displayed. The All tab selects all the regions.
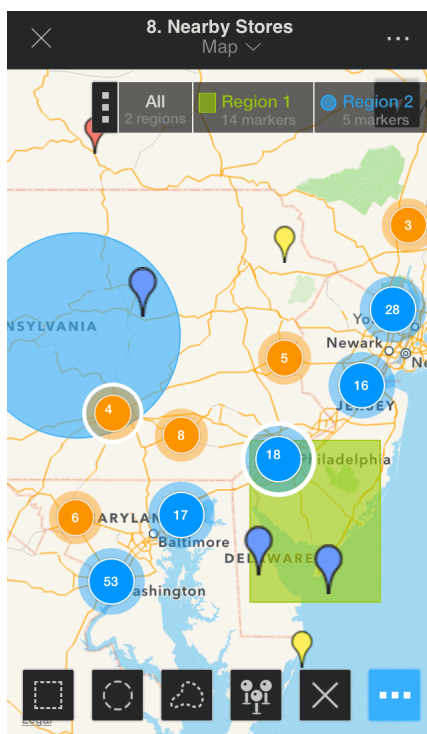
If more than two regions are created, you can scroll through the regions in the tab by swiping the tab. To close the tab, tap the slider (shown below) in the tab.

- After you create a region, you can analyze data by:

  - Browsing through the markers in a region. Tap the region in the region tab to display a list of the markers in the region. Tap a marker to view more information about the marker. You can browse through the details for each marker by tapping the arrows to navigate through the markers.

  - Drilling in a region. Tap the region on the map, then tap **Drill**. Drilling allows you to view information at lower, more detailed levels or higher, summarized levels.

  - Zooming in on the region. Tap the region in the region tap, then tap **Zoom**.

  - Deleting all defined regions from the map. Tap the **Select** icon ![...], and then tap the **x** icon.

Analyzing data at a glance: Microcharts

Some documents may contain a grid with miniature charts, called microcharts, that you can use to view trends in a metric's value at a quick glance. An example is shown below:

To analyze data with Microcharts

1. To view information about a data point in a graph, tap and hold your finger over it. A tooltip with more information appears, as shown below.

2. Drag your finger along the graph to view tooltips for each data point.

3. If some metric columns do not fit on the screen, swipe horizontally to view the other metric columns.

4. Depending on how the microchart was designed, you can sort the microchart based on one of its columns. Tap the title of the column to sort the rows in ascending order, based on the values in the column. Tap the title of the column again to sort in descending order. Tapping the title of the column a third time undoes the sort.

Analyzing data on a time-based graph: Time Series

Reports and documents can include a line graph that displays data over a period of time. The graph may contain multiple data series. For example, the values for the various profit and revenue metrics for the Books and Electronics categories for a two-year period are displayed in the image below:
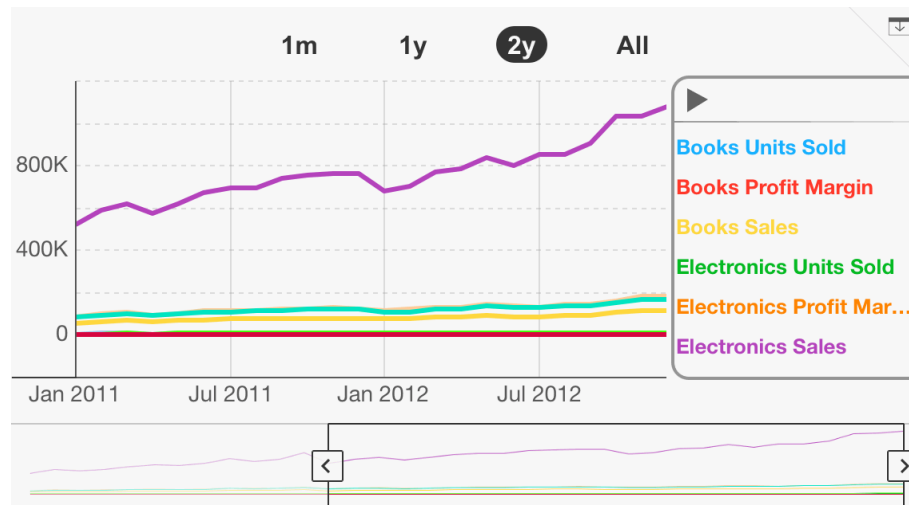
Use the slider at the bottom to select a time period to view. The highlighted section is the time period you are currently viewing.

The actions that you can perform with the graph depend upon how the graph was designed. You may be able to do any of the following:

- Change the orientation of the graph between portrait and landscape by rotating the device.

- To view data for a specific amount of time, tap one of the time periods at the top of the graph. In the example above, you can select either a six-month or twelve-month time period.

- To display tooltips, tap and hold on the graph. For example, if you tapped and held on the Books Revenue graph line for September, the tooltip would display $93,728.

- To scroll through the time axis, drag the slider below the graph.

- To view a longer or shorter period of time, drag the left or right edge of the slider to adjust its size.

- To view a legend of all the metrics, tap the bar on the right edge of the graph. The example already displays the metric legend. You can select a metric to highlight it in the graph.

Downloading multimedia files: Multimedia

Some documents may include files that you can download. These files can be of various formats, such as videos, PDFs, ePub files, and so on.

Any new files that were not in a document previously are labeled as New the next time you view or refresh the document, indicating that new content is available.

Depending on how the document was designed, you may be able to do the following:

- To start downloading the file, tap the **Download** button. A progress bar indicates the status of the download.

- To cancel a download, tap the **Cancel** button.

- To open a file, tap its icon.

Uploading images to your data warehouse from your camera or photo album

Some documents may allow you to upload images by selecting an image from your photo album or by taking a picture using your device's camera, if applicable.

To upload images

1. Tap **Add Photo**.

   If your device has a camera, a menu is displayed, with the option to either take a new photo, or use an existing photo.

   If your device does not have a camera, your photo albums are displayed.

2. To take a new photo, do the following:

   a. Tap **Take New Photo**. The camera opens.

   b. If your device has a front and a back camera, you can switch between the two cameras by tapping the Switch Camera icon .

   c. Use the camera to take a photo. A preview of the photo is displayed, with a white frame.

3. To use a photo from your album, do the following:

   a. Tap **Choose Existing Photo**. A list of the photo albums on your device is displayed.

   b. Navigate to the photo you want to upload, and tap its thumbnail. The photo is displayed, with a white frame.

4. Drag the photo in the white frame to crop the photo and select which area to use. To zoom into the photo, use a pinch gesture.

5. When you have selected which area to use, tap **Use Photo**. To discard this photo and take a new one, tap **Retake**.

6. A preview of the cropped photo displays, with the option to add a caption.

7. To discard this photo and take a new one, tap **Retake**.

8. To use this photo, tap **Done**. The photo appears on the screen. To add more photos, tap the **Add Photo** again, and repeat the above steps. Once you have selected a photo, the counter on the top-right of the frame indicates the number of photos you have chosen.

   🛈 The number of photos you can upload may be limited by the designer.

9. To upload all the photos, tap **Submit**. The photos are uploaded, and depending on the document's configuration, a confirmation may appear.

Browsing a gallery of images: Image Viewer

Some documents may include a gallery of images, which you can browse to view different images.

Depending on how the gallery is designed, you may be able to do the following:

• Swipe left or right to navigate between images.

• Tap an image to make it fill the screen.

Playing videos: Video Player

Some documents may include an embedded video that you can view. Tap **Play** to begin the video.

If a local copy of the video was cached on your device, you can view the video whether or not the device is connected to the internet. While your mobile device is online, the video can be downloaded or streamed.

In order to view streaming videos when the mobile device is offline, ensure that the video is fully downloaded while the mobile device is online. By default, the video file is discarded when you close the MicroStrategy Mobile application. Your administrator can ensure that streaming videos are downloaded and stored on the mobile device for offline use. Steps to do so are provided in the MicroStrategy Mobile Administration Help.

Getting Started with MicroStrategy Mobile for iPad

Introduction

This chapter provides an overview of basic tasks that analysts can perform with MicroStrategy Mobile for iPad.

The steps and images below are based on the default settings of the application. Your interaction with the application depends on the configurations that your administrator has made. For information on customizing MicroStrategy Mobile, see the MicroStrategy Mobile Administration Help.

If you are designing reports and documents for the iPad, see the MicroStrategy Mobile Administration Help.

If you are an administrator planning to deploy and configure MicroStrategy Mobile for mobile device users, see the MicroStrategy Mobile Administration Help.

Prerequisites

- You must have an iPad device with iOS 4.3.x or higher.

- You must have the following privileges:

  - Use MicroStrategy Mobile, for all projects containing reports or documents that you want to view.

  - Mobile View Document.

  For information on privileges, contact your administrator.

Getting Started with MicroStrategy Mobile for iPad

It is recommended that you install the MicroStrategy Mobile application sent to you by your administrator.

To start MicroStrategy Mobile for iPad, tap the application's icon. You may need to type your MicroStrategy user name and password.

When you log in to MicroStrategy, the Home screen displays. You can access the projects you are connected to, any reports you have subscribed to, and reports that you have recently accessed.
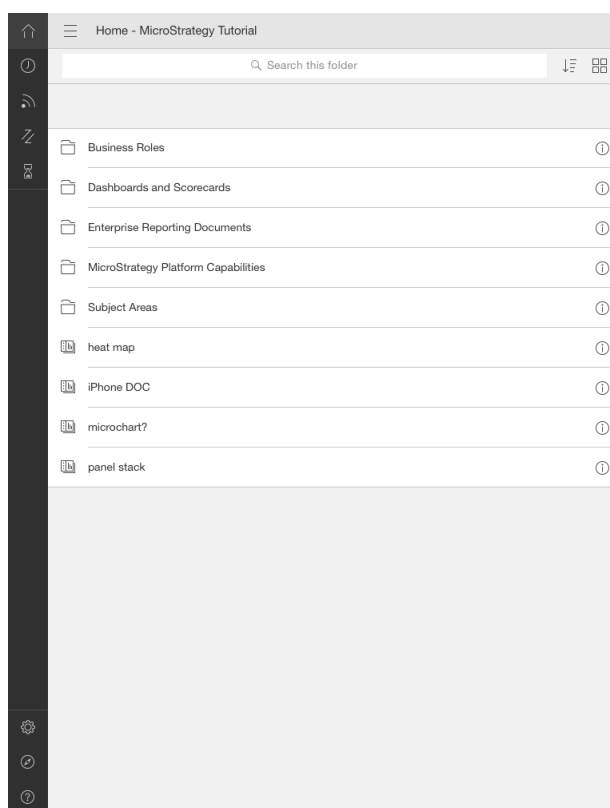
The icons on your Home screen may vary, depending on the configuration set by your administrator. For example, you may see additional shortcuts to reports and documents. For information on customizing the Home screen, see the MicroStrategy Mobile Administration Help.

From the toolbar on the left, you can select from the following options:

- **Home** 🏠 : Displays the list of projects your device is connected to.

- **Recently viewed** 🕐 : Displays reports and documents that you have recently accessed.

- **Subscriptions** 📶 : Displays reports and documents that you are subscribed to.

- **Offline Transactions** 📝 : Some documents may include forms that you can fill out and send back to your company's database. The Offline Transactions screen displays a list of documents that will send information to your company's database once you are connected to the Internet.

- **Report Queue** ⧗ : While a report or document is opening, you can tap **View Later** to download the report or document in the background and continue using your app. The Report Queue displays the reports and documents that were downloaded.

- **Settings** ⚙ : Allows you to configure the MicroStrategy Mobile servers and projects that you are connected to, and general administrative and display options.

  > ℹ It is recommended that you configure the application using the configuration URL that you receive from your administrator.

- **Learn more** 🧭 : Displays MicroStrategy's Mobile website, where you can learn more about MicroStrategy Mobile.

- **Help** ❓ : Displays the help for the application.

- If you have tagged any reports and documents, the tags you created. Tap the name of a tag to view reports and documents with the tag.

To close the navigation menu, tap the navigation menu icon ☰.

Receiving alerts when data meets certain conditions: Push notifications

You can configure MicroStrategy to send you an alert on your iPad when a metric on a report meets a specific condition. For example, you can choose to receive an alert if the Profit data in a report drops below $50,000. These alerts are called push notifications, and can be received even if the MicroStrategy iPad application isn't running. For information on setting up push notifications, see the MicroStrategy Mobile Administration Help.

Turning alerts on or off

You can turn alerts on or off using the application's Settings screen.

> ⚠️ The documentation listed below refers to software produced by third-party vendors and thus is subject to change. MicroStrategy makes no guarantee on the availability or accuracy of third-party documentation.

To turn alerts on or off

1. On the iPad's Home screen, tap **Settings**. The Settings screen opens.

2. Tap **Notification Center**. The Notification Center page opens, with a list of applications that can send you alerts.

3. Tap **MicroStrategy**.

4. Turn the **Show in Notification Center** switch on or off.

Selecting the display of the alert

You can specify whether you want to receive notifications as pop-up alerts, with sounds, or both, through your iPad's Settings screen.

> ⚠️ The documentation listed below refers to software produced by third-party vendors and thus is subject to change. MicroStrategy makes no guarantee on the availability or accuracy of third party documentation.

To change the type of notification using the iPad's Settings screen

1. Open your iPad's Settings screen. On the iPad's Home screen, tap **Settings**.

2. Tap **Notification Center**. The Notification Center page opens, with a list of applications that can send you alerts (push notifications).

3. Tap **MicroStrategy**.

4. Choose an **Alert Style** from the list:

    a. **None**: No alerts are displayed for push notifications.

    b. **Banners**: Display at the top of the iPad screen. Tap a banner to open MicroStrategy Mobile. If you ignore the banner, it will close automatically.

    c. **Alerts**: Display as a pop-up window on the iPad. Tap a button to open MicroStrategy Mobile or close the alert.

5. Turn the **Sounds** switch on or off.

6. Turn the **View in Lock Screen** switch on or off.

Sorting the list of reports, documents, and folders

Some screens, such as the Home screen and the Subscriptions screen, contain a list of files, such as reports, documents, and folders, that you can sort. Sorting can help make it easier to find the report or document you want or identify which files were updated so you can see any new data. By default, files are sorted by name.

To sort by the name of the file, the date the file was last modified, or the type of file, tap the **Sort** icon ⬇☰. Select **Name**, **Last Modified**, or **Type**, depending on how you want to sort the folder.

You can also sort by the date the files were last downloaded to your iPad. From the navigation menu, select **Settings**. Turn on **Show Timestamp**

Options. Return to the screen with the files you want to sort, tap the **Sort** icon ⬇☰, then select **Last Updated**.

Running and viewing reports and documents

Once you have started MicroStrategy Mobile, you can navigate through your project and run reports and documents on the iPad.

Some reports and documents require you to answer questions, called prompts, before the report is executed. For information on answering prompted reports, see *Answering prompts in MicroStrategy Mobile for iPad, page 55*.

For information on interacting with the data in reports and documents, see *Chapter , Analyzing Reports and Documents on an iPad*.

Running reports and documents you have subscribed to

You can automatically download reports and documents on a specified schedule by subscribing to the report or document. All the reports and documents that you are subscribed are listed in the Subscriptions page.

For steps to subscribe to a report or document, see the MicroStrategy Web Help.

To run reports and documents you have subscribed to

1. From the navigation menu on the left, tap the **Subscriptions** icon 📶. A list of the reports and documents you are subscribed to displays, grouped by project.

2. To view the description for a report or document and where the report or document is located, tap the **i** info button to the right of the report or document's name. The info pane displays.

   Tap the **x** button to close the info pane.

3. Tap the name of the report or document you want to run.

   For information on viewing and navigating reports, see *Viewing grid and graph reports, page 50*.

   For information on viewing and navigating documents, see *Viewing Report Services documents, page 51*.

Running reports and documents by browsing to their location

In addition to running reports and documents that you are subscribed to, you can browse folders in projects to locate reports or documents and run them.

To run reports and documents by browsing to their location

1. In the default Home screen, tap the name of the project you want to browse. The folders within the project are displayed.

2. Browse to the folder that contains the report or document that you want to run.

   The icon next to the report or document name indicates whether it is a grid report, graph report, document, or dashboard.

   - Grid reports: ⊞

   - Graph reports: ⊣⎸⎸

   - Documents: 🗎

   - Dashboards: 🖻

3. To make it easier to find the report or document you want, you can sort the contents of the project by name, last modified date, type, and any tags you have added to the reports or documents. Tap the **Sort** icon ↓≣

at the top. Select **Name**, **Last Modified**, **Type**, or **Tag**, depending on how you want to sort the folder.

You can also sort by the date the files were last downloaded to your iPad. From the navigation menu, select **Settings**. Turn on **Show Timestamp Options**. Return to the screen with the files you want to sort, tap the **Sort** icon ⬇☰, then select **Last Updated**.

4. To view a specific report or document's details, tap the **i** info button ⓘ

   next to the report or document's name. A description of the report or document displays, along with the dates it was last modified and refreshed.

   To close the details pane, tap the **X** icon at the top of the pane.

5. To view descriptions for all items in the folder, tap the **Table View** icon ⊞ at the top of the screen.

   To return to viewing a list of the items in the folder, tap the **List View** icon 🗐 at the top of the screen.

6. Tap a report or document in the list to run it. The report or document is displayed.

   If you are presented with a prompt to answer, see *Answering prompts in MicroStrategy Mobile for iPad, page 55* for details to answer each type of prompt.

   For information about viewing and navigating reports, see *Viewing grid and graph reports, page 50*.

   For information about viewing and navigating documents, see *Viewing Report Services documents, page 51*.

   As you navigate the projects you are connected to, the name of the folder you are currently in displays at the top of the screen. To return to

a folder you were in before, swipe the current folder's name to the right, then tap the name of the folder you want to return to.

Viewing grid and graph reports

There are two types of MicroStrategy reports: grid reports and graph reports. Grid reports display business data organized in rows and columns. Graph reports present data visually in styles such as a bar, line, or pie graph.

The following is applicable to most grid and graph reports:

- You can view reports in portrait or landscape mode by rotating the iPad.

- To scroll across a report, swipe horizontally. To scroll up and down a report, swipe vertically.

- In grid reports, tap and hold your finger over a cell to see a magnified view of the data in that cell.

- To switch between viewing the report as a grid or a graph, tap the graph icon at the top-right of the screen.

- The data in a report may be specific to a certain group, displayed in the page-by at the top of the report. To change the group of data, tap the name of the current group and choose another. You may also be able to switch to another group using gestures, as described in .

Using gestures for page-by

You can use gestures to navigate through pages in up to two page-by groups, displayed at the top of the report.

If the designer has enabled book-style page-by navigation, the report is displayed as a book, as shown below.

To navigate through the pages, tap the left or right edge of the report.

If book-style page-by navigation is not enabled, switch between page-by groups by tapping the name of the current page-by group at the top of the page. Select the group you want to view.

Viewing Report Services documents

Report Services documents contain several representations of key performance indicators (KPIs), giving you various perspectives of your business data.

Switching between panels in a document: panel stacks

A document may contain panels that you can switch between, similar to slides in a slideshow.

You may be able to switch between panels by tapping a button or link, or by swiping left or right.

Some panels contain a gray bar at the bottom with a row of circles, as shown below. Each circle represents a panel and the currently displayed panel is marked with a dark circle.

To switch between panels, swipe left or right.

Viewing and navigating tabs in a document

A document may contain multiple tabs across the bottom of the document, called layouts. To view a layout, tap the tab with the layout's name.

Each layout functions as a separate document and can have its own grouping of data, formatting, and so on. The following image provides an example of a document with multiple layouts.
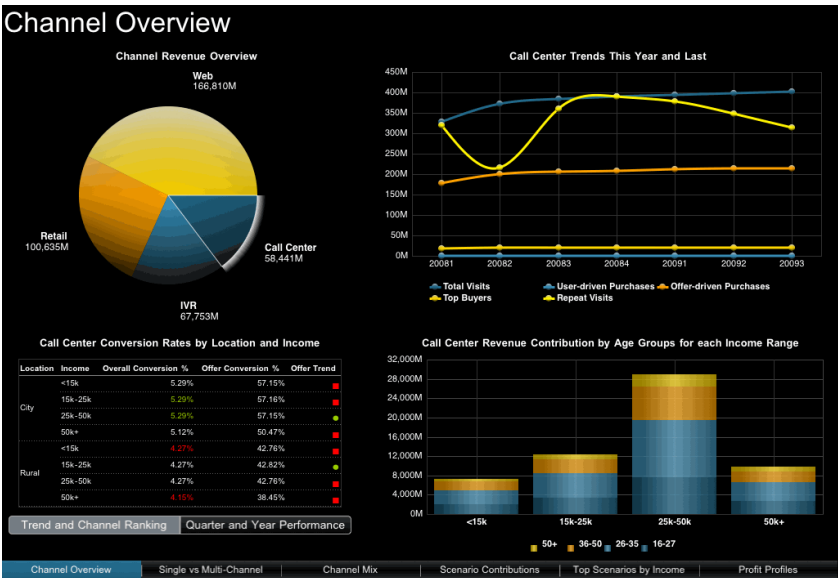
Tap the name of a layout to switch to it.

Sharing reports and documents via email

You can share a screenshot of a MicroStrategy report or document with your contacts using email. Your recipients do not need to have MicroStrategy installed to view the screenshot. The steps to share a screenshot are as follows.

Prerequisites

• You must have configured an email account on your iPad.

To share reports via email

1. In MicroStrategy Mobile, open a report or document that you want to share with your contacts.

2. In the top-right corner, tap the Menu button . The context menu opens.

3. Tap **Email Screen**. A new email message displays, with a screenshot of the report included in the body.

4. Type the email addresses of your contacts in the **To** and **Cc/Bcc** fields, as applicable.

5. Once you have composed the email, tap **Send**. The email is sent.

Annotating reports and documents on an iPad

You can add annotations, such as comments and freehand drawings, to a screenshot of your dashboard, and share the annotated screenshot with your contacts. The steps to annotate and share a screenshot follow.

To annotate and share reports and documents on an iPad

1. In MicroStrategy Mobile, open a report or document you want to annotate and share.

2. In the top-right corner, tap the Menu button . The context menu opens.

3. Tap **Annotate and Share**. A screenshot of the dashboard opens.

4. You can annotate the screenshot in the following ways:

   • To draw shapes freehand, use your finger.

   • To add a comment to your drawing, tap the drawing, then tap **Add Comment**. A comment box is displayed, which allows you to enter text.

   • To add a comment anywhere in the screenshot, in the top right of the screen, tap the **Add Comment** icon . A comment box is displayed.

   • To move the comment box, tap, hold, and drag the box around the screen.

   • To resize the comment box, tap, hold, and drag the corners of the box.

5. To email, save, or print the annotated screenshot, tap the Action button , then select the appropriate action.

Printing reports and documents

If you have a printer available on your network, you can print a copy of your report or document, as described in the steps below.

To print reports and documents

1. In MicroStrategy Mobile, open a report or document that you want to print.

2. In the top-right corner, tap the Menu button **•••**.

3. Tap **Print**. The Printer Options dialog box opens.

4. To choose a printer, tap **Printer**. A list of available printers is displayed.

5. Tap the name of the printer you want to print from. The printer is selected, and you are returned to the Printer Options dialog box.

6. To change the number of copies to print, use the plus **+** and minus **-** buttons.

7. If your printer supports double-sided printing, turn the **Double-sided** switch on.

8. When you are satisfied with the settings, tap **Print**.

Answering prompts in MicroStrategy Mobile for iPad

Some reports and documents may ask you to choose what data is displayed by asking you questions, called prompts. Prompts allow you to display only the data that you want to view.

The following table lists the types of prompt you may have to answer and steps to answer them.

Type of Prompt	Answering the prompt
Calendar	To select a date, tap it. To select a range of dates, tap and hold the start date, and drag until the end date.

Type of Prompt	Answering the prompt
Date/time wheel	Scroll through the columns to select a date and time.
Text prompt	Tap inside the text box to begin typing an answer.
Numerical slider	Drag the slider to choose a value.
Numeric stepper	Tap the plus or minus button to select a value.
Numeric wheel	Scroll to the value you want to use.
On/Off switch	Slide the switch to turn it on or off.
Location	Tap the button to use your current location. You are prompted for permission to use your location.
Barcode	Use your device's camera to scan a barcode or QR code. To manually enter a barcode, tap the keypad button and enter the number that corresponds with the barcode.
Selections from a list	For a list of possible selections, tap the name of the list. Tap an item in the list to select it. The item you select is displayed in the report or document. If an arrow icon displays next to an item, then the item itself may contain one or more lists. Tap the arrow icon to display the lists, then tap the lists to view the items you can select from the list. To change the list so that the items you select are excluded from the report or document, tap **in list** next to the list's name.

Using the Prompts screen

The Prompts screen displays the prompts associated with a report or document and your response to them. The Prompts screen displays if one or

more of the following conditions are met:

- The report or document contains at least one prompt

- You have not opened this report or document before

- You have not saved your previous answers to the prompts in this report or document

- An answer you provided does not meet the prompt's requirements

The Prompts screen displays each prompt's name, description, and the answers you have provided. Tap the name of a prompt to answer it.

If the answer you have provided does not meet the prompt's requirements, the requirements are displayed in red text.

To change your prompt answers before running the report, tap the name of the prompt that you want to revise.

When the prompt's answer requirements are met, tap **Apply** to run the report. If you want to change your prompt answers after you run the report, tap the Menu button ▪▪▪, then tap the Prompts icon to display and edit your prompt answers.

Achieving the best response from MicroStrategy Mobile

The speed at which your list of reports is retrieved and reports are refreshed in MicroStrategy Mobile depends on several factors:

- Your mobile service provider or internet service provider.

- The time at which you are accessing the reports and documents.

The speed at which a report or document opens in MicroStrategy Mobile depends on several factors:

- Amount of usable memory on the mobile device.

- The version of the mobile device.

- The size and contents of the reports and documents.

For best practices for creating reports and documents for use with MicroStrategy Mobile, see the MicroStrategy Mobile Administration Help.

Consider creating subscriptions to your most commonly used reports and documents. This gives you access to them in the Reports tab on your Home screen, and can pre-load their contents on your device so that they open more quickly. For steps to create subscriptions, see the MicroStrategy Web Help.

Analyzing Reports and Documents on an iPad

Introduction

This chapter describes the tasks you can perform to interact with and analyze data in MicroStrategy Mobile for iPad. The following sections are covered:

- *Analyzing reports and documents on an iPad, page 59*

- *Interacting with data, page 67*

- *Using interactive dashboards on an iPad, page 84*

Prerequisites

- This chapter assumes you are familiar with the information provided in *Chapter , Getting Started with MicroStrategy Mobile for iPad*.

Analyzing reports and documents on an iPad

This section describes the following ways in which you can interact with data in MicroStrategy Mobile for iPad:

- *Sorting data in a grid report, page 60*

- *Viewing more information about a data point on a graph: tooltips, page 60*

- *Viewing data at different levels: drilling, page 61*

- *Viewing reports and documents: links and buttons, page 63*

- *Viewing subsets of data: changing your prompt answers, page 64*

- *Opening other iPad applications from documents using links, page 64*

- *Using documents to send or update data in your data warehouse: Transaction Services, page 65*

- *Copying text from documents, page 67*

Sorting data in a grid report

Sorting allows you to reorganize the way data is displayed so that you can analyze it more effectively. For example, you could sort the data in a report in descending order of profit to get a quick idea of your most profitable products.

To sort data in a grid report

1. Tap and hold the column header you want to sort your data by. The context menu opens.

2. Tap **Sort**. The Sort menu opens, for sorting in ascending or descending order, as shown below.
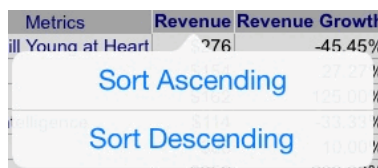
3. Tap **Sort Ascending**, or **Sort Descending**, as applicable.

Viewing more information about a data point on a graph: tooltips

A tooltip displays detailed information about a specific data point on a graph report. Tooltips provide information such as the value of a specific data point, the name of a group, or the label of a graph's X-axis. An example of a tooltip in a pie chart is shown below:

Annual GDP Growth (%)
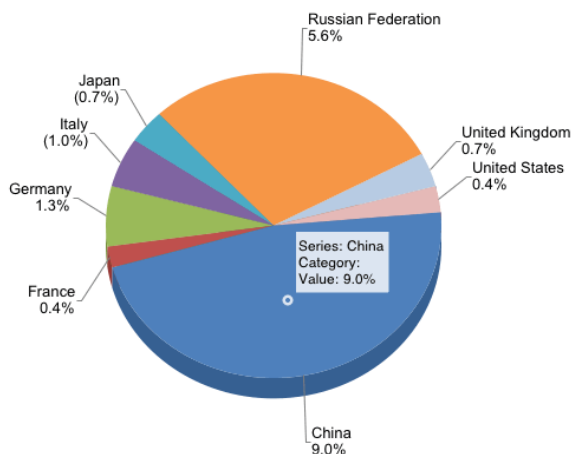
To display a tooltip on a graph report, tap and hold a data point on the graph.

Viewing data at different levels: drilling

Drilling lets you view your data at levels other than those displayed in the report or document. For example, a report displays data at the year level by default. You can drill down to view the same data at the quarter level. Alternatively, you can drill to another dimension, such as Geography, to view data at the city level.

If drilling is enabled, **Drill Anywhere** appears when you tap and hold an attribute header or attribute element, as shown below:

To drill on a grid or graph

1. Tap and hold an attribute header or attribute element, and then release. The context menu appears.

2. Tap **Drill Anywhere** (on a grid) or **Drill** (on a graph). The graphical drill path selector appears, as shown below. A list of dimensions to which you can drill is displayed.
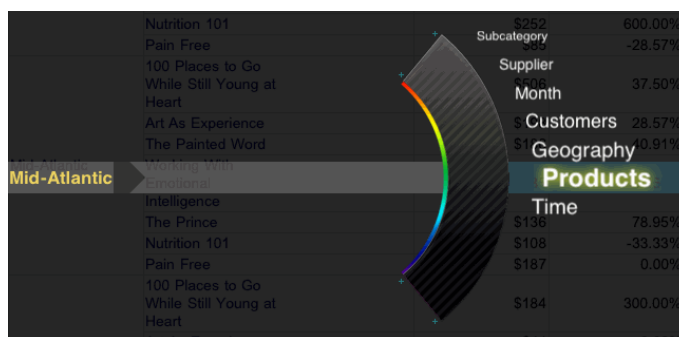
To cancel drilling at any time, tap the close button at the top-right of the drill path selector.

3. In the drill path interface, scroll through the displayed dimensions until the one you want to drill to is highlighted in the center.

4. Tap the dimension's name. The dimension gets added to the drill path on the left, and a list of attributes representing that dimension appears.

5. Repeat the procedure, adding an attribute to the drill path. The **Update** icon appears, as shown below.
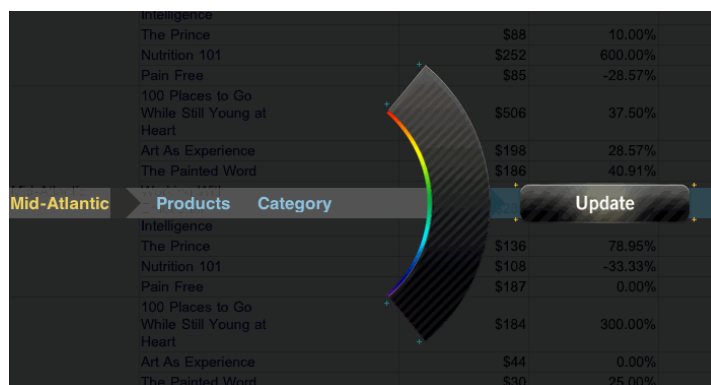
> ℹ️ If you want to change your selections, tap the name of the first dimension you selected, shown in blue at the far left of the screen. The drill path is reset.

6. Once you have made your selection, tap **Update** to refresh the report with data for your chosen attribute.

7. To return to the original report, tap the **Back** button on the top-left.

Viewing reports and documents: links and buttons

A link is a connection between the currently displayed MicroStrategy document and another document or report. When selected, a link executes a document or report from the currently displayed document.

Links in MicroStrategy documents can be displayed as images, text, or buttons. The function and appearance of a link depends upon the way it is designed.

> ℹ️ A button can also open a different screen, such as the Home screen or the Report List.

To follow a link that is displayed on a document, tap the button, or the linked image or text. To return to the original document, tap the **Back** arrow at the top-left of the screen.

When a link executes a report or document, it can change the following properties of the report or document that it executes:

- The grouping of a report or document

- The layout of a document

- The view of a report: as a grid, as a graph, or as a grid and graph

- The prompt answers that are used in a report or document

- The selector values that are used in a document

A link can also display the Group-by page. For more information about the Group-by page, see *Chapter , Getting Started with MicroStrategy Mobile for iPad*.

For steps to create links in documents, see the MicroStrategy Mobile Administration Help.

Viewing subsets of data: changing your prompt answers

MicroStrategy reports and documents that contain prompts use your prompt answers to display a subset of data. Some reports and documents may allow you to change your prompt answer to display different subsets of data without having to navigate to the report and re-execute it.

Reports or documents that allow you to change your prompt answers may display a Filter icon ▽ at the top of the screen.

To change your prompt answers after the report has run, tap the **Filter** ▽

icon. The prompt screen is displayed, and you can change your prompt answers.

Opening other iPad applications from documents using links

A MicroStrategy document can use links to open other iPad applications, such as Safari, Mail, and Google Maps. For example, a document may report sales per employee. When you view the document, you can tap a link to send an email to an employee using Mail.

The document designer determines how applications are accessed on the document, and what actions the applications perform. For information about designing documents, see the MicroStrategy Mobile Administration Help.

Using documents to send or update data in your data warehouse: Transaction Services

Some documents may include forms that you can use to edit or add information to your data warehouse through Transaction Services. Some examples are documents that approve requests, track business activity, and execute business decisions, directly from your mobile device. Any new data or changes are saved in your data warehouse.

Prerequisites

To use a Transaction Services-enabled document, you must meet the following criteria:

- You must have Transaction Services.

- You must have the Execute Transaction privilege.

- The Transaction Services-enabled document must already be created.

Using Transaction Services-enabled documents

Depending on the way the document is designed, you may be able to manipulate data in the following ways:

- Edit text or numerical values in a text box.

- Use a slider to select from a range of values.

- Select values from a drop-down list.

- Use an On/Off switch for Yes or No conditions.

- Use a date/time wheel to select a date.

- Use your device's camera to scan a barcode or QR code. To manually enter a barcode, tap the keypad button ▦ and enter the number that corresponds with the barcode.

Once you have completed your manipulations, you may be able to perform one or more of the following:

ℹ The designer may not use all the buttons described below, or may use different names for them.

- To preview the results of your changes in the Grid/Graph without updating your data warehouse, tap **Recalculate**.

- To update your data warehouse with the values you provided, tap **Submit**.

ℹ If you are not connected to the internet, the document is added to the list of offline transactions that are pending changes. Your changes are sent to your data warehouse when a connection is available. For steps to edit your pending changes, see *To edit pending transactions, page 66* below.

- To undo the changes you have made, tap **Discard Changes**. The document reverts to the values from the last time you submitted data.

To edit pending transactions

1. In the document's header, tap the **Offline Transactions** button: ⇄. A list of the transactions that are pending changes are displayed.

2. To change the values you want to submit, tap a transaction in the queue to select it, and then tap **Edit**.

3. To delete a transaction, tap the transaction in the queue to select it, and then tap **Delete**.

4. To view transactions for all documents that are pending changes, tap the list icon ☰ , then tap the document whose transactions you want to edit or delete.

Copying text from documents

You can copy text from a document. First, select the text to copy by tapping and holding the text. If zoom is disabled, you can also select the text by double-tapping it.

> If you do not know whether or not zoom is enabled, double-tap the text. If zoom is enabled, double-tapping zooms in or out.

From the pop-up menu that displays, choose to copy the selected text or select all the text in the text field.

If the text is displayed in the Detail section of a document, you must tap the text.

Interacting with data

Documents on the iPad can contain interactive objects you can use to interact with rich, graphical displays of data, view videos, download files, and so on.

For examples of interactive objects you can use to analyze data, and instructions to analyze the data that they contain, see the following sections:

For instructions to use interactive objects that allow you to view videos, upload images, and download files, see the following sections:

- *Downloading multimedia files: Multimedia, page 81*

- *Uploading images to your data warehouse from your camera or photo album, page 82*

- *Browsing a gallery of images: Image Viewer, page 83*

- *Playing videos: Video Player, page 84*

Analyzing trends at a glance: Microcharts

Some documents may contain a grid with miniature charts, called microcharts, that you can use to view trends in a metric's value at a quick glance. An example is shown below:
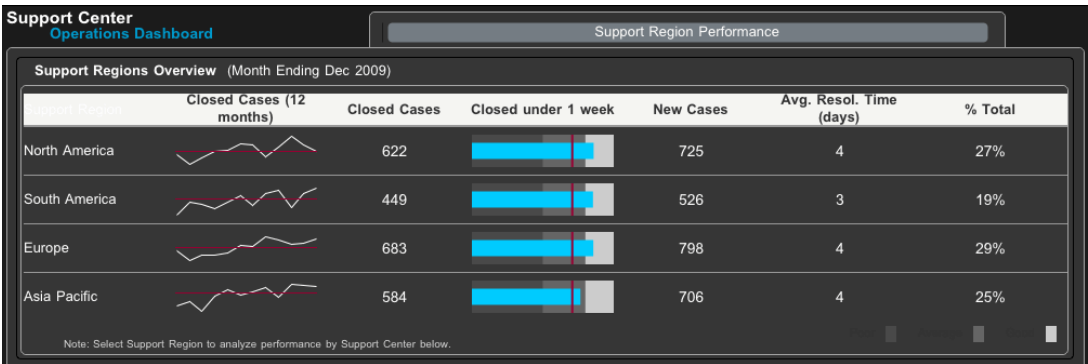
To analyze data with Microcharts in MicroStrategy Mobile

1. To view information about a data point in a graph, tap and hold your finger over it. A tooltip with more information appears, as shown below.
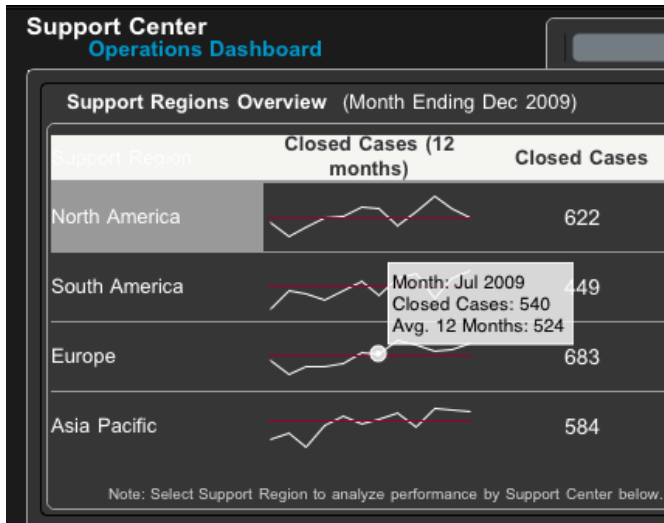
2. Drag your finger along the graph to view tooltips for each data point.

3. Depending on how the microcharts grid was designed, you can sort the grid based on one of its columns. Tap the title of the column to sort the rows in ascending order, based on the values in the column. Tap the title of the column again to sort in descending order. Tapping the title of the column a third time undoes the sort.

4. If some metric columns are not displayed, swipe horizontally to view the metric columns that could not fit on the screen.

Analyzing Hierarchy Reports

Unbalanced hierarchies are hierarchies with branches that descend to inconsistent levels. For example, in an Employee hierarchy, different parts of the organizational structure will have more management levels than others.

Many organizations have aspects of their business that are organized in unbalanced hierarchies. Besides the Employee hierarchy, other typical examples include a chart of accounts, complex product portfolios, and multinational geographic groupings.

Hierarchy Reports are a class of reports in which the data is naturally organized and presented in a hierarchical structure. Hierarchy Reporting

features treat hierarchies as a first-class citizen, and make interacting with entire hierarchies intuitive and efficient. Both balanced and unbalanced hierarchies may be represented in a hierarchy report, although unbalanced hierarchies benefit the most from Hierarchy Reporting features.

Hierarchical Attributes

To facilitate the building of hierarchy reports, there is a new type of attribute: the hierarchical attribute. The hierarchical attribute represents an entire hierarchy and all its levels. For example, you may have a Time hierarchical attribute that represents the Time hierarchy, including its levels Year, Quarter, Month, and Day. In contrast, a normal attribute usually represents a single level of a hierarchy (for example, Year). The hierarchical attribute appears on a grid, filtered, and sorted, much like a normal attribute.

Navigating Hierarchy Reports

Navigate through the hierarchy by expanding and collapsing the hierarchical attributes using the plus (+) and minus (-) icons. You can also tap the cell directly above the top level of the hierarchy and choose **Expand/Collapse >Expand All** or **Collapse All**.

Sorting Hierarchy Reports

When a report with a hierarchical attribute is sorted, the structure of the hierarchy remains intact, so every element retains its parent in the hierarchy tree. Each level of the hierarchy is sorted separately from the other levels.

To sort on a hierarchy or a metric, tap the cell directly above the top level of the hierarchy and choose **Sort Ascending** or **Sort Descending**.

Filtering Hierarchy Reports

To filter a Hierarchy report, tap the Filter icon to open the Filter panel. Then, tap the filter you want to use. The Filter panel displays the elements of the hierarchy in a tree. Expand or collapse the filters using the plus (+) and minus icons. You can also expand or collapse all of the filters by tapping **Expand/Collapse** >**Expand All** or **Collapse All**.

Analyzing data on a Map: Map

Documents can display data based on locations on a map. Points of interest may be marked on the map, and may be different sizes based on the value of a metric.

The map below shows the population of large cities in Europe using colors. Darker colors indicate a higher population density.

A map may show image markers or bubble markers instead.

The document containing a map may prompt you for your current location so the map can show locations that are within a given distance from you. For information about answering prompts on an iPad, see *Chapter , Getting Started with MicroStrategy Mobile for iPad*.

Depending on how the map was designed, you may be able to:

* Swipe to a different area on the map.

* Zoom in or out by pinching the map. For some maps, markers are displayed instead of colors as you zoom in.

* Rotate the map by placing two fingers on the map and spinning them.

* View more information about a specific marker, by tapping the marker on the map.

* Switch between Map, Satellite, and Hybrid views. Tap the name of the current view, then tap the appropriate button.

* Select a different metric to display with the markers. Tap the name of the current metric, then tap the metric you want to display.

* You can select a set of locations to analyze, by creating a region. To do this, tap the **Select** icon ⬛, and do one of the following:

  ○ To select locations within a certain radius of a central location, tap the **Circle** icon. Tap the central location, then drag your finger outward until the radius is as large as you want. As you draw, the radius of the circle, in miles, is displayed.

  ○ To select locations within a rectangular area, tap the **Rectangle** icon, and then draw a rectangle on the map. As you draw, the length and width of the rectangle, in miles, is displayed.

- To select locations by drawing a freeform shape around them, tap the **Freeform** icon, and then draw a shape on the map around the locations.

- To select individual markers, tap the **Marker** icon, and then select markers on the map. Tap **Done** to create the region.

A tab for the newly defined region is displayed at the right of the screen, listing how many markers or locations are included in the region. For example, in the map displayed above, three regions have been created. First, a circle was drawn on the map, which created Region 1, with four markers. Next, a freeform shape was drawn on the map, which created Region 2, with seven markers. Finally, a rectangle was drawn on the map, which created Region 3, with four markers. Tapping **All** selects all the regions.

If more than two regions are created, you can scroll through the region tabs by swiping the tabs. To close the region tabs, tap the Close icon (shown below) in the region tabs.

- After you create a region, you can analyze data by:

  - Viewing more information about a specific marker, by tapping the marker on the map.

  - Browsing through different marker information for a region, tapping the region in the region tab. Tap a marker to view more information about the marker.

  - Drilling in a region. Tap the region on the map, and then tap **Drill**. Drilling allows you to view information at multiple levels.

  - Zooming in on a region. Tap the region in the region tab, and then tap **Zoom**.

○ Deleting all defined regions from the map. Tap the **Select** icon ⬛, and then tap the **x** icon.

Analyzing data on a time-based graph: Time Series

Some documents may include a line graph that displays data over a period of time, called a Time Series. A Time Series may contain multiple data series. For example, the Time Series shown below displays values for the Profit metric for the Business and Drama subcategories:
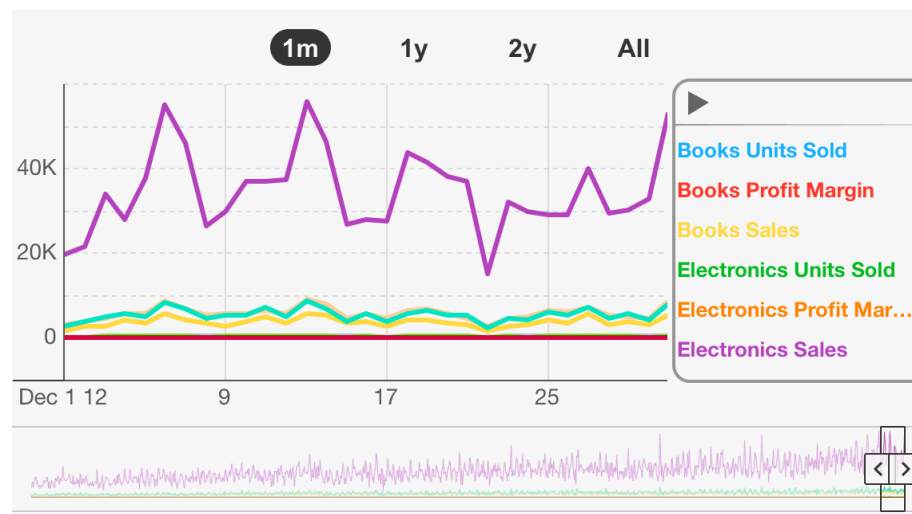
Use the slider at the bottom to select a time period to view. The highlighted section is the time period you are currently viewing.

The actions that you can perform depend on how the Time Series was designed. Depending upon the Time Series that you are analyzing, do any of the following:

• To display tooltips, tap and hold part of the graph.

• To scroll through the time axis, swipe horizontally, or drag the highlighted portion of the slider at the bottom.

• To view a longer or shorter period of time, drag the left or right edge of the slider to adjust its size.

- To view a legend of all the metrics, tap the bar on the right edge of the Time Series.

Analyzing data in a Graph Matrix

Some documents may contain a chart with multiple graphs, called a Graph Matrix visualization. The data may be displayed in different graph styles, such as line, bar, or scatter. An example of a Graph Matrix that uses line graphs is shown below.

You may be able to perform the following actions in a Graph Matrix visualization:

- Use a pinch gesture to zoom into the graphs. To return to the original zoom level, double-tap the visualization.

- Tap and hold points on the graphs to view additional information about them.

- To sort the grid by a column, tap and hold the title of the column. Click **Sort**, then choose **Ascending** or **Descending** to sort the grid by the column.

Analyzing relationships between items in a Network visualization

You can use a Network visualization to quickly view data about relationships between individual items. Each node represents a business attribute, while the lines between them represent the relationships between them. An example of a Network visualization that displays the relationships between product categories and subcategories is shown below.
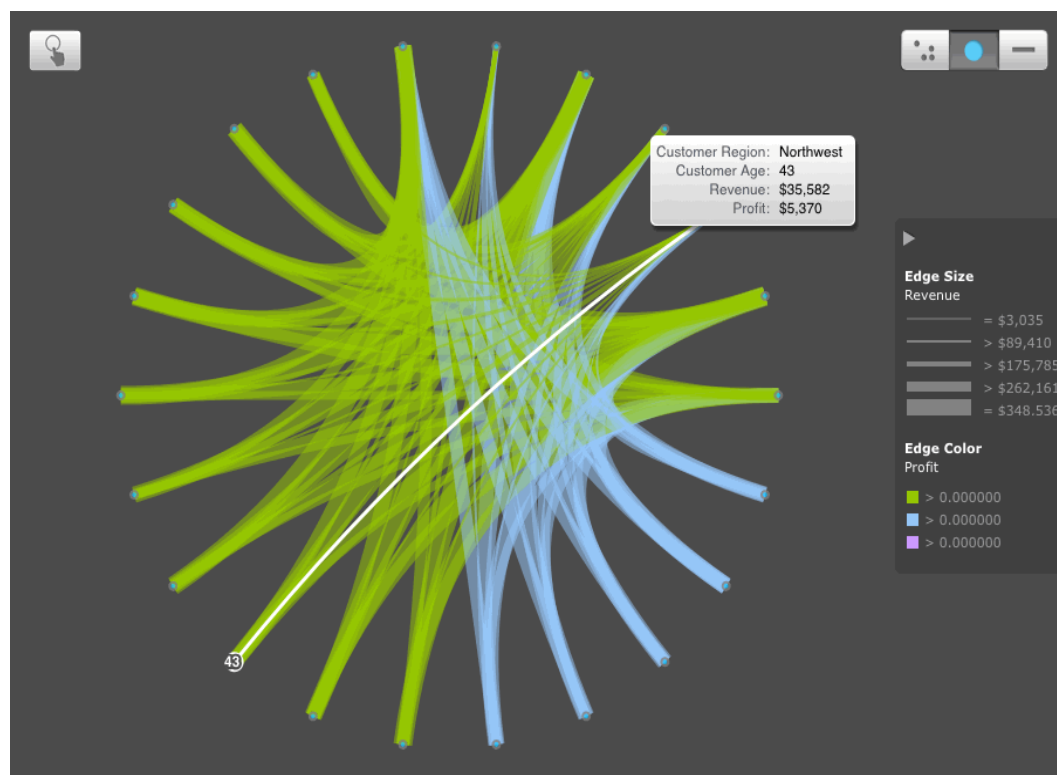
You can perform the following actions on a Network visualization:

- To view information about a node and its relationships to other nodes, tap the node.

- To zoom into the visualization, use the pinch gesture.

- To switch between arranging nodes in a force-directed layout, circular layout, and linear layout, tap **F**, **C**, or **L**, respectively.

- To manually arrange nodes, tap **Select**, and tap and drag nodes to rearrange them.

Analyzing data on a heat map: Heat Map

Some documents may include heat maps, which are visualizations that let you quickly grasp the state and impact of a large number of variables at one time.
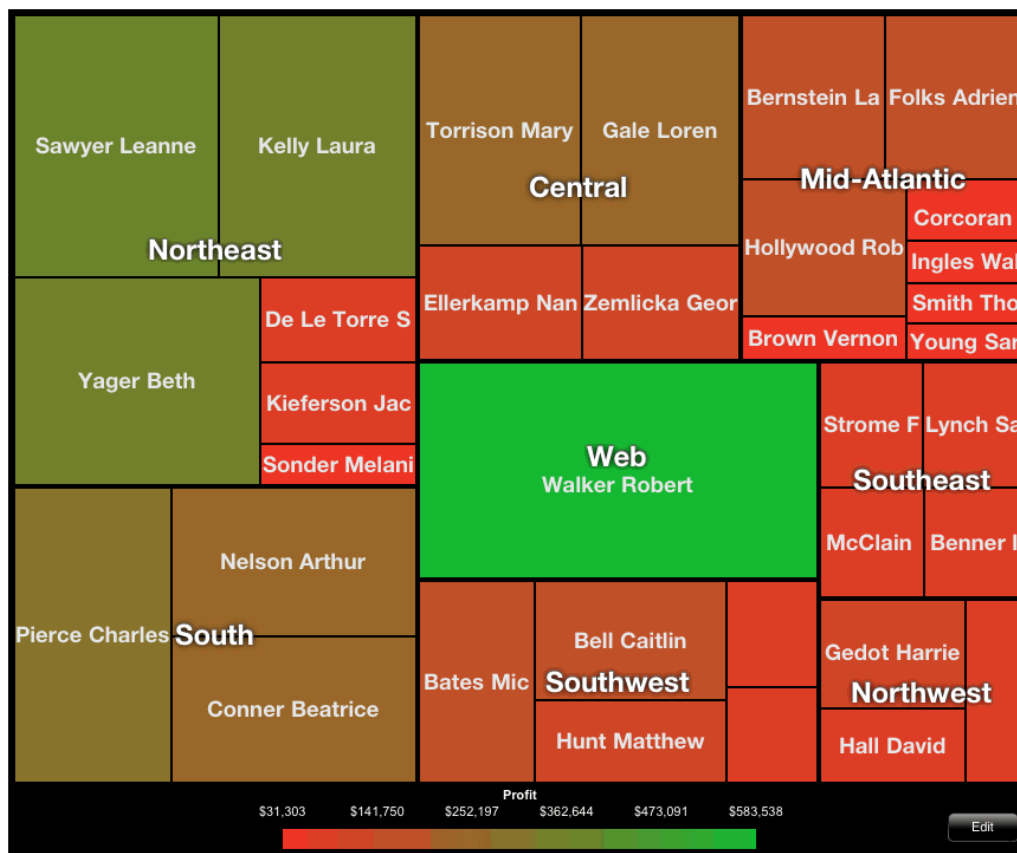
The characteristics of heat maps are described below:

- The size of each rectangle represents its relative weight.

- The color of each rectangle represents its relative value.

- Large areas (displayed with thicker borders) represent different groups of data.

- Small rectangles represent individual elements.

Depending on how the heat map is designed, you may be able to perform the following actions:

- To zoom in or out, perform a pinch gesture.

- To view more information about an element, tap and hold your finger over it.

- You can temporarily delete elements from your view. Tap the **Edit** button, then turn on the **Enable Delete** switch. Tap **Close**.

- To delete an element from the Heat Map, tap and hold your finger over it, then tap **X**.

- To restore deleted elements, tap the **Edit** button. Under Restore elements, tap the elements you want to restore. To restore all elements, tap **All**. When you are done, tap **Restore**.

Analyzing data on a calendar: Date Selection

Some documents may include an interactive calendar that lets you view events for every day of the month in either a Month, Week, or Day view. An example of a calendar in Month view is below:

In the example above, the week starts on Sunday. If your device has a different day specified in the app setting Start Week On, that day will display in your calendar.

Depending on how the calendar is configured, you may be able to perform the following actions:

- Tap an event to view additional information about it.

- Tap **Day**, **Week**, or **Month** for different views of your data.

- Events may be color-coded. To view a legend, tap the **Legend** button ☰.

Analyzing events on a timeline

The Timeline lets you track events or milestones over time. For example, while viewing data for products, you can view milestones for every million units sold, and the state of your business at that point.

The example below shows a Timeline that displays timelines for a set of assets, with markers for events such as the beginning or end of a lease or a new purchase.

Depending on how the Timeline is configured, you may be able to do the following:

- Tap an event to view additional information about it.

- Tap a cell in the left column to view additional information about it.

- Tap the metric headers on the right or bottom to cycle through the available metrics.

Analyzing data overlaid on images: Image Layout

Some documents may include data overlaid on an images as a colored area. For example, a document may contain an image of a store's layout, where each section of the store is a separate colored area.
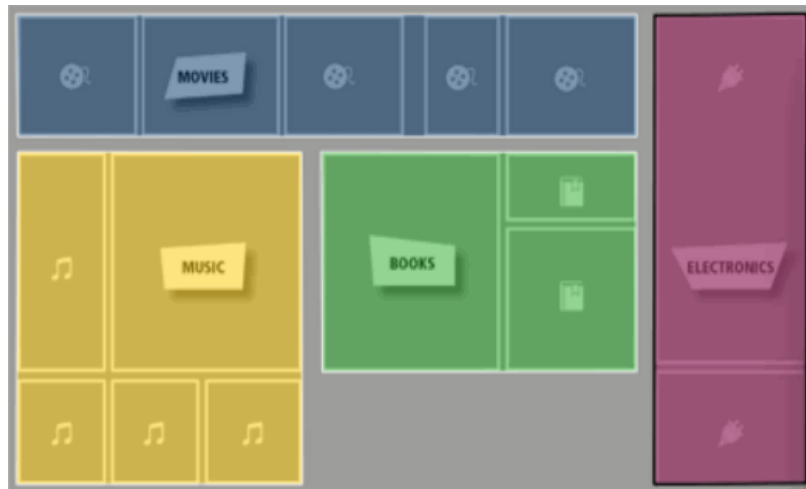
You can view data for separate colored sections on the image. Tap and hold your finger over a bubble or colored area. A tooltip is displayed, with the metrics for that area.

Downloading multimedia files: Multimedia

Some documents may include files that you can download. These files can be of various formats, such as videos, PDFs, ePub files, and so on.
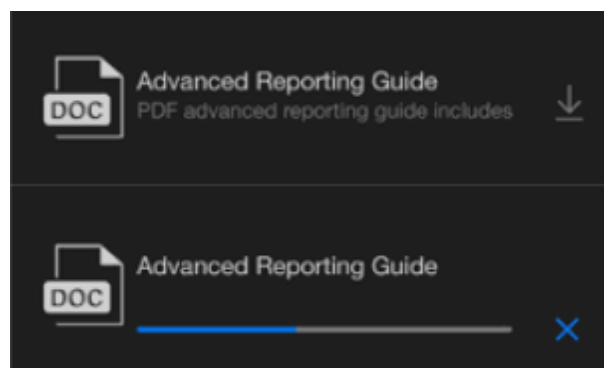
Any new files that were not in a document previously are labeled as New the next time you view or refresh the document, indicating that new content is available.

Depending on how the document was designed, you may be able to do the following:

- To start downloading the file, tap the **Download** icon ⬇. A progress bar shows the status of the download.

- To cancel a download, tap **x**.

- To open a file, tap its icon.

Uploading images to your data warehouse from your camera or photo album

Some documents may allow you to upload images by selecting a photo from your photo album or by taking a picture using your device's camera, if applicable.

To upload images

1. Tap **Add Photo**.

   - If your device has a camera, a menu is displayed, with the option to either take a new photo or use an existing photo.

   - If your device does not have a camera, your photo albums are displayed.

2. To take a new photo, do the following:

   a. Tap **Take New Photo**. The camera opens.

   b. Use the camera to take a photo. A preview of the photo is displayed, with the option to add a caption.

3. To use a photo from your album, do the following:

   a. If your albums are not already displayed, tap **Choose Existing Photo**. A list of the photo albums on your device is displayed.

b. Navigate to the photo you want to upload, and tap its thumbnail. The Choose Photo screen is displayed.

c. If you want to select a specific area of the photo to use, pinch to zoom into the photo, and drag on the photo until the area you want is in the center of the frame.

4. When you have selected which area to use, tap **Use**. A preview of the photo is displayed, with the option to add a caption.

5. To use this photo, tap **Use** (if you took a new photo) or **Upload** (if you are using an existing photo), as applicable. To discard this photo and use another, tap **Retake**. The photo appears in the screen.

6. To add more photos, tap the **Add Photo** again, and repeat the above steps. As you select photos, the counter on the top-right of the frame indicates the number of photos you have chosen.

   ℹ️ The number of photos you can upload may be limited by the designer.

7. To upload all the photos, tap **Submit**. The photos are uploaded, and depending on the document's configuration, a confirmation may appear.

Browsing a gallery of images: Image Viewer

Some documents may include a gallery of images, which you can browse to view different images.

Depending on how the gallery is designed, you may be able to do the following:

• Swipe left or right to navigate between images.

• Tap an image to make it fill the screen.

Playing videos: Video Player

Some documents may include an embedded video that you can view. Tap **Play** to begin the video.

If a local copy of the video was cached on your device, you can view the video whether or not the device is connected. While your mobile device is online, the video can be downloaded or streamed.

In order to view streaming videos when the mobile device is offline, ensure that the video is fully downloaded while the mobile device is online. By default, the video file is discarded when you close the MicroStrategy Mobile application. Your administrator can ensure that streaming videos are downloaded and stored on the mobile device for offline use. Steps to do so are provided in the MicroStrategy Mobile Administration Help.

Using interactive dashboards on an iPad

Some dashboards may be interactive so you can actively explore business data on an iPad. You can add or remove attribute elements from a visualization to change your the data you are viewing. An example of a dashboard is shown below.
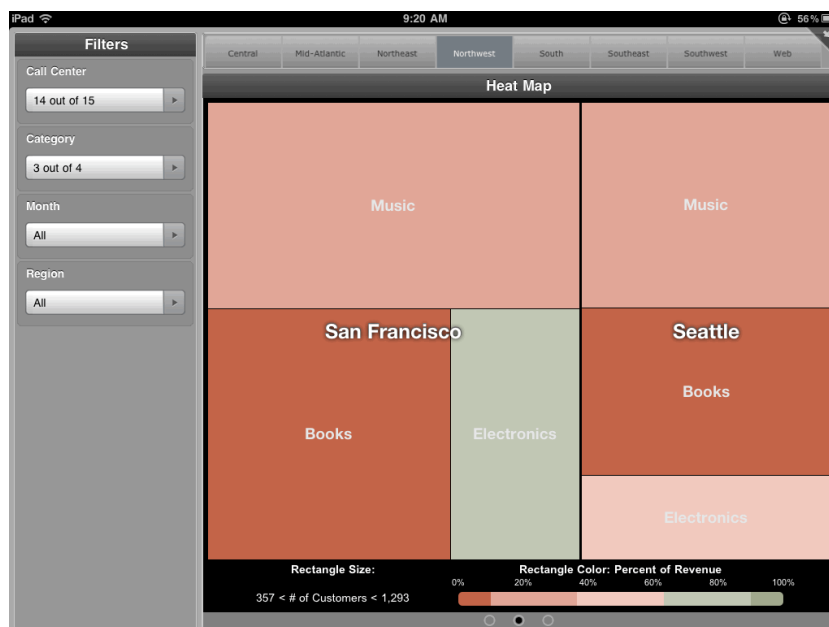
When you run a dashboard, it is displayed as a grid, graph, or a collection of one or more visualizations. Depending on how the dashboard is designed, you may be able to do the following:

- If more than one visualization is available, swipe to the left or right to navigate between visualizations.

- Use the drop-down lists in the Filters pane to include or exclude attribute elements from the dashboard.

- Use the page-by bar at the top to view different groupings, or pages, of data.

- If more than one visualization is available, tap an attribute element in one visualization to filter the display of other visualizations.

- If more than one visualization is available, tap an attribute element in one visualization to highlight matching attribute elements and metrics in other visualizations.

You can also display your dashboard on an external display using AirPlay Mirroring, which allows you to show your iPad's screen on an external display. The requirements are:

- An iPad, connected to a Wi-Fi network.

- An Apple TV®, connected to the same Wi-Fi network.

- An external display, connected to the Apple TV.

For steps to enable AirPlay Mirroring, refer to the following Apple Support article: *http://support.apple.com/kb/HT5209*.

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Getting Started with MicroStrategy Mobile for Android

Introduction

This chapter provides an overview of basic tasks that analysts can perform on an Android phone or table using MicroStrategy Mobile.

The steps and images below are based on the default settings for the MicroStrategy Mobile for Android application. Your interaction with the application depends on the configurations that your administrator has made. For information on customizing MicroStrategy Mobile, see the MicroStrategy Mobile Administration Help.

If you are designing reports and documents for use with MicroStrategy Mobile for Android, see the MicroStrategy Mobile Administration Help.

If you are an administrator planning to deploy and configure MicroStrategy Mobile for mobile device users, see the MicroStrategy Mobile Administration Help.

Prerequisites

- You must have an Android device that meets the MicroStrategy Mobile system requirements. For an up-to-date list of these requirements, see the MicroStrategy Mobile Readme.

- You must have the following privileges:

- Use MicroStrategy Mobile, for all projects containing reports or documents that you want to view

- Mobile View Document

  For information on privileges, contact your administrator.

Getting started with MicroStrategy Mobile for Android

It is recommended that you install the MicroStrategy Mobile application sent to you by your administrator.

To start using MicroStrategy Mobile on your device, tap the MicroStrategy Mobile icon. You may be prompted for your MicroStrategy user name and password.

When the application opens, the MicroStrategy Home screen is displayed. The default Home screen is shown below.
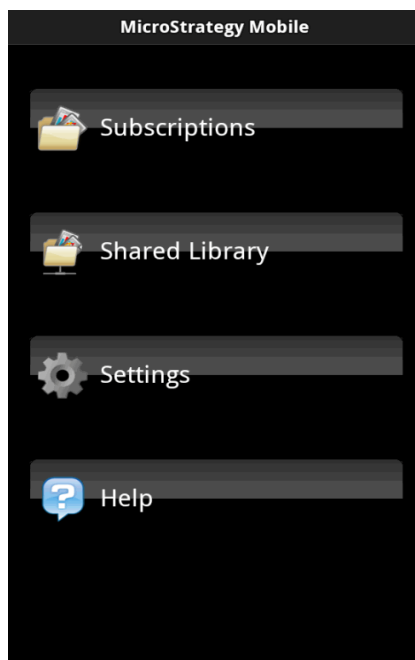
Your Home screen buttons may vary according to how your administrator has configured the Home screen. For information on customizing the Home screen, see the MicroStrategy Mobile Administration Help.

The default Home screen buttons are described below:

- **Subscriptions**: Displays the reports and documents that you have subscribed to.

- **Shared Library**: Displays the MicroStrategy projects that your device can connect to. Tap a project to display the folders within it. Tap a report or document to run it.

- **Settings**: Allows you to configure the MicroStrategy Mobile servers and projects that you are connected to, and general administrative and display options.

  It is recommended that you configure the application using the configuration URL that you receive from your administrator.

- **Help**: Displays the help for the application.

You can return to the Home screen at any time by tapping the MicroStrategy logo at the top left corner of the screen.

Running and viewing reports and documents

Once you have started MicroStrategy Mobile, you can run and view reports and documents on your device.

This section contains information about the following:

- *Running reports and documents, page 89*

- *Navigating data in a grid or graph report, page 92*

- *Navigating data in a document, page 96*

- *Filtering displayed data: Answering prompts, page 100*

- *Achieving the best response from MicroStrategy Mobile, page 103*

For information about interacting with the data displayed on a report or document, see *Chapter , Analyzing Reports and Documents on an Android device*.

Running reports and documents

You can locate and run a report or Report Services document by browsing to its location within a project. Steps to browse to reports and documents are below.

Once a report is run, you can view the data it displays and manipulate the data to see trends and results for your organization or department.

Locating and running reports and documents

Use the Shared Library button on the default Home screen to browse the folders in a project. You can run reports and documents from the list displayed within the folders by tapping the report or document name. Details are as described below:

- *To run reports and documents on an Android phone, page 89*

- *To run reports and documents on an Android tablet, page 90*

You must have the proper privileges in MicroStrategy to access folders in a project. For information about the privileges that are assigned to you, contact your administrator.

To run reports and documents on an Android phone

1. From the default Home screen, tap the **Shared Library** button, shown below.
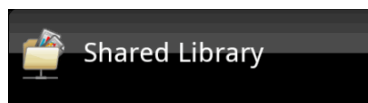
   A list of projects that your mobile device is connected to is displayed.

2. From the list of projects, select the project that you want to browse. The folders within the selected project are displayed.

3. Browse to the folder that contains the report or document that you want to run. A list of reports and documents is displayed. The icon next to the report or document name indicates whether it is a grid report, graph report, or document.

- Grid reports appear with this icon: ▦

- Graph reports appear with this icon: ▥

- Documents appear with this icon: ▦

4. To view the report or document details, tap and hold it. A preview is displayed.

🛈 To run the report or document from the preview, tap **View**.

5. Tap a report or document on the list to run it. The report or document is displayed.

If you are presented with a prompt to answer, see *Filtering displayed data: Answering prompts, page 100* for details to answer each type of prompt.

For information about navigating reports, see *Navigating data in a grid or graph report, page 92*.

For information about navigating documents, see *Navigating data in a document, page 96*.

To run reports and documents on an Android tablet

1. From the default Home screen, tap a project's icon. The folders within the project are displayed.

2. Browse to the folder that contains the report or document that you want to run.

For reports and documents that you have run before, a thumbnail preview is displayed. For reports and documents that you have not run yet, a generic icon appears.

- Grid reports appear with this icon: ▦

- Graph reports appear with this icon: ▮▮

- Documents appear with this icon: ▦

3. Tap the report or document. The description, the date that it was last accessed, and additional information about the report or document is displayed in the right pane.

4. Tap **View** to run the report or document. The report or document is displayed.

If you are presented with a prompt to answer, see *Filtering displayed data: Answering prompts, page 100* for details to answer each type of prompt.

For information about viewing and navigating reports, see *Navigating data in a grid or graph report, page 92*.

For information about viewing and navigating documents, see *Navigating data in a document, page 96*.

Running reports and documents you have subscribed to

All the reports and documents that you are subscribed to appear under the **Reports** tab on the Home screen.

To run reports and documents you have subscribed to

1. From the Android Tablet Home screen, tap **Subscriptions** or tap **Home** on an Android Phone.

2. Tap a report's name to run it.

Running recently opened reports or documents

If you are currently viewing a report or document, you can quickly access one of the other reports or documents that you recently opened.
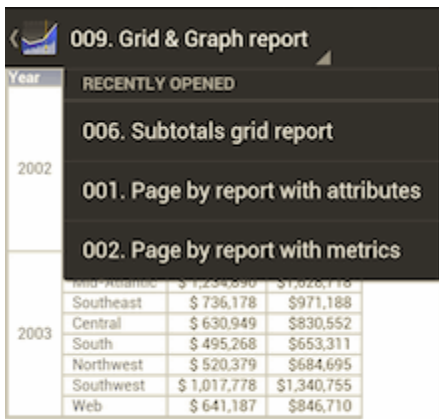
To run reports and documents that you recently opened

1. From an open report or document, tap the report or document title. The Recently Opened menu opens.

2. Tap the name of the recently opened report or document that you want to open.

Navigating data in a grid or graph report

The following actions can be applied to most grid and graph reports after they have been displayed:

- To change the orientation between portrait and landscape, rotate the device.

- To scroll across large reports, swipe the middle of the screen horizontally. To scroll up and down large reports, swipe the middle of the screen vertically.

- To change the group of data that is displayed, tap the **Menu** ⋮ button and then tap **Page-by**. Select the group of data that you want to display.

The following sections show examples of grid and graph reports displayed on an Android device, and steps taken to analyze their data.

Navigating data in grid reports

A grid report organizes business data into rows and columns. The image below shows a grid report displayed on an Android device.

Quarter	Income	Revenue	Profit
2011 Q1	50K-60K	$113,583	$20,170
	60K-70K	$124,788	$22,127
	70K-80K	$90,869	$16,081
	80K-90K	$59,905	$10,617
	90K-100K	$47,188	$8,132
2011 Q2	50K-60K	$132,937	$17,131
	60K-70K	$128,399	$17,131
	70K-80K	$93,420	$12,698
	80K-90K	$83,496	$11,655
	90K-100K	$61,066	$8,690
2011 Q3	50K-60K	$146,964	$23,283
	60K-70K	$138,858	$21,595
	70K-80K	$106,709	$15,987
	80K-90K	$66,498	$9,651
	90K-100K	$67,625	$10,369
2011 Q4	50K-60K	$184,834	$32,741
	60K-70K	$191,719	$33,876
	70K-80K	$133,258	$23,261
	80K-90K	$95,959	$17,415
	90K-100K	$73,951	$12,875

Some reports display special formatting depending upon certain conditions, for example, sales over $1 million, or inventory count below 50.

In the example below, the report shows specially formatted data that has met specific conditions, or thresholds, in the Sales column:

Region	Employee	Metrics	Sales	Rank by Region
Northeast	Sawyer	Leanne	$302,400	1
	Kelly	Laura	$278,238	2
	Yager	Beth	$263,247	3
	Kieferson	Jack	$62,033	4
	De Le Torre	Sandra	$61,801	5
	Sonder	Melanie	$40,269	6
Mid-Atlantic	Bernstein	Lawrence	$138,064	1
	Folks	Adrienne	$116,088	2
	Hollywood	Robert	$112,044	3
	Corcoran	Peter	$36,743	4
	Brown	Vernon	$36,545	5
	Ingles	Walter	$34,064	6
	Smith	Thomas	$26,936	7
	Young	Sarah	$24,734	8

To magnify the contents of a cell in the grid, tap and hold the desired cell. The Info Viewer appears and displays the cell value, column headings, row headings, and Drill and Link buttons, as in the following example.

If the grid was designed with a drill map for the selected attribute, tap **Drill** to view the drill options. If the grid was designed with a link for the selected attribute, tap **Link** to open the link.

Viewing graph reports

Graph reports present data visually in a style such as a bar, line, or pie graph. The images below provide examples of graph reports displayed on an Android device.
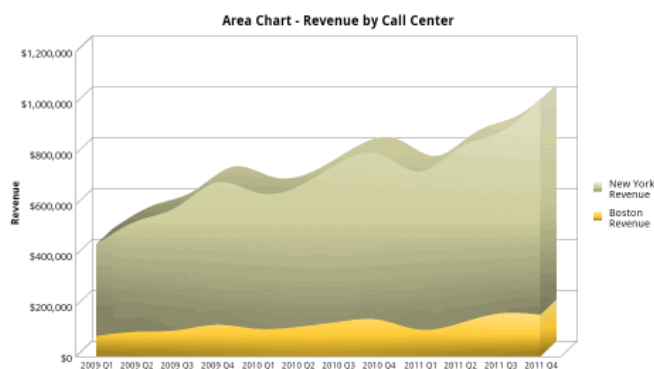
Tooltips provide information such as the value of a specific data point, the name of a group, or the label of a graph's X-axis. To view tooltips to explain parts of a graph, such as a single bar in a bar graph, tap and hold on the screen. An example of a tooltip in a stacked bar graph is shown below:
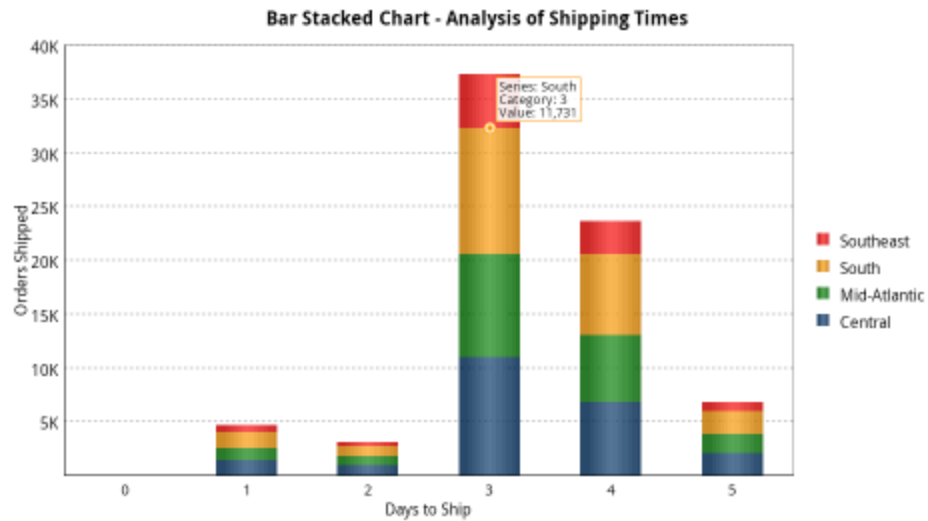
Navigating data in a document

Report Services documents generally provide data from multiple reports. They can contain a variety of grids, graphs, interactive visualizations, and text, depending upon their design.

The following example shows a simple document displayed on an Android device.
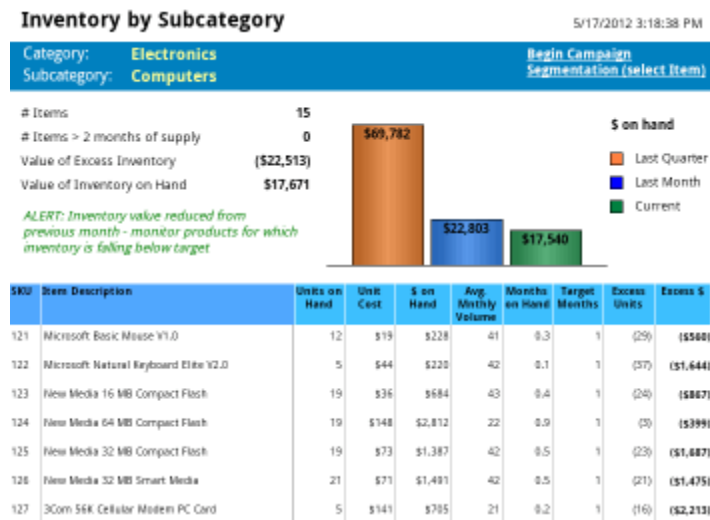
The following actions can be applied to most documents after they have been displayed:

- To change the orientation between portrait and landscape, rotate the device.

- To scroll across large documents, swipe the middle of the screen horizontally. To scroll up and down large documents, swipe the middle of the screen vertically.

- There are several ways to view different groups of data, depending on how the document was designed. You may be able to do one or more of the following:

  - Change the group of data that is displayed by tapping the **Menu** ⋮ button, and then tapping **Grouping**. Select the group of data that you want to display.

  - Swipe horizontally to view different pages (or panels) of data.

  - If a dark bar appears at the bottom of the document (as shown in the image below), tap one of the circles in it to see another group of data.
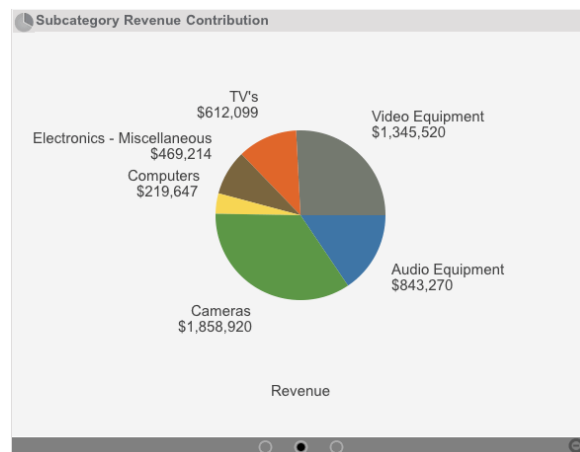
- If a button or link is displayed, tap it to view a different group of data or to access other functionality such as email or a video.

- If tabs are displayed across the bottom of the document (as shown in the image below), tap the tab for the set of data that you want to see.

- From the **Menu** ⋮ button, choose **Layouts**. Select the layout, or group

  of data, that you want to see.

For more information about designing documents for use on mobile devices and which make use of these features, see the MicroStrategy Mobile Administration Help.

Filtering data: Changing the page-by attribute

If your report was designed with a page-by attribute, you can change the page-by to display data at different levels. For example, if Year is a page-by attribute, you can choose to display metric values for a desired year.

To select the page-by attribute for a report

1. Tap the **Page-by** ▢ button. The Page By screen opens.

2. Tap the desired page-by attribute.

3. Select the desired attribute element.

4. Tap back to go back to the Page By screen.

5. Tap **OK**.

Sharing data: sending a screenshot of a report or document

You can share data from MicroStrategy Mobile by sending a screenshot of a report or document by email, text message, and so on.

To share a screenshot of a report or document

1. Tap the **Share** button. The Share via... screen opens.

2. Tap the name of the application to use to share the screenshot. The application opens.

3. Select recipients and deliver your content using the selected application.

Annotating reports and documents on an Android Tablet

You can add annotations, such as comments and freehand drawings, to a screenshot of your dashboard, and share the annotated screenshot with your contacts. The steps to annotate and share a screenshot follow.

To annotate and share reports and documents on an Android Tablet

1. In MicroStrategy Mobile, open a report or document you want to annotate and share.

2. In the top-right corner, tap the **Annotate** button. The Annotate menu and a screenshot of the dashboard open.

3. You can annotate the screenshot in the following ways:

- To draw shapes freehand, click **Freehand Drawing** ✏️ and use your finger to draw.

- To change the color of your drawing, tap the drawing, tap **Color** 🎨, and select the desired color.

- To delete a drawing, tap the drawing and then tap **Delete** 🗑️ .

- To add a comment anywhere in the screenshot, tap **Add Comment** 💬 . Type your comment in the box.

- To move the comment box, tap, hold, and drag the box around the screen.

- To resize the comment box, tap, hold, and drag the corners of the box.

- To edit the text in a comment box, tap the box and then tap **Edit** 🅰️.

- To delete a comment box, tap it and then tap **Delete** 🗑️ .

To share the annotated screenshot, tap the **Share** ⬤ button and select the desired sharing medium.

Filtering displayed data: Answering prompts

Some reports and documents request your input to define what data is displayed. A report or document requests this information by displaying one or more prompts. When you provide an answer to a prompt, you define the data you want to see.

Answering different types of prompts

How you answer a prompt differs depending upon the type of prompt you are answering. The following table lists the types of prompts and how to answer

each one.

Type of Prompt	Answering the Prompt
Calendar	To select a date, tap it. To select a range of dates, tap and hold the start date, and drag until the end date.
Text prompt	Tap inside the text box to begin typing an answer.
Numerical slider	Drag the slider to choose a value.
Numeric stepper	Tap the plus or minus button to select a value.
On/Off switch	Tap the box to select it and turn it on. Tap the box again to clear the check mark and turn it off.
Location	Tap the button to use your current location. You are prompted for permission to use your location.
Barcode	To scan a barcode or QR code, tap the barcode icon, and use your device's camera to scan a barcode. To manually enter a barcode, tap the prompt name, and then type the number that corresponds with the barcode or select from a list of barcodes.
Selections from a list	To add an item to the list, select the item's check box. To remove an item from the list, clear the item's check box. If the list of items is long, you can scroll through the list.
GPS Prompt	To insert your current location in the GPS Search field, tap the GPS icon. To select from a list of locations, tap the prompt name.

Using the Prompt Summary screen

The Prompt Summary screen displays a variety of information about the prompts associated with a report or document. This screen is displayed if one or more of the following conditions are met:

- • The report or document contains more than one prompt

- • The answer that you provided does not meet the prompt's requirements

- • A prompt requires you to turn a switch on or off, select a number, or type in a text box

The Prompt Summary screen displays each prompt's name, description, and the answers that you have provided.

You can change your prompt answers before running the report or document. To do so, on the Prompt Summary screen, tap the prompt's name that you want to revise. This opens the prompt screen for that prompt.

To clear a date/time answer on the prompt summary screen, swipe the prompt answer from left to right.

If the prompt's answer requirements have been met, tap **Run Report** or **Run Document** to run the report or document.

Filtering data: Changing your prompt answers

Some reports and documents may allow you to change your prompt answer to display different subsets of data without having to re-execute the report.

To change prompt answers on a report or document

1. Tap the **Filter** button. The Prompt Summary screen opens. On Android tablets, the Prompt Summary pane opens to the left of the report or document.

2. Change the prompt answers as necessary. For steps to answer each type of prompt, see *Filtering displayed data: Answering prompts, page 100*.

3. Tap **Run Report** or **Run Document**. The report or document is re-executed, using the new prompt answers that you provided.

Achieving the best response from MicroStrategy Mobile

The speed at which your list of reports and documents is retrieved and reports and documents are refreshed depends on several factors:

• Your mobile service provider

• The time at which you are accessing the reports and documents

The speed at which a report or document opens in MicroStrategy Mobile depends on several factors:

• The amount of usable memory on the mobile device

• The processor speed of the mobile device

• The version of the mobile device

• The size and contents of the report or document

Well-designed reports and documents perform best. For best practices to create reports and documents for use with MicroStrategy Mobile, see the MicroStrategy Mobile Administration Help.

Receiving alerts when data meets certain conditions: Push notifications for Android

You can configure MicroStrategy to send you an alert on your Android devicewhen a metric on a report meets a specific condition. For example, you can choose to receive an alert if the Profit data in a report drops below $50,000. These alerts are called push notifications, and can be received even if the MicroStrategy application is not running. For information on setting up push notifications, see Configuring MicroStrategy Mobile for

Android to Receive Push Notifications in the MicroStrategy Mobile Administration Help.

Enabling and disabling alerts

You enable or disable alerts using your Android's Settings screen.

⚠️ The documentation listed below refers to software produced by third-party vendors and thus is subject to change. MicroStrategy makes no guarantee on the availability or accuracy of third-party documentation.

To enable or disable push notifications

1. Open your Android's Settings screen.

2. Open your Android's **Notification Center**. The Notification Center page opens, with a list of applications that can send you alerts (push notifications).

3. Tap **MicroStrategy**.

4. Turn the **Show in Notification Center** switch on or off.

5. If you have enabled notifications, configure the push notifications, as described in the following steps:

   a. Choose an **Alert Style** from the list:

   • **None**: No alerts are displayed for push notifications.

   • **Banners**: Display at the top of the screen. Tap a banner to open MicroStrategy Mobile. If you ignore the banner, it will close automatically.

   • **Alerts**: Display as a pop-up window . Tap a button to open MicroStrategy Mobile or close the alert.

6. Push the Home button to return to the Home screen of your Android device.

Analyzing Reports and Documents on an Android device

Introduction

This chapter describes ways to analyze data in a MicroStrategy report or document using MicroStrategy Mobile on an Android phone or tablet.

After you run a report or document in MicroStrategy Mobile, you can view data at different levels, view a subset of data, and interact with some of the displayed data and certain features of the document. You can also follow links to display different reports or documents, or send email or place phone calls.

This chapter assumes you are familiar with the information provided in *Chapter , Getting Started with MicroStrategy Mobile for Android*.

This chapter provides details to perform the following:

- *Viewing data at different levels using drilling, page 107*

- *Analyzing data using links, page 109*

- *Using documents to send or update data in your data warehouse: Transaction Services, page 115*.

- Analyzing data with widgets:

  - *Analyzing data in a table: Interactive Grid widgets, page 110*

  - *Analyzing data on a map: Map widgets, page 112*

  - *Analyzing trends at a glance: Microcharts widget, page 113*

- *Analyzing data on a time-based graph: Time Series widgets, page 114*

- *Uploading images, page 116*

- *Viewing images, page 118*

Viewing data at different levels using drilling

Some MicroStrategy reports and documents allow you to view information at multiple levels. For example, a report displays data at the year level by default, but can also display data by quarter or month. If a report or document lets you drill to other levels, the Drill option appears in bold in the Info Viewer, as shown in the following image.

In the example above, tapping and holding **Nov 2009** displays the Info Viewer for that month. To view the drill options for Nov 2009, tap **Drill** in the Info Viewer.

When you drill, and then navigate back to the initial report or document, the group-by, page-by, and layout settings that were selected in the initial report or document are preserved.

To perform the default drilling action for an object in the grid, tap it. For an introduction to drilling concepts, see the Basic Reporting Help.

Analyzing Hierarchy Reports

Unbalanced hierarchies are hierarchies with branches that descend to inconsistent levels. For example, in an Employee hierarchy, different parts of the organizational structure will have more management levels than others.

Many organizations have aspects of their business that are organized in unbalanced hierarchies. Besides the Employee hierarchy, other typical examples include a chart of accounts, complex product portfolios, and multinational geographic groupings.

Hierarchy Reports are a class of reports in which the data is naturally organized and presented in a hierarchical structure. Hierarchy Reporting features treat hierarchies as a first-class citizen, and make interacting with entire hierarchies intuitive and efficient. Both balanced and unbalanced hierarchies may be represented in a hierarchy report, although unbalanced hierarchies benefit the most from Hierarchy Reporting features.

Hierarchical Attributes

To facilitate the building of hierarchy reports, there is a new type of attribute: the hierarchical attribute. The hierarchical attribute represents an entire hierarchy and all its levels. For example, you may have a Time hierarchical attribute that represents the Time hierarchy, including its levels Year, Quarter, Month, and Day. In contrast, a normal attribute usually represents a single level of a hierarchy (for example, Year). The hierarchical attribute appears on a grid, filtered, and sorted, much like a normal attribute.

Navigating Hierarchy Reports

Navigate through the hierarchy by expanding and collapsing the hierarchical attributes using the plus (+) and minus (-) icons. You can also tap the cell directly above the top level of the hierarchy and choose **Expand/Collapse** >**Expand All** or **Collapse All**.

Sorting Hierarchy Reports

When a report with a hierarchical attribute is sorted, the structure of the hierarchy remains intact, so every element retains its parent in the hierarchy tree. Each level of the hierarchy is sorted separately from the other levels.

To sort on a hierarchy or a metric, tap the cell directly above the top level of the hierarchy and choose **Sort Ascending** or **Sort Descending**.

Filtering Hierarchy Reports

To filter a Hierarchy report, tap the Filter icon to open the Filter panel. Then, tap the filter you want to use. The Filter panel displays the elements of the hierarchy in a tree. Expand or collapse the filters using the plus (+) and minus icons. You can also expand or collapse all of the filters by tapping **Expand/Collapse** >**Expand All** or **Collapse All**.

Analyzing data using links

A link is a connection between the currently displayed MicroStrategy document and another document, a different screen, or another app. When selected, a link can do one of the following:

- Execute another document or report from the currently displayed document.

- Return you to the Prompt Summary screen or the Group-by page for the current report or document.

- Open another application on your device. Documents can interact with the following apps via links:

  - Email

  - Phone

  - SMS (text messaging)

  - Maps

  - Videos

Links in MicroStrategy documents can be displayed as images or text. To follow a link that is displayed in a report or document, tap the linked image or text.

An object that contains a link can also be able to be drilled on. In this case, when you tap the object, a menu is displayed. Select whether to follow the link or to drill on the object.

Analyzing data in a table: Interactive Grid widgets

Data can be displayed in an interactive table as part of an Interactive Grid widget.

An example of an Interactive Grid widget is shown below:

Region	Profit
Northeast	$298,472
Mid-Atlantic	$432,541
Southeast	$254,244
Central	$229,126
South	$177,290
Northwest	$194,137
Southwest	$358,289
Web	$209,602
Northeast	$266,107
Mid-Atlantic	$393,828
Southeast	$235,010
Central	$199,603
South	$158,043
Northwest	$164,316
Southwest	$322,977
Web	$205,523

In this widget, attributes and metric values are displayed in the columns and rows, and grouping appears at the top of the screen. The widget above is grouped by Region.

Other ways to analyze data in a table may be enabled for your document, and include:

- Tapping the metric to switch between metrics, if a report or document contains more than one metric.

- Displaying different groups of data by tapping the **Menu** ⋮ button at the top right corner of the screen, then tapping **Page-By** (for a report) or **Grouping** (for a document) and selecting the group of data that you want to display.

- If drilling is enabled for an object, the object is underlined. Drilling allows you to view data at different layers. Drill on an object by tapping it. For an example, see *Viewing data at different levels using drilling, page 107*.

- Switch between displaying the widget in full screen and non-full screen mode by tapping the **Enter full screen** or **Exit full screen** button.

Analyzing data on a map: Map widgets

Reports and documents can display information based on locations on a map, as shown below:
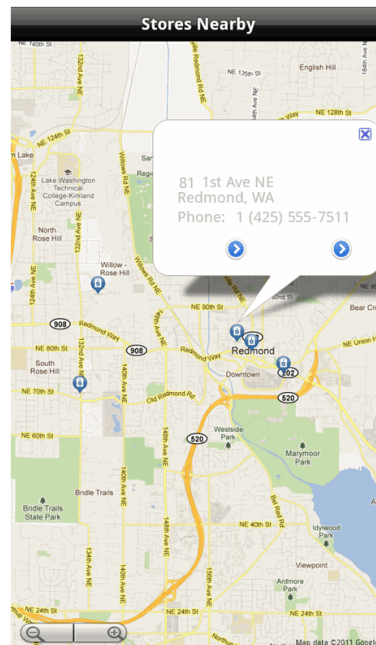
Map widgets can use Geo Location prompts to narrow the map area that is displayed. For example, when you answer the prompt with your current location, a Map widget can show locations that are within a given distance from your current location. For instructions to answer prompts on an Android device, see *Filtering displayed data: Answering prompts, page 100*.

Points of interest can be marked on the map. In the example above, the markers indicate stores in the area. A tooltip is displayed for a specific marker, to provide details about the selected store. To display a tooltip, tap on a marker.

Other ways to analyze data on a page may be enabled for your document, and include:

- Selecting a different metric by tapping the header in the top right.

- If using Android 3.x or higher, zoom by performing a pinch.

- Switching between Map, Satellite, Terrain, and Hybrid views by tapping the **Menu** ⋮ button at the top right corner of the screen, and then selecting the appropriate option.

Analyzing trends at a glance: Microcharts widget

The Microcharts widget lets you visualize trends in a metric's value at quick glance. An example of the Microcharts widget on an Android tablet is shown below:
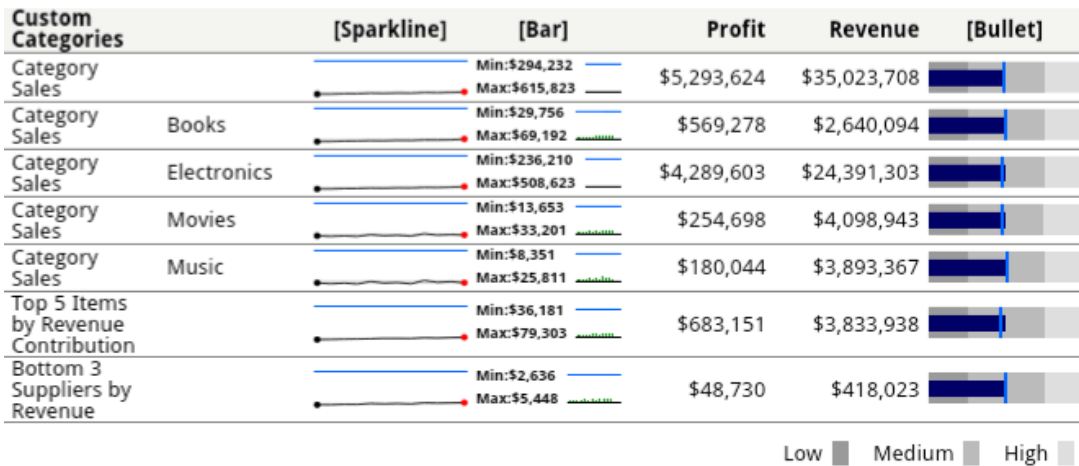
To analyze data with the Microcharts widget

1. To view information about a data point in a graph, tap and hold your finger over it. A tooltip with information is displayed.

2. Drag your finger along the graph to view tooltips for each data point.

3. To expand all of the elements in tree mode, pinch open over the collapsed categories.

4. To collapse all of the elements in tree mode, pinch close over the expanded categories.

Analyzing data on a time-based graph: Time Series widgets

Reports and documents can include a line graph that displays data over a period of time, by using a Time Series widget.
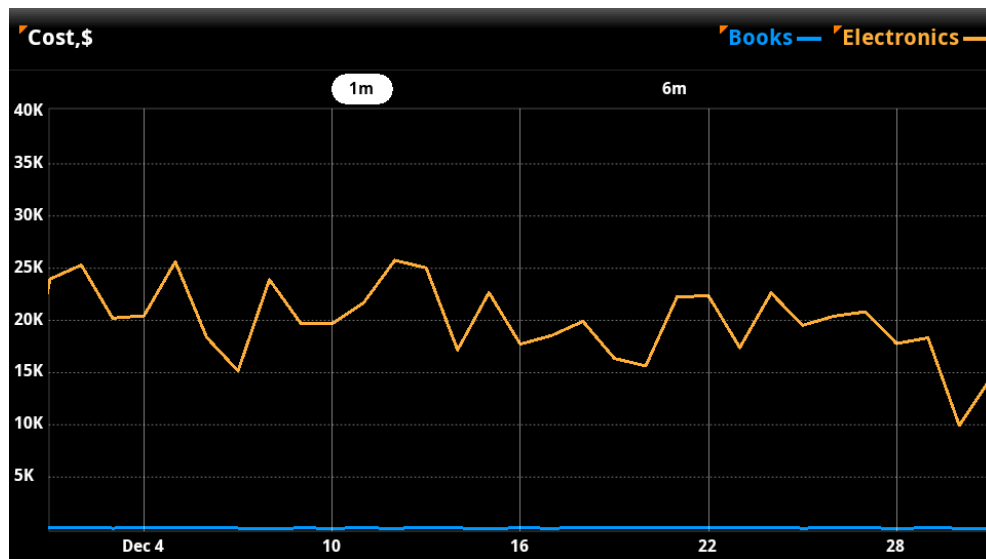
A Time Series widget can contain multiple data series on the same graph. For example, the values for the Cost metric for the Books and Electronics subcategories are displayed in the image above.

Other ways to analyze data on a time-based graph may be enabled for your document, and include:

• Displaying tooltips by tapping and holding on the graph.

• Changing the metric or attribute being displayed by tapping the object. (If you can change the object, a small triangle appears in the top left.)

• Scrolling through the time axis by swiping horizontally, or if you are using a tablet, dragging the highlighted portion of the slider at the bottom.

• Selecting a fixed time period by tapping its header.

- If you are using a tablet, determine the range of values to view by dragging the left or right edge of the slider to adjust its size.

Using documents to send or update data in your data warehouse: Transaction Services

Some documents may include forms that you can use to edit or add information to your data warehouse through Transaction Services. Some examples are documents that approve requests, track business activity, and execute business decisions, directly from your mobile device. Any new data or changes are saved in your data warehouse.

Prerequisites

- You must have the Execute Transaction privilege.

- The document must be a Transaction Services-enabled document.

Depending on how the document is designed, you may be able to manipulate data in the following ways:

- Edit text or numerical values in a text box.

- Use a slider to select from a range of values.

- Select values from a drop-down list.

- Use an On/Off switch to answer Yes or No questions.

- Use a date/time wheel to select a date.

- Once you have made the changes that you want to make, select one of the following options:

  The designer may use different names for the buttons or links described below.

- To preview the results of your changes without updating your data warehouse, tap **Recalculate**.

- To update the data warehouse with the values that you provided, tap **Submit**.

    If you are not connected to the internet, the Transactions Queue button is displayed. Your changes are sent to your data warehouse when a connection is available.

- To undo the changes you have made, tap **Discard Changes**. The document reverts to the values from the last time you submitted data.

To edit pending transactions

1. In the Shared Library, tap the **Menu** button.

2. Tap the Transactions Queue button . The Transactions Queue opens, with a list of pending transactions.

3. To change the values you want to submit, tap a transaction in the queue to select it, and then tap **Edit**.

4. To delete a transaction, tap the transaction in the queue to select it, and then tap **Delete**.

Uploading images

If enabled in the document you are viewing, you can upload images to the document by either selecting an image from your photo album, or by taking a picture using your device's camera. You can display only a specific area of a photo, and you can provide captions for photos that you upload to a document.

To upload images using the Photo Uploader widget

1. In a document with the Photo Uploader widget, tap **Add Photo**.

   - If your device has a camera, a menu is displayed, with the option to either take a new photo or use an existing photo. Follow the steps below to take a new photo or use an existing photo from your album.

   - If your device does not have a camera, your photo albums are displayed. Follow the steps below to use an existing photo from your album.

2. To take a new photo, do the following:

   a. Tap **Take New Photo**. The camera opens.

   b. Use the device's camera to take a photo. A preview of the photo is displayed, with the option to add a caption.

   c. To use this photo in the document, tap **Use**. To discard this photo and take a new one, tap **Retake**.

3. To use a photo from your album, do the following:

   a. Tap **Choose Existing Photo**. A list of the photo albums on your device is displayed.

   b. Navigate to the photo to upload, and tap its thumbnail. The Choose Photo screen is displayed.

   c. Use the pinch gesture to zoom into the photo, and drag on the photo to select which area to use.

   d. When you have selected which area to use, tap **Use**. A preview of the photo is displayed, with the option to add a caption.

   e. To use this photo in the document, tap **Upload**. To discard this photo and use another, tap **Retake**.

Once you have selected a photo, the counter at the top right of the widget indicates the number of photos you have chosen.

4. To add more photos, tap **Add Photo** again, and repeat the steps above to either take a new photo or use a photo from an album.

5. After you have added all the photos, upload them by tapping **Submit**. Depending on the document's configuration, a confirmation may appear.

Viewing images

Some documents may include a browsable series of images. In these documents, you can swipe left or right to navigate between images, and tap an image to make it fill the screen.

Designing Reports and Documents for Mobile Devices

This chapter contains steps to design reports and dashboard-style documents in MicroStrategy Web, for display and use on mobile devices such as iPhones, iPads, and Android-based phones and tablets. These can be standalone documents or documents that are part of a mobile app. This chapter also contains best practices for designing reports and documents that perform well and are easy to use. The following topics are covered:

- *Best practices for designing reports and documents for mobile devices, page 120*. Designing a MicroStrategy report or dashboard-style document that is viewed on iOS and Android devices requires the use of device-specific document features. This section discusses best practices for using these features.

- *Creating documents for mobile devices, page 127*. This section describes the ways in which you can design dashboard-style documents for iOS- and Android-based devices, and to use features specifically designed for these devices.

- *Allowing users to filter data: prompts, page 173*. A prompt is a question that the system presents to a user when a report is executed. The user's answer determines the data that is returned by the report. Specific prompts can be added to a report for use on a mobile device that has the MicroStrategy Mobile application.

- *Allowing users to filter data using filter panels, page 190*. You can create a panel of selectors in a dashboard-style document that acts as a filter panel, where users decide what data in the document is displayed by making selections in the panel.

- *Organizing transactions with tables on iOS devices, page 191*. A user can interact with data and send those interactions back to the data source. For example, a user can add a new customer contact name and details while on-site with the customer, and send the new data back to be recorded in the data source immediately. Transactions allow users to make decisions and write back to the data source. If you have multiple input object controls on a document displayed on an iOS device, you can create a transaction table to group and organize the controls.

Prerequisites

- This chapter assumes that you know the nature and structure of your company's data, which users will analyze in business intelligence reports and documents.

- This chapter assumes that you are familiar with designing MicroStrategy reports and documents and have the necessary privileges to do so.

  For information on designing MicroStrategy reports, see the Basic Reporting Help. For information on designing dashboard-style documents, see the Document Creation Help.

Best practices for designing reports and documents for mobile devices

Designing a report or dashboard-style document that is viewed on iOS and Android devices requires the use of device-specific document features. This section discusses best practices for using these features.

Best practices for enhancing performance on a mobile device

- Keep the report or document as focused as possible, by providing only the objects necessary for an effective analysis.

- Consider using Intelligent Cubes to provide historical or trend data in your documents. For background information on Intelligent Cubes, and instructions to create reports based on Intelligent Cubes, see the In-memory Analytics Help.

- To let users display subsets of data, group data in a document using features such as page-by. Accessing a cached report or document that has multiple pages is faster than re-prompting the report or document, which resubmits the job to the Intelligence Server.

Best practices while planning reports and documents

- Sketch the documents you will use in your app and outline how users will navigate between them. If you are creating an app for both tablets and mobile phones, you may want to create multiple diagrams for your app, one for each screen size. Diagramming the documents and links that need to be created allows you to identify:

  - If you are creating an app that uses an existing dashboard-style document, whether the content in that document needs to be reorganized to suit a smaller screen.

  - If you are creating an app with documents that contain a large amount of data, consider splitting each document into multiple, smaller documents to reduce loading time. You can then use links to allow users to switch between the documents.

  - The navigation tools you must include. For example, you can include a tab bar on the bottom of every document that links users to other documents or you can allow users to navigate through documents by swiping right or left. For descriptions of the navigation tools you can use, see *Chapter , Using links in documents*.

  - If users must tap on or swipe across an object, the size of those objects. In general, objects that users are meant to tap on should be at least 30 pixels wide and 30 pixels tall. For best results, make the objects larger,

around 45 pixels wide and 45 pixels tall.

- If you are creating an app or a document that links to other documents, the order in which these documents must be built. Links must be created after the document they target has already been created. For instructions on creating links in mobile documents, see *Chapter , Using links in documents*.

- Where duplicate functionality exists. If two documents display different data with the same formatting, you may be able to create one document, duplicate it, and change the datasets to save development time.

- The datasets that are needed. One dataset can frequently supply data to multiple documents, which can speed up development and reduce cache sizes on the Intelligence Server.

- Any user interactivity you may want to include, such as widgets for data visualization or changing the appearance of the app when the mobile device is oriented in landscape mode instead of portrait.

- Consider the mobile device you are designing for:

  - Create your documents using fonts that are available on the device.

  - Ensure that the document displays correctly on the mobile device by defining the display properties, available in the Properties dialog box. These properties include optimizing the layout for display on a device, and whether the page-by bar and re-prompt icon are displayed. For descriptions of these properties, see *Creating documents for mobile devices, page 127*.

  - Consider the size of the device's screen when building your reports. Although users can scroll through data, reports with fewer metrics improve performance and are usually easier to read. In addition, take advantage of the larger screen size available on tablet devices.

- Design documents for tablets such that users can view all the data in a single screen without panning. If more data must be displayed than will fit on one screen, consider using panel stacks to arrange the data such that the user can navigate by swiping or using selectors.

- To take advantage of the high-resolution screens on newer iOS devices, consider using large images in your documents.

  > If the documents are for both older and newer mobile devices, add the suffix `@2x` to the image's file name. This ensures that the image is appropriately resized for older devices. For example, use `http://example.com/image@2x.png`. For devices with high-resolution screens, such as the iPhone 6 Plus and newer, use the suffix `@3x`.

- In documents for tablets, use Information Windows to show users additional information about an attribute element they select. For information on creating Information Windows, see *Providing additional information to users: Information Windows, page 149*.

- In documents for tablets, use the Interactive Grid widget adjacent to a panel stack, and use the Interactive Grid as a selector that targets the panel stack. This allows users to view additional information without linking to a new document.

- In general, use at least 13-point size font. Font sizes that are greater than or equal to 13-point font are easier for readers to view.

- Images are easier to manage if they are hosted on a web server, and referenced using HTTP or HTTPS URLs. That way, if you need to migrate images across environments, you do not need to change the URLs for the images.

  An example of an HTTP URL to an image is `http://example.com/folder/image.png`.

- You can configure the mobile apps to pre-cache reports, documents, or dashboards, so that they are available to users if they are offline. If the reports and documents contain images, to ensure that the images are pre-cached, store the images on both your Mobile Server and Intelligence Server machine. By default, the folders that you can store your images in are:

  - Mobile Server: `C:\Program Files\MicroStrategy\Mobile Server ASPx\Images`

  - Intelligence Server: `C:\Program Files\MicroStrategy\Intelligence Server\Images`

  When you add the images to your documents or dashboards, use relative paths for the image's location, for example, `.\images\mobile_example.png`.

- If the data in your document is frequently updated, you can have the document periodically refresh itself as it is being displayed on a mobile device. For steps, see *Enabling automatic refresh for documents, page 143*.

- In a Transaction Services document, you can submit a unique ID for a specific mobile device, using the Mobile ID prompt. This allows you to keep track of which mobile devices are creating which records. You can filter the transaction date by Mobile ID.

  The Mobile ID prompt is a system prompt, which is a special type of prompt that does not require an answer from the user. Instead, it is answered automatically by Intelligence Server. System prompts are located in the `Public Objects/Prompts/System Prompts` folder in Developer. For background information on system prompts in general, see the System Administration Help.

- Use the docked panel selector to display visualizations grouped on panel stacks. For information on creating docked panel selectors, see *Allowing*

users to easily switch between panels: docked panel selectors, page 146.

- For reports with data grouped by an attribute in the page-by pane, you can choose to display the report on an iPad as a book with a separate page for each attribute element. This option, called Enable book-style page-by navigation, is selected by default. For steps to group data in a report, see the Basic Reporting Help.

Best practices while creating reports and documents

- Consider using one of MicroStrategy's pre-designed templates when creating documents for a mobile device. The pre-designed templates take into account the size of the device's screen. For a list of pre-designed templates, see *Creating documents for mobile devices using a template, page 128*.

- Enable drilling to give users the ability to view information at different levels within a single report. Drilling allows users to get more information from one report without having to browse to, and run, other reports.

- When designing graph reports to be used on a mobile device, consider the following:

  - To display tooltips on mobile devices, enable tooltips for the graph series while creating the graph. For steps, see the Basic Reporting Help.

  - To maximize the graph size, move the legend below the graph.

  - The following graph types are supported on Android devices:

    - Bubble

    - Funnel

    - Gauges

    - Horizontal Area

    - Horizontal Bar

- ■ Horizontal Line

- ■ Pareto

- ■ Pie

- ■ Scatter

- ■ Vertical Area

- ■ Vertical Bar

- ■ Vertical Line

  ○ If you must display more information than can fit on one screen, use page-bys to break the graph in logical places across multiple screens.

- When designing grid reports, add padding around the cells to make the data more legible on mobile devices.

- Because Android devices come in varying screen sizes, a document designed for iOS may appear different when viewed on an Android device. To adapt a document's display to an Android device, while leaving the display on an iOS device unaffected, use the following properties to modify the document:

  ○ Use the **Fit Page** or **Fit Width** options to ensure that the document fits to the size of the screen. Before selecting one of these Zoom options on the Home toolbar, optimize the layout for micro applications. For steps, see *Formatting document tabs: layouts, page 137*.

  ○ By default, when the document is displayed on an Android device, any area not used to display the document is rendered in the same color as the background color defined for the document. You can use the Document Fill Color or Layout Watermark to provide a background for any part of the screen that is not used by the rest of the document.

  ○ Manually size the column widths of any grids on a document, rather than using the automatic resizing options.

- Consider using Mobile Views to support different screen sizes, and different orientations of the device. For instructions on using Mobile Views, see *Formatting documents for various screen sizes and different orientations: Mobile Views, page 131*.

- Consider creating documents that include widgets, rather than converting reports to widgets. Certain features, such as Information Windows and network lines for the Map widget, can only be used in documents.

  For steps to create widgets in documents, see *Chapter , Displaying data as interactive visualizations: Widgets*.

- If you are creating an Interactive Grid widget, it is recommended that you assign an action to only one attribute form in the widget. For example, if you want one attribute to act as a selector, ensure that drilling is disabled for the Grid/Graph, and that attributes on the Grid/Graph do not link to other reports or documents.

  For steps to create an Interactive Grid widget, see *Displaying data in rows and columns: Interactive Grid widget, page 222*.

- Consider using links to add interactivity to your document. For example, you can create links that allow users to send an email, make a phone call, or execute related reports and documents. For information and the steps to create links, see *Opening a device's installed applications from documents, page 287* and *Linking to reports and documents from a mobile document, page 294*.

- If you have prompts in a linked-to report, make sure that there are default answers saved for the prompts.

Creating documents for mobile devices

This section describes the ways in which you can design dashboard-style documents for iOS- and Android-based devices, and to use features specifically designed for some devices.

If you are creating an app, you can use dashboard-style documents as the pages and panels of your app and create links on buttons and tab bars in your documents to allow users to navigate to other pages or panels in the app. For steps, see *Chapter , Using links in documents*.

This section assumes that you have created a document with the datasets that you want to analyze. For steps to create a document, refer to the *Report Services Document Creation Guide*.

Creating documents for mobile devices using a template

A document template allows you to start with a predefined structure when you create a new document. You can use several predesigned templates for your mobile documents to help you create documents that are correctly sized for the device's screen, as described below.

The following templates are optimized for display on iPhone and Android smart phones:

- **iPhone Portrait**: This template is designed to be viewed on an iPhone or Android smart phone held in a vertical position. Only the Detail Header section of the document is displayed.

  ○ Width: 6.6 inches

  ○ Height: 9.6 inches, which includes room for the smart phone's status bar

  ○ Supported orientation: Portrait only

  ○ Graph tooltips displayed: Yes

- **iPhone Portrait Micro-Application**: This template is the same as the iPhone Portrait template, except that the Optimize layout for micro application option is selected, preventing users from performing actions such as zooming in or out of the document. This allows you to better control the user's experience and interaction with the document.

- **iPhone Landscape**: This template is designed to be viewed on an iPhone or Android smart phone held in a horizontal position. Only the Detail

Header section of the document is displayed.

- ○ Width: 10 inches. The smart phone's status bar is not displayed in landscape view.

- ○ Height: 6.6 inches

- ○ Supported orientation: Landscape only

- ○ Graph tooltips displayed: Yes

- **iPhone Landscape Micro-Application**: This template is the same as the iPhone Landscape template, except that the Optimize layout for micro application option is selected, preventing users from performing actions such as zooming in or out of the document. This allows you to better control the user's experience and interaction with the document.

- **iPhone Map Information Window**: You can define an Information Window for a Map widget to be displayed on an iPhone or Android smartphone, to display additional information when a user taps a map marker in the widget. Use this template to create a document layout for use as an Information Window. For detailed steps, see *Using a layout as an Information Window in a Map widget, page 238*.

- ○ Width: 3 inches

- ○ Height: 2 inches

The following templates are optimized for display on iPad and Android tablets:

- **iPad Portrait**: This template is designed to be viewed on an iPad or Android tablet held in a vertical position. Only one section of the document is displayed.

- ○ Width: 8 inches

- ○ Height: 10 inches, which includes room for the tablet's status bar

- ○ Supported orientation: Portrait only

- **iPad Landscape**: This template is designed to be viewed on an iPad or Android tablet held in a horizontal position. Only one section of the document is displayed.

  - ○ Width: 10.67 inches

  - ○ Height: 7.33 inches

  - ○ Supported orientation: Landscape only

For documents displayed on an iOS device, you can create a navigation document, which contains only a tab bar. A tab bar displays a series of buttons, which users can tap to navigate through the documents in your app. Use the following templates to create a navigation document. For steps and examples, see *Linking from documents with buttons and tab bars, page 316*.

- **Navigation for iPad**: This template is designed to create a navigation document for iPads.

- **Navigation for iPhone**: This template is designed to create a navigation document for iPhones.

Formatting documents for mobile devices

You can ensure that the document displays correctly on mobile devices by defining the display properties, such as whether the document layout is optimized for mobile phones, and whether the page-by bar and re-prompt icon are displayed.

You can format the display properties at the following levels:

- For each Mobile View. You can create Mobile Views to define how your document appears on different devices, and for different orientations of the device. For example, you can size a graph so that it takes up less

vertical space when displayed in landscape orientation on a device. For instructions to define Mobile Views, see *Formatting documents for various screen sizes and different orientations: Mobile Views, page 131*.

- In multi-layout documents, for each document layout. For descriptions of the layout display properties, see *Formatting document tabs: layouts, page 137* and *Disabling swiping between layouts in iOS documents, page 140*.

You must use MicroStrategy Web to define these properties. For instructions, see the steps below.

Formatting documents for various screen sizes and different orientations: Mobile Views

You can specify how to display documents on iPhone, iPad, and Android devices by using Mobile Views. Mobile Views allow you to quickly and easily determine how the elements of a document are displayed in the following scenarios:

- When users rotate their devices. For example, you can resize a graph to take advantage of the extra horizontal space when the device is held in landscape orientation, or rearrange the controls on the document to accommodate the extra vertical space when the mobile device is held in portrait orientation.

- When users access the same document from different devices, which may have different screen sizes. For example, you can size text to take up less room on a mobile phone in one Mobile View, or enlarge an image to fit a tablet in another Mobile View. The document is automatically displayed using the Mobile View that most closely matches the height and width (resolution) of the device's screen.

- When users access the same document on different iPhone versions, which have different screen sizes. You can create a view for each device,

with the corresponding layout height. The objects on each layout can have different sizes and positions.

When you use a Mobile View, controls in the document keep the same basic settings when displayed in different Mobile Views. For example, a selector containing a list of regions targets a graph displaying revenue data. If the user selects the Southeast region from the selector, revenue information for Southeast is displayed in the graph. When the user rotates the mobile device and the document is displayed using a different Mobile View, Southeast remains selected and the data displayed in the graph is unchanged.

Parameters you can change in Mobile Views

Once you have added a Mobile View to a document, you can do the following:

• Display a preview of the Mobile View in Design Mode or Editable Mode in Web.

• Edit controls in the Mobile View. You can edit the following options for a control independently in each Mobile View:

> Editing any option that is not included in the list below also edits this property for all other Mobile Views in the document. For example, if you change the background color of a document section to green in one Mobile View, the section is displayed as green in all other Mobile Views.

• The position of the control in the document

• The height and width of the control

• The height of the control's title bar (for Grid/Graphs, panel stacks, and selectors)

- Whether the control is hidden. You can determine whether a control will be visible when the Mobile View is displayed on a mobile device. All controls in the document must be included in each Mobile View you define. However, you can hide a control in an individual Mobile View to prevent it from being displayed when the document is viewed on a mobile device. For steps to determine whether a control is visible, see the Document Creation Help.

  For example, you want to create two Mobile Views, but only want to display a specific grid in the Mobile View for a single mobile device. You must hide the grid in the Mobile View in which you do not want the grid to be displayed.

  - Whether the height and width of the control are automatically determined or are fixed at a specific size

  - The height of a document section

  - Whether a document section can grow or shrink to fit its contents

  - Whether to hide a document section if it has no content

- Show or hide all controls in the document in Design Mode, regardless of whether they are shown when the document is displayed on a mobile device.

By default, the mobile device tries to display a document using the Mobile View that matches the exact height and width of the device's screen. If there is more than one Mobile View with the same height and width as the mobile device's screen, the first of these Mobile Views, as listed in the Manage Views Editor, is used. Otherwise, the mobile device displays the Mobile View whose width most closely matches the width of the mobile device's screen.

Using Mobile Views with multi-layout documents

Documents can contain multiple layouts. When you create a Mobile View, it is automatically available to every layout in the document.

For example, a multi-layout document contains three layouts. If you create a Mobile View to determine how the document is shown on an iPhone, you must edit the controls in each layout to define how the layouts will be displayed. You can use the Orientation option for Mobile Views in conjunction with the Supported Orientation option for document layouts to determine how a mobile device chooses the best Mobile View to use to display a document layout, as follows:

- If the Supported Orientation of the document layout is set to Both Portrait and Landscape, the document layout is displayed using the Mobile View that most closely matches the height and width of the mobile device, as well as the orientation in which the mobile device is held.

  For example, if the mobile device is held vertically, the mobile device attempts to display the document layout using the Mobile View that has Orientation set to Portrait or Portrait and Landscape, and most closely matches the height and width of the device. If only Mobile Views designed to be displayed in landscape orientation have been defined for the layout, the mobile device chooses the best Mobile View from among those defined and rotates the Mobile View to be displayed vertically, to match the orientation of the mobile device.

- If the Supported Orientation of the document layout is set to either Portrait Only or Landscape Only, the document layout is displayed using the Mobile View that most closely matches the height and width of the mobile device, as well as the Supported Orientation of the layout.

  For example, if the Supported Orientation is Portrait Only, the mobile device attempts to display the document layout using the Mobile View that has Orientation set to Portrait or Portrait and Landscape, and most closely matches the height and width of the mobile device. If only Mobile Views designed to be displayed in landscape orientation have been defined for the layout, the mobile device chooses the best Mobile View from among those defined and displays the Mobile View vertically, to match the Supported Orientation of the document layout. The Mobile View is locked to the same orientation as the Supported Orientation

option, meaning that if the Supported Orientation is set to Portrait Only and a Mobile View is displayed vertically on the mobile device, the orientation of the layout as displayed on the mobile device remains the same and does not rotate regardless of whether the user rotates the mobile device.

> When a document is viewed on the iPhone, the Supported Orientation option determines which layout is displayed on the mobile device. The mobile device then determines the best Mobile View to use to display the layout. For more information on the Supported Orientation setting, see the *MicroStrategy Web Help*.

To define a Mobile View in a document

1. In MicroStrategy Web, open the document in Design Mode or Editable Mode.

2. From the **Tools** menu, select **Manage Views**. The Manage Views Editor opens.

   > A default Mobile View is automatically displayed in the list of Mobile Views, and cannot be deleted.

3. Click the **Duplicate** icon next to an existing Mobile View. A new Mobile View is automatically created.

4. In the **Name** field, type a name for the new Mobile View.

5. Under the **Resolution** column, specify the height and width of the mobile device screen on which to display the Mobile View, as follows:

   a. In the first field, type the width, in pixels, of the device screen.

   b. In the second field, type the height, in pixels, of the device screen.

6. You can specify whether the Mobile View is designed to be displayed on a mobile device when the device is held vertically or horizontally. From the **Orientation** drop-down list, select one of the following:

   - To display the Mobile View when the device is held vertically, select **Portrait Only**.

   - To display the Mobile View when the device is held horizontally, select **Landscape Only**.

   - To display the Mobile View when the device is held vertically or horizontally, select **Portrait and Landscape**.

7. Repeat the appropriate steps above to define each Mobile View.

8. You can determine which Mobile View to display in Design Mode when the document layout is displayed in Web. Under the **Current** column, select the Mobile View to display.

9. To delete an existing Mobile View, click the **Delete** icon next to the Mobile View to delete.

10. You can choose to show all controls in Design Mode in Web, regardless of whether they are marked as hidden. For example, you design a Mobile View to be displayed on the iPhone. The Mobile View contains several controls that will be displayed on the iPhone, as well as a grid that is marked as hidden and will not be displayed. You can choose to display all the controls in Design Mode, including the grid. Do one of the following:

    - To display all controls in the layout in Design Mode, regardless of whether they are hidden, select the **Show hidden objects in Design Mode** check box.

    - To display only the controls that are specified as not hidden, clear the **Show hidden objects in Design Mode** check box.

11. Click **OK** to save your changes.

12. Add controls to the document, such as text fields, images, graphs, and so on. For steps to add controls to a document, see the Document Creation Help. When you add a new control to the document, a message is displayed asking if you would like to make the control visible in all Mobile Views. Do one of the following:

- To make the control visible in all views, select **Yes**.

- To make the control visible in only the current Mobile View, select **No**.

- To remove a control from a Mobile View, select the control, and press Delete. A message is displayed asking you if you want to delete the control from the document. To hide the control from the current Mobile View, while keeping it visible in all other Mobile Views, select **No**.

To determine which Mobile View to display in Web

13. From the **Tools** menu, select **Manage Views**. The Manage Views editor opens.

14. Under the **Current** column, select the Mobile View you want to display.

15. Click **OK** to save your changes.

To delete a Mobile View from a document

16. From the **Tools** menu, select **Manage Views**. The Manage Views editor opens.

17. Click the **Delete** icon next to the Mobile View you want to delete.

18. Click **OK** to save your changes.

Formatting document tabs: layouts

Each layout in a document can be defined to display on an iPhone, iPad, or Android device independently of other layouts within the same document.

Steps are provided below to format a document layout for mobile devices.

For an introduction to multi-layout documents, see the Document Creation Help.

To define how tabs in a document display on mobile devices

1. In MicroStrategy Web, open the document in Design Mode.

2. From the **Tools** menu, select **Layout**. The Properties dialog box opens.

3. From the left, under Layout Properties, click **Mobile**. You can define the following display options:

   - From the **Supported Orientations** drop-down list, select which orientations you want the layout to support:

     - **Portrait Only** (height is greater than width)

     - **Landscape Only** (width is greater than height)

     - **Portrait and Landscape**

4. You can also define the following display options for documents:

   - To allow users to filter the display of the document by tapping a page-by element from the page-by bar, select the **Display page-by interface** check box.

   - To allow users to change their prompt answers, select the **Display filter interface** check box. The Filter button displays on the layout.

   - To use a layout as an Information Window in a Map widget, select the **Use as Information Window for the Map widget** check box.

     An Information Window is a small pop-up window that provides additional details about a location. It is displayed when a user selects a map marker in a Map widget. For more information,

see *Using a layout as an Information Window in a Map widget, page 238*.

ℹ️ If the document is to be displayed on multiple devices, it is recommended that you use a panel stack as the Information Window. For information, see *Providing additional information to users: Information Windows, page 149*.

- To prevent Android users from performing actions such as scrolling in the document, choose **Optimize layout for micro application**. Optimizing the layout for a micro-application prevents allows you to better control the user's experience and interaction with the document.

  Selecting this option allows you to size the layout for Android devices to fit the page or the width of the device's screen. When a user views the document on an Android device, a fit-to-page layout is zoomed and displayed within the screen, so that he does not need to scroll vertically or horizontally to view any data. A fit-to-width layout is zoomed to the width of the screen, so that a user does not need to scroll horizontally to view any data. To do this, complete the following steps:

  a. Select **Optimize layout for micro application**.

  b. Click **Apply**.

  c. On the **Home** toolbar, select either **Fit Page** or **Fit Width** from the **Zoom** drop-down list.

5. You can choose to always open a document in full screen mode. From the left, under Document Properties, click **Document**, and select the **Always open this document in full screen mode** check box.

ℹ️ Documents displayed on an iPhone in landscape orientation are automatically displayed in full screen mode.

When documents are displayed in full screen mode, the navigation bars and action menu are hidden. You can control whether users can access the hidden navigation bars and action menu.

- To display the navigation bars and action menu when users tap on the full screen button at the top of the app, select the **Allow users to access navigation bars and action menu** check box (default).

- To prevent users from accessing the navigation bars and access menu, clear the **Allow users to access navigation bars and action menu** check box.

  - On the iPad, users are also unable to access the layout bar, which displays the different tabs in the document.

  - On the iPhone in landscape orientation, users are unable to access the layout bar, which displays the different tabs in the document, and the page-by bar. In Portrait orientation, users can access both.

    Consider doing this when you want to control how users exit and interact with the document, such as when the document is part of a custom mobile app with its own navigation system.

    To allow users to perform actions that would normally be done in the action menu, you can create a link in the document that performs the same action. For example, to allow users to exit the document, you can create a link in the document that opens another document or sends them to a different screen in the app, such as the Home page. For steps, see *Using links to access features within the MicroStrategy Mobile application, page 312*.

6. Click **OK**. The Properties dialog box closes.

Disabling swiping between layouts in iOS documents

By default, users can navigate between layouts in a document by swiping to the left or right. On an iPad or iPhone, you can disable this default so that users must use the layout bar to navigate between layouts.

To disable swiping between layouts in documents on iOS devices

1. In MicroStrategy Web, open the document in Design Mode.

2. From the **Tools** menu, select **Document Properties**. The Properties dialog box opens.

3. From the left, under the Document Properties section, click **Mobile**.

4. Do one of the following:

   - To allow users to swipe between pages or select an option in the layout bar to display a report or document, select the **Enable swiping to switch layout** check box (default).

   - To disable swiping between layouts and have users switch layout by tapping the layout's name in the layout bar, clear the **Enable swiping to switch layout** check box.

5. To enable graph tooltips on the device, select the **Enable graph tooltips** check box.

6. Click **Apply**. The Properties dialog box closes.

Displaying documents on iOS devices with a dark or light theme

On the iPad and iPhone, you can choose whether documents use a dark or light theme. In the image shown below, the document on the left is using the dark theme, while the document on the right is using the light theme.
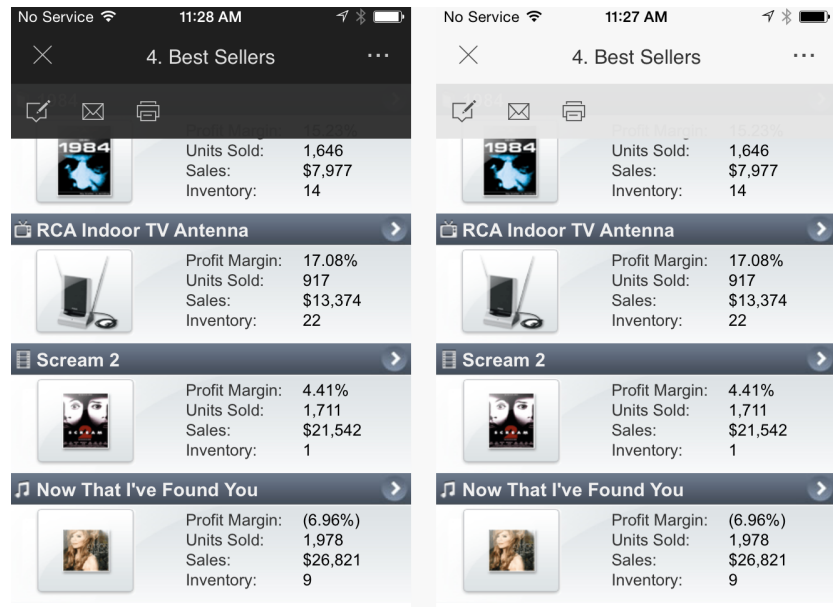
A document's theme controls the colors of its title bar, menu, and may also control the colors of the widgets in the document.

You may want to choose the dark theme if the document's background is also dark, so that the title bar and menu match the document. Similarly, if the document's background is light, you may want to choose the light theme.

You can also display documents with the same theme the app is using. By default, Mobile apps use the dark theme.

To choose which theme a document displayed on the iPad or iPhone uses

1. In MicroStrategy Web, open the document in Design Mode.

2. From the **Tools** menu, select **Document Properties**. The Properties dialog box opens.

3. From the left, under the Document Properties area, select **Mobile**.

4. From the **Document theme color** drop-down list, select one of the following:

- If you want the document and its widgets to use the same theme as the rest of the Mobile app, select **Application theme color** (default).

- If you want the document to always use the dark theme, select **Dark**.

- If you want the document to always use the light theme, select **Light**.

Enabling automatic refresh for documents

For iPhone, iPad, and Android devices, you can define whether the document refreshes itself as it is being displayed on a mobile device. Automatic refresh is helpful if the data is frequently updated.

Automatic refresh also applies to documents viewed in Express Mode in MicroStrategy Web.

To enable automatic refresh in an iOS or Android document

1. In MicroStrategy Web, open the document in Design Mode.

2. From the **Tools** menu, select **Document Properties**. The Properties dialog box opens.

3. From the left, under the Document Properties section, click **Advanced**.

4. Select the **Automatically Refresh** check box.

5. In the field, type the amount of time, in seconds, to wait before each refresh.

6. Click **OK**. The Properties dialog box closes.

Enabling zoom for iOS documents

For the iPhone and iPad, you can define whether you can zoom in and out of the document by pinching and double-tapping.

To enable zooming in an iOS document

1. In MicroStrategy Web, open the document in Design Mode.

2. From the **Tools** menu, select **Document Properties.**. The Properties dialog box opens.

3. From the left, under the Document Properties section, click **Mobile**.

4. Select the **Enable zoom (pinch and double-tap)** check box.

5. Click **OK**. The Properties dialog box closes.

Creating an image watermark for an Android document

An image watermark is a faint design appearing in the background of a document. A watermark typically identifies or decorates pages. For example, a business logo can appear in the background of an Android document.

To create an image watermark for an Android document

1. In MicroStrategy Web, open the document in **Design** or **Editable Mode**.

2. From the **Tools** menu, select **Document Properties**. The Properties dialog box opens.

3. To make the background of the document transparent:

    a. From the left, select **Color and Borders**.

    b. From the **Color** drop-down list, select **No Fill**.

4. From the left, select **Watermark**.

5. To create an image watermark:

    a. From the **Watermark** drop-down list, select **Image watermark**.

> The image file must be available to both the Intelligence Server and to the designers of the document.

    b. Type the path and file name of the image in the **Source** field.

    c. By default, the image is automatically resized to fit within the document margins while retaining its aspect ratio. To scale the image manually, select a percentage from the **Scale** drop-down list.

6. Click **OK** to return to the document.

Setting Info Window to partial screen per panel stack

An Info Window can be set to appear set to a specific initial slide in size and screen position.

1. Right click anywhere on the panel stack to be used.

2. Select **Properties and Formatting** from the list.

3. In the **General** > **Panel Stack** section select the check box for **Use as Information Window**.

4. In the **Mobile Only** section, set **Window Mode** to **Slide** from the drop down menu.

5. Set **Position** as desired.

6. Select the check box next to **Display in partial screen per panel stack size on mobile phone**

7. Set **Initial sliding in width** if you selected Position Left or Right, or **Initial sliding in height** if you selected Position Above or Below.

8. Click **Apply** then **OK** to close the window.

Allowing users to access information easily: mobile-friendly panel stacks

In addition to the standard features supported by panels in documents, you can use the following features to make viewing data in your app easy for users:

- Allow users to easily switch between panels by tapping on circles displayed in a docked panel selector that appears at the bottom of a panel stack. See *Allowing users to easily switch between panels: docked panel selectors, page 146*.

- Allow users to switch between panels by swiping. See *Allowing users to switch panels by swiping, page 148*.

- Save screen space by using an Information Window, which is a pop-up window that can display additional details when users tap a selector in a document or a marker in a map widget. See *Providing additional information to users: Information Windows, page 149*.

- In documents for iPad, determine whether a panel stack resets to the first panel when an attribute selector that targets the panel stack is changed. See *Resetting panel stacks when selectors are changed, page 163*.

Allowing users to easily switch between panels: docked panel selectors

A docked panel selector allows users to switch between panels by tapping on circles displayed on a selector bar that appears at the bottom of a panel stack. An example of a panel with a docked selector on the iPad is shown below:
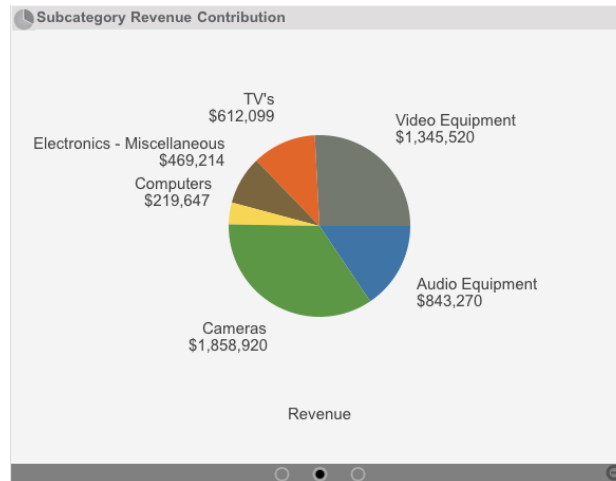
A row of circles, each representing a panel, is displayed in the center of the selector. The current panel is marked with a dark circle.

You can use a docked panel selector in an app to display multiple graphs or widgets in one space. You can also use the docked panel selector with a panel stack to create an interactive slide show, where the information in one panel progresses naturally to the information displayed in the next.

The steps to create a docked panel selector are described below.

To create a docked panel selector

1. In MicroStrategy Web, create a new document, or open an existing document in Design Mode.

2. From the **Insert** menu, choose **Panel Stack**. When you move the mouse cursor to the Layout area, the pointer changes to crosshair.

3. Click and drag in the Layout area to create the panel stack.

To create and configure a selector for the panel stack

1. Right-click the panel stack, and choose **Create Panel Selector**. A drop-down selector appears above the panel stack.

2. Right-click the panel selector and choose **Properties and Formatting**. The Properties and Formatting dialog box appears.

3. From the left, choose the **Selector** category.

4. Under **Mobile**, ensure that the **Display selector docked to its panel stack** check box is enabled.

5. Click **OK** to save the changes.

To add panels and content to the panel stack

1. Hover the mouse cursor over the panel stack. A toolbar appears above the panel stack.

2. Click **Add Panel** to add panels to the stack.

3. For each panel, click **Add Content**, and add grids or graphs to the panel.

Allowing users to switch panels by swiping

You can allow users to change panels in a panel stack by swiping the device's screen to move to the next or previous panel.

Prerequisites

This procedure assumes that you have created a document with the following:

• A panel stack.

• A selector that targets the panel stack.

To allow users to switch panels by swiping

1. Open the document in Design or Editable Mode.

2. Right-click the panel stack with the docked panel selector and select **Properties and Formatting**. The Properties and Formatting dialog box opens.

3. From the left, select **General**.

4. Select the **Allow current panel to be changed without selector** check box.

5. Click **OK** to return to the document.

Providing additional information to users: Information Windows

Information Windows let users view additional information about a specific object by tapping it. A pop-up window displays the additional information. A user can display an Information Window by tapping:

• An attribute element in a grid or graph.

• A button.

• An image.

• An item in a selector.

• An object in a widget. For example, a user can tap a store's location in a Map widget to display the store's address, phone number, and ratings.

• A text field.

An Information Window is a panel stack that is configured to appear as a pop-up window over the selected object, displaying an additional visualization or additional information based on the selected object. An example of an Information Window in an iPad document is shown below:
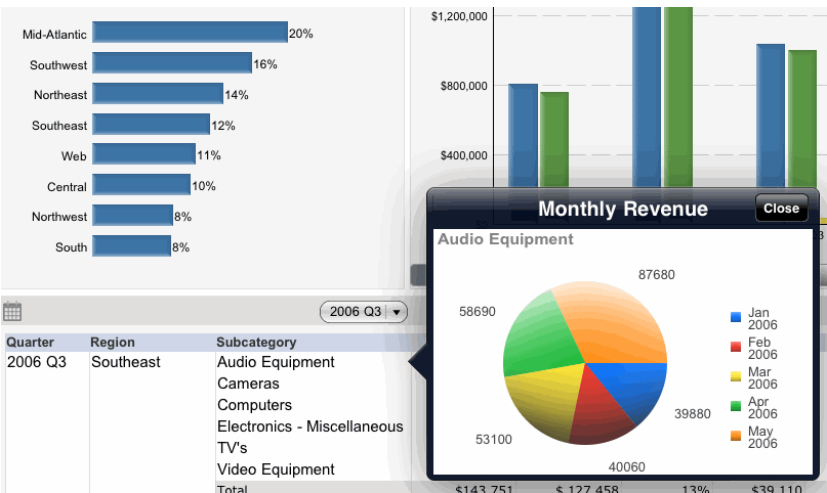
You can customize the data that displays in an Information Window depending on the content of the selected object by using the object as a selector. In the above example, the Subcategory column in the grid is used as a selector. When a user taps an element in the column, the Information Window is displayed with data specific to that attribute element.

You can also use an Information Window as a navigational menu that displays when a user clicks on a button in the page. For example, in the MicroStrategy Mobile demo app below, an Information Window is used to display a list of useful links within the app. The Information Window is configured to slide in from the left side of the screen when the user clicks a menu button in the app.
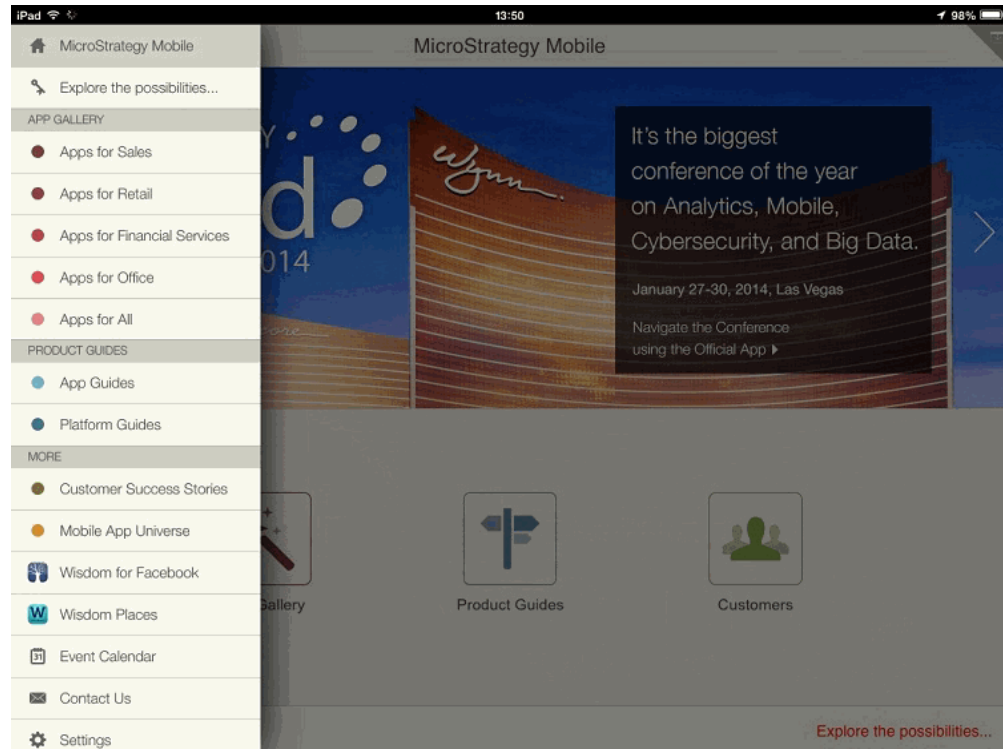
To use an Information Window in a document, you must do one of the following:

- Define a panel stack to be used as the Information Window, and a Grid/Graph or selector that uses the panel stack as an Information Window, as described in *To define an Information Window for a Grid/Graph or a selector in a mobile document, page 152*.

- Define a panel stack to be used as the Information Window, and a text field, image, or button that uses the panel stack as an Information Window, as described in *To define an Information Window for a text field, an image, or a button in a mobile document, page 155*.

You can specify how the Information Window is displayed, by specifying how it opens (for example, it can slide in from the right), how it closes (using a Close button or tapping outside the window), its location, and its opacity. For examples of the different options and steps to specify them, see *Specifying the display of an Information Window on an iPad or iPhone, page 157*.

To define an Information Window for a Grid/Graph or a selector in a mobile document

1. In MicroStrategy Web, navigate to the document to add an Information Window to. The document must contain a Grid/Graph or a selector, which must contain data related to the data to be placed on the panel stack. This procedure includes steps to add a selector.

   For example, the document shown below contains a basic grid:

Region	Employee	Metrics	Revenue	Cost	Profit
<Region>	<Employee>		<Revenue>	<Cost>	<Profit>

2. Open the document in Design Mode.

To define the panel stack for the Information Window

1. From the **Insert** menu, choose **Panel Stack**. When you move the cursor into the Layout area, the pointer becomes a crosshair.

2. Click and drag anywhere in the Layout area to create the panel stack. The panel stack is added to the document.

3. Right-click the panel stack, and select **Properties and Formatting**. The Properties and Formatting dialog box opens.

4. From the left, click **General**, then type an appropriate name for the panel stack in the **Name** field. This name appears as the title of the Information Window on the mobile device.

5. Select the **Use as Information Window** check box.

6. Click **OK** to save the changes.

7. Add data related to the Grid/Graph to the Grid/Graph or selector.

   For example, in the document above, a pie chart representation of Revenue for each Year is added to the panel stack, as shown below:
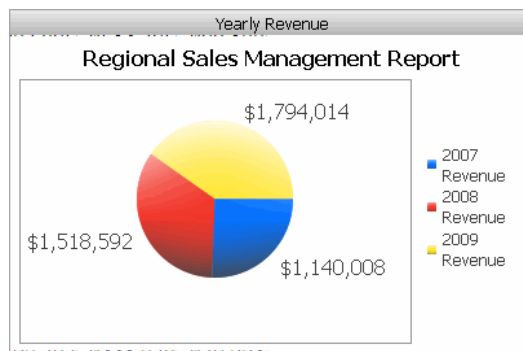
8. Do one of the following:

   • If you are using a Grid/Graph, define the Grid/Graph as a selector. Follow the steps below:

     a. In the report grid, right-click the attribute you want to use as the selector, and choose **Use as Selector**. MicroStrategy Web automatically attempts to find targets for the selector.

        In the above example, the Region attribute is used as a selector for the Information Window.

     b. To verify that the selector targets the Information Window, right-click the attribute again, and choose **Edit Selector**. The Configure Selector dialog box appears, as shown below.
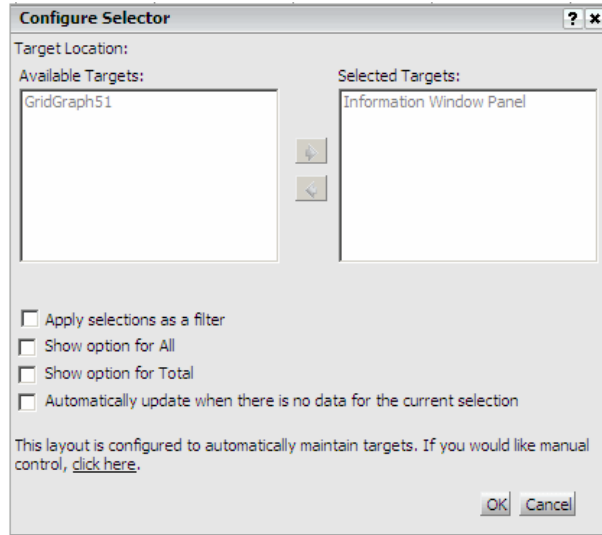
c. In the Selected Targets list, ensure that the Information Window panel appears in the list.

d. Click **OK**.

- If you are using a selector, create the selector to target the panel used as an Information Window. Follow the steps below:

  a. Click the arrow next to the **Selector Control** icon on the Controls toolbar, and then choose how to display the selector from the drop-down list. When you move the mouse to the layout area, the pointer becomes crosshairs.

  b. Click the section of the Layout area in which to place the selector. If you click and drag in the section, you can size the selector.

  c. Right-click the selector and select **Properties and Formatting**. The Properties and Formatting dialog box opens.

  d. From the left, choose **Selector**.

e. Select an attribute, custom group, or consolidation in the **Source** field. The elements of the source are displayed as items in the selector.

f. In the **Selected** list, ensure that the Information Window panel appears in the list.

g. Click **OK**.

9. Save the document.

For the example above, when the document is executed on an iPad, the Information Window appears when the user taps an element in the Region column, as shown below:
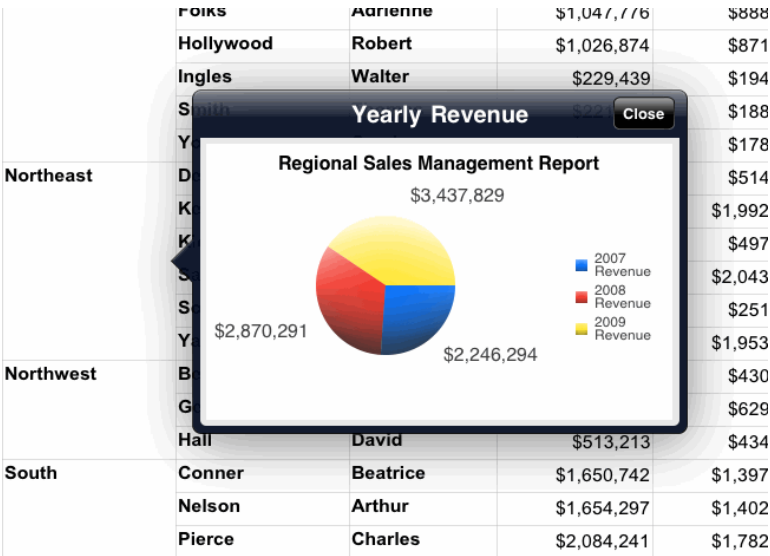
To define an Information Window for a text field, an image, or a button in a mobile document

To create the panel stack for the Information Window

1. In MicroStrategy Web, navigate to the document to add an Information Window to.

2. Open the document in Design Mode.

3. From the **Insert** menu, choose **Panel Stack**. When you move the cursor into the Layout area, the pointer becomes a crosshair.

4. Click and drag anywhere in the Layout area to create the panel stack. The panel stack is added to the document.

5. Right-click the panel stack, and select **Properties and Formatting**. The Properties and Formatting dialog box opens.

6. From the left, click **General**, then type an appropriate name for the panel stack in the **Name** field. This name appears as the title of the Information Window on the mobile device.

7. Click **OK** to save the changes.

8. Add controls to the panel stack, such as Grid/Graphs or text fields.

To define the text field, image, or button that uses the Information Window

1. In MicroStrategy Web, navigate to the document to add an Information Window to.

2. Open the document in Design Mode.

3. Add a text field, image, or button to the panel stack.

4. Right-click the text field or image, and select **Properties and Formatting**. The Properties and Formatting dialog box opens.

5. From the left, click **General**.

6. From the **Panel Stack** drop-down list, select the panel stack to use as the Information Window.

7. Click **OK** to save your changes.

8. Save the document.

Specifying the display of an Information Window on an iPad or iPhone

You can specify how an Information Window opens on an iPad or iPhone: by popping up over the document, flipping up (like turning over a card), increasing in size, or sliding in from an edge of the screen.

You can display a Close button on the Information Window or have it close when the user taps outside the Information Window.

An Information Window can display in the best position automatically, at the position of the panel stack, above or below the selected object, or to the right or left of the selected object.

You can specify the transparency of the Information Window.

You specify these options by defining:

* The window Mode, which is how the Information Window opens (pop up, flip up, scale, or slide)

* Whether the Close button is displayed

For pop-up Information Windows, you can specify the placement, or position, of the Information Window.

* A flip-up or scaling Information Window displays in the center of the screen.

* A sliding Information Window displays at the edge that it slid from.

In the document below, a user can tap the buttons on the left to display Information Windows.
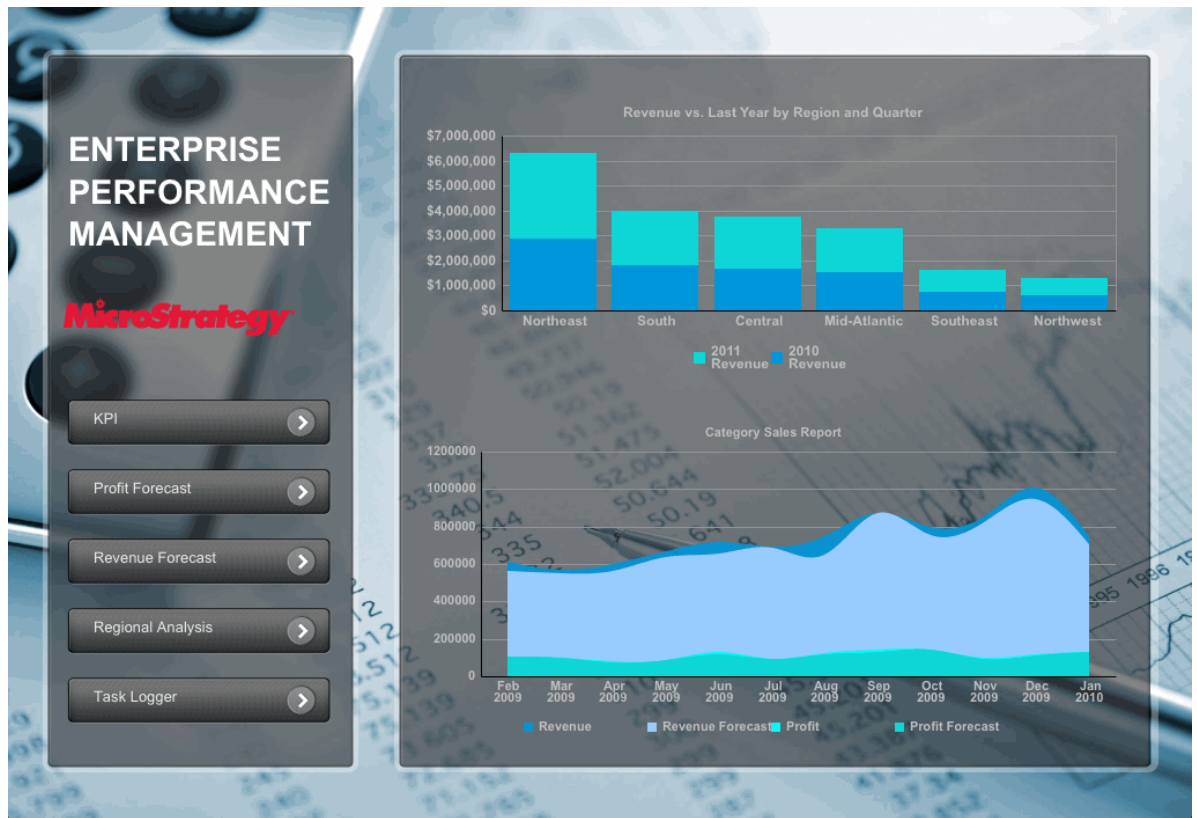
Each Information Window is formatted differently. If a user taps the KPI button, an Information Window without a Close button pops up. The user can tap anywhere outside of the Information Window to close it.
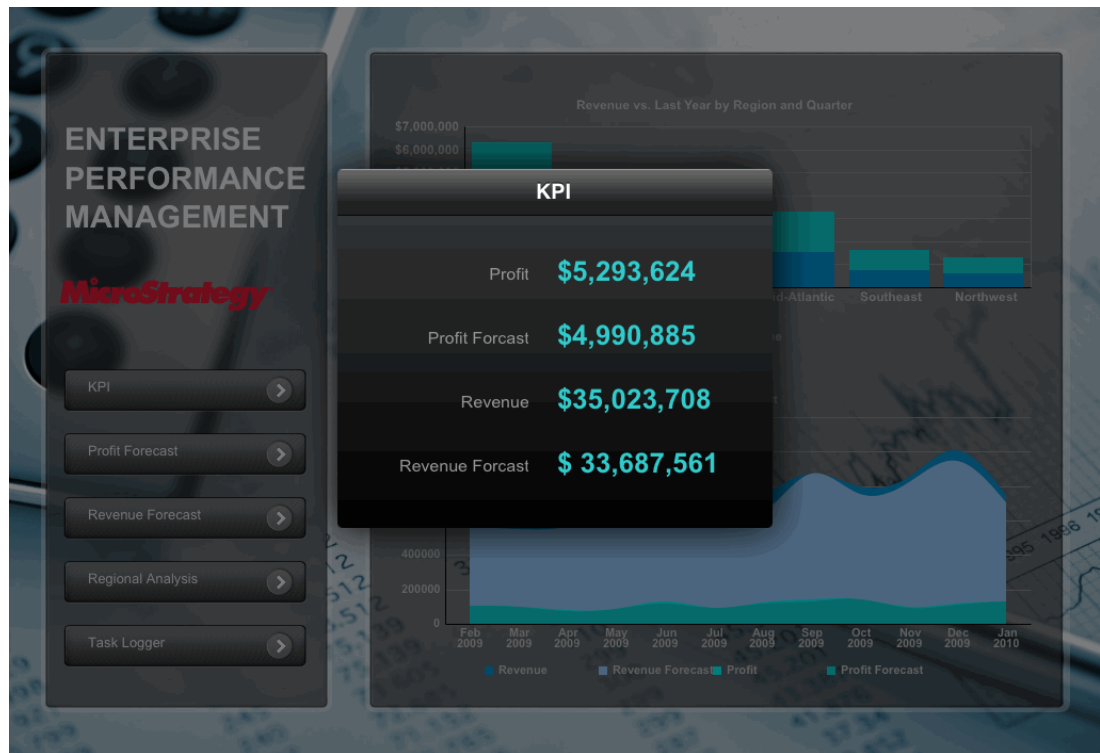
If the user taps the Task Logger button, the Task Logger Information Window pops up. Notice that a Close button is displayed.

When the user taps the Profit Forecast button, the Profit Forecast Information Window slides in from the right.

To specify how an Information Window displays on iPads and iPhones

1. In Web, open the document in Design Mode.

2. Right-click the panel stack that is used as an Information Window, and select **Properties and Formatting**.

3. From the left, choose the **General** category.

4. To specify how to open the Information Window, select one of the following **Window mode** options:

   - To open the Information Window by popping it up, select **Appear**. (This is the default.)

- To open the Information Window by flipping it up, like turning over a card, select **Flip Up**.

- To open the Information Window by gradually increasing its size, select **Scale Up**.

- To open the Information Window by sliding it from an edge of the screen, select **Slide**.

5. If you selected Appear as the Window Mode, you can specify the location of the Information Window. Select one of the following options from the **Placement** drop-down list:

   - To display the Information Window in the best position, select **Automatic**. (This is the default.)

   - To display the Information Window at the position of the panel stack, select **Fixed**.

   - To display the Information Window above the selected object (for example, the item in the selector or the attribute in the grid), select **Above**.

   - To display the Information Window below the selected object, select **Below**.

   - To display the Information Window to the left of the selected object, select **Left**.

   - To display the Information Window to the right of the selected object, select **Right**.

6. If you selected Slide as the Window Mode, you can specify which edge to slide the Information Window from. Select one of the following options from the **Position** drop-down list:

   - **Right** (the default)

   - **Left**

- **Above**

- **Below**

7. By default, Information Windows on an iPhone fill the screen when they display. To scale the Information Window so it is the same size on the iPhone as in Web, select the **Display in partial screen per panel stack size on mobile phone** check box.

   Information Windows on an iPad automatically scale so they are the same size as in Web.

   - If you selected Slide as the Window Mode, you can specify how much of the Information Window initially displays. Users can then drag the Information Window out to view the rest of the Information Window. Do one of the following:

     ◦ If you selected Right or Left as the Information Window's position, specify how much of the Information Window's left or right side displays, respectively. Type the value, in inches, in the **Initial sliding in width** field.

        To display the full Information Window, type 0 (default).

     ◦ If you selected Above or Below as the Information Window's position, specify how much of the Information Window's bottom or top side displays, respectively. Type the value, in inches, in the **Initial sliding in height** field.

        To display the full Information Window, type 0 (default).

8. By default, the Information Window is closed when a user taps outside of the Information Window. To close the Information Window by tapping a button instead, select the **Dismiss only when 'Close' button is tapped** check box.

9. If the Information Window is set to open by flipping, increasing in size, or sliding into the screen, you can define how transparent the Information Window displays. Do the following:

    a. From the left, select **Effects**.

    b. In the **Transparency** field, type a percentage. A higher value displays the Information Window as more transparent, while a lower value displays the Information Window as more solid. The default value is `0`.

    c. To blur the sections of the document that show through the transparent Information Window, select **Enable blur effect**.

10. Click **OK** to save your changes and return to the document.

Resetting panel stacks when selectors are changed

In documents for iPad, you can determine whether a panel stack resets to the first panel when an attribute selector that targets the panel stack is changed. By default, the current panel (the panel that is displayed) does not change when an attribute selector is changed. The steps to enable this option follow.

To determine whether a panel stack resets when a selector is changed

1. In MicroStrategy Web, open the document in Design Mode.

2. Right-click the panel stack, and select **Properties and Formatting**.

3. In the **General** category, select the **Reset to first panel when targeted (Mobile only)** check box.

4. Click **OK** to save your changes.

Allowing users easy access to document content: docked headers and footers

You can ensure that users always have access to a section of content in a mobile document by adding the content to a docked page header or page footer. The content of a docked page header is always displayed at the top of the screen, while a docked page footer is always displayed at the bottom, regardless of screen size. Docked headers and footers remain in the same place on the screen as the user scrolls up or down in the document, allowing the user easy access to the footer's content.

Some examples of how you can use docked headers and footers are:

- To display important information, such as the name of your company, project, or app, copyright information, or contact information.

- To create a navigation bar of useful links. Do this if you want to create a custom navigation bar instead of the tab bar MicroStrategy provides. For steps to create a tab bar, see *Creating a tab bar to hold buttons, page 319*.

Steps are below to define a docked page header or page footer.

To dock a header or footer to the top or bottom of a document

1. Right-click the page header or page footer section that you want to define as docked, then select **Properties and Formatting**. The Properties and Formatting dialog box opens.

2. From the left, click **General** in the Properties section. Do one of the following:

   - To display the page header or page footer as an ordinary header or footer that is not docked to the top or bottom of the document, clear the **Dock to top of screen (Mobile only)** check box or the **Dock to bottom of screen (Mobile only)** check box

- To display the page header or page footer as docked, select the **Dock to top of screen (Mobile only)** check box or the **Dock to bottom of screen (Mobile only)** check box.

Allowing users to copy text from documents on iOS devices

On an iPad or iPhone, a user can copy text from a document, by tapping and holding the text to copy. If zoom is disabled, a user can also double-tap the text.

If the document uses a document template other than an iPad or iPhone template, the document may use a Detail section. The Detail section of a document displays one row for each row of data in the document's dataset. (For descriptions and examples of the different document sections, see the *Designing and Creating Documents* chapter of the *Report Services Document Creation Guide*.) If the text is displayed in the Detail section, a user taps the text to copy.

For example, a document contains the heading "List of Regions" in the Detail Header section, and the actual regions in the Detail, as shown below:

List of Regions
Central
Mid-Atlantic
Northeast
Northwest
South
Southeast
Southwest
Web

Zoom is disabled in the document, so double-tapping the word Region displays a pop-up menu. The user can copy the selected text (Region), or select all the text in the text field (List of Regions).

When a user taps Northeast, which is in the Detail section, the word Northeast is selected. The pop-up menu allows the user to copy the selected text (Northeast).

For a document, you can enable copying for the whole document, and also enable or disable copying for a specific text field, as described in the steps below. This means that you can enable copying for all text fields on a document, but specify that a particular text field cannot be copied.

To allow users to copy text from a text field in a document

1. In MicroStrategy Web, open the document in Design Mode.

2. To enable copying for the whole document, follow the steps below:

    a. From the **Tools** menu, select **Document Properties**. The Properties and Formatting dialog box opens.

    b. From the list of categories on the left, under Document Properties, select **Mobile**.

    c. To enable copying from all text fields on the document, select the **Enable copy for text** check box.

    Text sub-selection is only supported outside of the Detail section. This means that if the user selects text in the Detail section of the document, all the text in the Detail section is selected. A user cannot select a single word, as he can in other document sections. The example in *Allowing users to copy text from documents on iOS devices* demonstrates this.

3. By default, all text fields use the document-level setting to determine whether copying is enabled. You can enable or disable copying on a specific text field by following the steps below:

    a. Right-click the text field, and select **Properties and Formatting**. The Properties and Formatting dialog box opens.

    b. From the list of categories on the left, select **General**.

    c. Select one of the following:

- To enable copying on this text field, select **Enable copy for this text**.

- To disable copying on this text field, select **Disable copy for this text**.

d. Click **OK** to save your changes and return to the document.

Notifying users: Displaying a badge next to the MicroStrategy Mobile application icon

You can choose to display and update a badge displayed next to the MicroStrategy Mobile application icon on a user's iPhone or iPad. The badge is an alert you can use to inform users of important information, such as new content or updates. A badge displays as a red circle with white text.

You can:

- Update the badge each time that the user runs a document. For steps, see *Updating the MicroStrategy Mobile application badge each time that a document is run, page 167*.

- Update the badge when the data in a report meets specific threshold conditions. For steps, see *Updating the MicroStrategy Mobile application badge when the data in a report meets specific threshold conditions, page 168*.

Updating the MicroStrategy Mobile application badge each time that a document is run

You can update the badge displayed next to the MicroStrategy Mobile application icon on a user's iPhone or iPad each time that the user runs a document. To do so, you must add a text field to the document which contains the value to display in the badge, as described in the steps below. When the user runs the document, the value displayed in the text field is automatically used to update the badge.

To update the MicroStrategy Mobile application badge each time that a document is run

1. In MicroStrategy Web, open the document in **Design** or **Editable Mode.**

2. You can have MicroStrategy update the badge with the value of a metric, rather than a static value. Do one of the following:

- To update the badge with a metric value, from the **Dataset Objects** panel on the left, click and drag the metric onto the layout area. A text field is automatically created and displayed, containing shortcut text that will be automatically replaced with the metric's value when the document is run.

- To update the badge with a static value, from the **Insert** menu, select **Text**, then click the location in the layout area to add the text field to. A blank text field is automatically created and added to the document. In the field, type the value to display, then click outside the text field to apply your changes.

3. Right-click the text field and select **Properties and Formatting**. The Properties and Formatting dialog box opens.

4. Under Mobile, select the **Set application badge to value of this field** check box.

5. Click **OK** to apply your changes.

Updating the MicroStrategy Mobile application badge when the data in a report meets specific threshold conditions

You can update the badge displayed next to the MicroStrategy Mobile application icon on a user's iPhone or iPad when a metric on a report meets specific threshold conditions. This alerts users who see the badge to data that is likely to be important for making business decisions. To do this, you must create an alert-based subscription based on the metric, as described in the steps below.

Prerequisites

- You must have MicroStrategy Distribution Services installed.

- MicroStrategy Web must be configured to use Distribution Services.

- Mobile device users must have the Use MicroStrategy Mobile and Mobile View Document privileges.

To update the MicroStrategy Mobile application badge when the data in a report meets specific threshold conditions

1. In MicroStrategy Web, run the report to use to update the application badge.

2. Right-click the name of a metric in the report, then point to **Alerts**. Select **Mobile Notifications**. The Alerts Editor opens.

3. From the **Filter On** drop-down list, select the attribute or metric to use to create a condition.

4. If you are creating a condition based on a metric, do the following:

   a. Select a comparison operator, such as Greater Than or Less Than.

   b. Enter a value in the field on the right or click **Select Metric** to choose another metric to compare the original metric to.

5. If you are creating a condition based on an attribute, do one of the following:

   - To define your condition by typing specific attribute form values:

     a. Select the **Qualify** option.

     b. From the drop-down list on the left, select the attribute form on which to base the condition. For example, you can qualify on the attribute element's ID form, one of its description forms, or the

DATE if the attribute is time-based.

c. From the next drop-down list, select a comparison operator such as Greater Than or Less Than. The operators available for a selection depend on the attribute form you chose above.

d. Do one of the following:

  ◦ To compare the attribute form to a specified value, type the value in the field.

  ◦ To compare the first attribute form to a second attribute form, click **Select Attribute**, then select the second attribute form from the drop-down list.

- To define your condition by selecting attribute elements from a list:

  a. Choose the **Select** option.

  b. From the drop-down list on the left, select **In List** or **Not In List**. If you select Not in List, then the attribute elements in the Selected list will not be included in the threshold condition.

  c. Move attribute elements from the Available list to the Selected list. Elements in the Selected list are included in the threshold condition.

- To search for a specific element, use the **Search for** field. Select the **Match case** check box to return only items that match the upper and lower cases you typed in the Search for field.

6. Click the **Apply** icon to define the condition.

7. To add another threshold condition, select **Add Condition**, then repeat the appropriate steps above to define the condition.

8. Expand **Delivery Settings**, then enter a name for the subscription in the **Name** field.

9. From the **Schedule** drop-down list, select a schedule or event. The schedule choices available are created in the Developer Schedule Manager. For steps, see the *Scheduling Jobs and Administrative Tasks* chapter in the *System Administration Guide*.

10. If you want alerts delivered to a mobile device:

    a. Click **To** to choose an address. The Recipients Browser dialog box opens.

    b. You can search for contacts or a contact list in the **Find** field. The contacts will appear in the Available list below.

    c. Click the left arrow and right arrow to add or remove contacts from the To, Cc, and Bcc fields.

    d. Click **OK** to save the list of addresses.

11. From the **Device type** drop-down list, select the type of device to deliver the notifications to.

12. From the **Target Application** drop-down list, select the type of application you want to send the report to.

13. Select the **Update application badge with the value of this metric** check box. From the drop-down list next to the check box, select the metric whose value you want to display next to the application icon. Once a row of data in the report meets the threshold condition you defined in the steps above, the value of this metric, as displayed in the row, is shown next to the application icon. The first row of data that meets the threshold condition is used to update the application icon.

    For example, in the report displayed below, you can define a threshold condition as "Profit greater than or equal to 200,000". If you select Sales Team from the drop-down list, 8 is displayed next to the application icon.

Satellite Operations	Profit	Sales Team
Atlanta	$157,963	5
Boston	$224,495	8
Charleston	$199,884	7
Fargo	$126,778	3
Memphis	$301,966	9
Miami	$178,713	6

14. If you want to specify an expiration date for the subscription, expand **Advanced Options** and select the **Do not deliver after** check box, then specify an expiration date by choosing a date from the calendar.

15. Click **OK** to create the subscription.

Creating documents that use Transaction Services to update your data warehouse

You can create documents for iOS and Android devices that allow users to change values in grids and then write those changes to your data warehouse. Use Transaction Services in your apps and documents to update data, write new information to your warehouse, or delete existing records. This feature is available when you install Transaction Services.

For an introduction to Transaction Services, see the *Advanced Reporting Guide*.

Some examples of how you can use Transaction Services are:

• To create a Corporate Request Center that allows users to approve or deny time off, expenses, and purchase order requests.

• To create inspection forms. Inspectors can input data with sliders and selectors. They can also take pictures of any issues they find. The results of their inspections are instantly written to the database.

• To create and update budgets or calendars.

Prerequisites

- You must have Transaction Services.

- You must have the Web Configure Transaction privilege.

Overview

The following is a high-level overview of the tasks you need to perform to create a document that uses Transaction Services. Each high-level step describes where to find specific instructions for designing transaction-enabled documents:

- In Developer, create a Transaction Services report using the Freeform SQL Editor. For instructions, see the *Advanced Reporting Guide*.

- In MicroStrategy Web, create a dataset report that includes the attributes and metrics you added to the Transaction Services report above. For instructions, see the *Report Services Document Creation Guide*.

- In MicroStrategy Web, create a document for mobile devices that uses the above dataset report, and link it to the Transaction Services report you created above. For instructions, see the *Report Services Document Creation Guide*.

For iOS devices, the document can include a transaction table, which provides a structure to organize multiple input object controls for the same transaction. For steps to create a transaction table, including an example, see *Organizing transactions with tables on iOS devices, page 191*.

The values in documents you create using the above procedure can only be edited by users who have the Execute Transaction privilege.

Allowing users to filter data: prompts

A prompt is a question that the system presents to a user when a report is executed. The user's answer determines the data that is returned by the

report. Specific prompts can be added to a report for use on an iPhone, iPad, or Android device that has the MicroStrategy Mobile application. These prompts are then displayed when the prompted report, or a document that uses the prompted report as a dataset, is executed on the device.

You can use prompts to customize the data within an app to the user. For example, an app contains information on sales and inventory for all stores of a company nationwide, with a prompt asking for which store(s) the user would like to view data. Store managers in different regions typically want to see data for different stores. Including a prompt allows you to create one app that all store managers can use.

If an app or document has more than one prompt, you can filter the options available in the second prompt based on the user's answers in the first prompt. To do this, add the first prompt as a filter on the second prompt. For steps to create a filter, see the Basic Reporting Help.

For an introduction to prompts, the basic prompt types, prompt creation, and adding a prompt to a report, see theBasic Reporting Help. For instructions to add a prompt to a document, see the Document Creation Help.

For best practices when creating prompts for mobile devices, see *Best practices for creating prompts for mobile devices, page 176*.

For steps to answer prompts in MicroStrategy Mobile, see the MicroStrategy Mobile Analysis Help.

You can display prompts on mobile devices in the following styles:

- **Textbox**: This prompt lets users type a value via a keypad to answer a prompt.

- **Slider**: This prompt lets users select a numeric value on a horizontal slider.

- **Stepper**: This prompt displays a numeric value. Users can tap the increment and decrement buttons to increase or decrease the value for

their prompt answer.

- **Switch**: This prompt lets users choose between two choices, On and Off.

- **Wheel**: This prompt displays a wheel or row of wheels that the user can scroll through to specify a date or date and time. On Android devices, this prompt is displayed as a stepper.

- **Calendar**: This prompt lets users select a date from a calendar.

- **Geo Location**: This prompt lets users filter results based on their current geographical location. The prompt includes a request for permission to enable a GPS-style locator. For more information, see *Prompting users for their location: Geo Location prompts, page 187*.

- **Barcode Reader**: This prompt lets users answer a prompt by scanning or typing a barcode. For more information, see *Creating Barcode Reader prompts, page 188*.

- **Tree**: This prompt lets users answer a prompt by selecting objects in a tree. Tapping one object in the tree displays all objects underneath it. For more information, see *Allowing users to choose elements from multiple attributes: Hierarchy prompts, page 185*.

Prompts for mobile devices are divided into four types: value prompts, attribute element prompts, hierarchy prompts, and object prompts. Value prompts require the user to select a single value, such as a date or number. Attribute element prompts require the user to select from a limited list of available attribute elements.

Hierarchy prompts require the user to select an attribute or attribute element from a hierarchy of related attributes. For example, an app may display data for a time period that the users specify. The app may include a prompt on the Time hierarchy, which contains the Year, Month, and Day attributes. Users can then choose to view data for a specific year, month, or day.

Object prompts require the user to select one or more objects from a list of available objects. Objects prompts allow users to choose exactly what data

they want to view. For example, a document may contain a grid with the Region and City attributes. You can add an object prompt to allow users to choose which metrics or filters to add to the grid.

Best practices for creating prompts for mobile devices

- Create prompts specifically designed for use on mobile devices. Some examples of the prompt types are listed below:

  - Slider, which allows users to answer the prompt by selecting a numeric value on a slider.

  - Stepper, which allows users to answer the prompt by using increment and decrement buttons.

  - Wheel, which allows users to answer the prompt by moving wheels to specify a value.

  - Geo Location, which allows users to filter results based on their current geographical location.

  - Barcode Reader, which allows users to answer the prompt by scanning or typing a barcode.

- Prompts that are not specifically designed for mobile devices can still be used. In general, use:

  - The List style for single selections.

  - The Shopping Cart style for multiple selections on iOS devices.

  - The Geo Location style for geographical location data.

  - The Barcode Reader style for barcode data.

Allowing users to filter data based on a single value: Value prompts

A value prompt lets users select a single value, such as a date or specific text string, and filter report data based on their selection. The different types of value prompts are:

- **Date and time prompt**: This prompt type asks users to type or select a date, and returns data with the Date data type that matches the user's selection. For example, the Date prompt can be useful when added to a filter that screens data based on Year=2016. The prompt lets users select a specific date within the year of the filter's condition. Date prompts are used in filters that qualify on a date.

  Date and time prompts are displayed as wheels on an iPhone or iPad, and are displayed as a date/time stepper on an Android device.

- **Numeric prompt:** This prompt type asks users to type a numeric value. Numeric value prompts accept integers or decimals up to 15 digits of precision. Numeric prompts can be used in any filter that needs a number input from the user. For example, a numeric prompt may be used to filter results where the minimum value for Revenue is entered by the user.

  Numeric prompts can be displayed as text boxes, numeric wheels, sliders, steppers, switches to choose between two numeric values, and location prompts.

- **Text prompt:** This prompt type asks users to type a string of text in a text box.

  Text prompts can be displayed as text boxes, or as barcode reader prompts.

- **Big decimal prompt:** This prompt type asks users for a "big decimal" value. Big decimal value prompts accept integers and decimals up to 38 digits of precision.

  Big decimal prompts can be displayed as text boxes.

For more information about value prompts, see the *MicroStrategy Web Help*.

To create a value prompt

1. On the MicroStrategy Web home page, click **Create Prompt**. The Create Prompt page opens, with a list of the types of prompts you can create.

2. Click **Value Prompt**. The New Prompt page opens.

3. Specify the type of value prompt, making your selection based on your requirements:

   - To let users filter for data related to either a specific date or a range of dates, click **Date and Time prompt**.

   - To let users filter numeric data, usually based on a metric, click **Numeric prompt**.

   - To let users filter text data, usually based on attribute forms, click **Text prompt**.

   - To let users filter data based on a big decimal value for a metric, click **Big Decimal prompt**.

4. Click the **General** tab.

5. Specify a title and description for the prompt in the **Title** and **Instructions** fields.

To restrict the prompt answers

6. To require users to answer the prompt before running the report, select the **Prompt answer is required** check box.

7. To set the maximum and minimum values that can be entered by the user, select the **Minimum value** and **Maximum value** check boxes and type a value in the respective fields. You can specify a minimum value even if you do not specify a maximum value.

To specify the layout and display style of the prompt

8. Click the **Style** tab.

9. From the **Display style** drop-down list, specify a presentation style, such as Textbox, for the prompt. This is how the prompt is displayed to the user.

10. Depending on your requirements, choose the appropriate display style and options by referring to the following table:

End Goal	Prompt Type and Display Style	Setup Recommendations and Requirements
Select a date from a calendar	**Prompt type**: Date & Time **Display style**: Textbox	**Minimum value**: Specify the earliest date that can be used to answer the prompt. **Maximum value**: Specify the latest date that can be used to answer the prompt.
Select a date and/or time from a wheel	**Prompt type**: Date & Time **Display style**: Textbox	**Minimum value**: Specify the earliest date and time that can be used to answer the prompt. **Maximum value**: Specify the latest date and time that can be used to answer the prompt. **Allow user to select time**: Specify whether the user can select a time as well as a date to answer the prompt. **Interval** (minutes): Specify the interval displayed between each value on the wheel. For example, an interval of 30 allows users to select times in 30-minute intervals, such as 9:30 A.M., 10:00 A.M., 10:30 A.M., and so on.
Type a	**Prompt type:**	**Minimum value**: Specify the lowest value that can

End Goal	Prompt Type and Display Style	Setup Recommendations and Requirements
numeric value to answer a prompt	Numeric **Display style:** Textbox	be used to answer the prompt. **Maximum value**: Specify the highest value that can be used to answer the prompt.
Use a switch to choose between two numeric values	**Prompt type:** Numeric **Display style:** Switch	**On value**: Specify the numeric value used when the switch is set to its On position. The default is 1. **Off value**: Specify the numeric value used when the switch is set to its Off position. The default is 0.
Select a numeric value on a horizontal slider	**Prompt type:** Numeric **Display style:** Slider	**Minimum value** (required): Specify the lowest selectable value in the slider. **Maximum value** (required): Specify the highest selectable value in the slider. **Interval**: Specify the interval displayed between each value on the slider. For example, an interval of 10 allows users to specify values in increments of 10, such as 10, 20, 30, and so on.
Use a stepper to increment or decrement a numeric value	**Prompt type:** Numeric **Display style:** Stepper	**Minimum value**: Specify the lowest value that is displayed in the prompt. **Maximum value**: Specify the highest value that is displayed in the prompt. **Interval**: Specify the interval used to increment or decrement values in the stepper. For example, if the stepper's minimum value is set to 100, and the interval is 10, users can increment the stepper value to 100, 110, 120, and so on.
Select a numeric value from a wheel	**Prompt type:** Numeric	**Minimum value**: Specify the lowest value that is displayed in the prompt.

End Goal	Prompt Type and Display Style	Setup Recommendations and Requirements
	Display style: Wheel	**Maximum value**: Specify the highest value displayed in the prompt. **Interval**: Specify the interval displayed between each value on the wheel. For example, an interval of 30 allows users to specify values in increments of 30.
Filter data based on a user's current location	**Prompt type:** Numeric **Display style:** Geo Location	**Mobile preferences**: Select the **Latitude** or **Longitude** option to filter data based on the current latitude or longitude. For Geo Location prompts, you must create one prompt for the longitude, and one for the latitude. For a detailed description of the Geo Location prompt, see *Prompting users for their location: Geo Location prompts, page 187*.
Type text to answer a prompt	**Prompt type:** Text **Display style:** Textbox	**Minimum number of characters**: Specify the minimum required length of the prompt answer. **Maximum number of characters**: Specify the maximum allowable length of the prompt answer.
Scan or type an item's barcode	**Prompt type:** Text **Display style:** Barcode Reader	**Minimum number of characters**: Specify the minimum required length of the barcode. **Maximum number of characters**: Specify the maximum allowable length of the barcode. For a detailed description of the Barcode Reader prompt, see *Creating Barcode Reader prompts, page 188*.

End Goal	Prompt Type and Display Style	Setup Recommendations and Requirements
Type a large number to answer a prompt	**Prompt type:** Big Decimal **Display style:** Textbox	**Minimum value**: Specify the lowest value that can be used to answer the prompt. **Maximum value**: Specify the highest value that can be used to answer the prompt.

For examples of each prompt display style, see *Allowing users to filter data: prompts, page 173*.

To save the prompt

11. To save the prompt, click **Save As**. The Save As dialog box opens.

12. Specify a name, description, and the location in which to save the prompt and click **OK**. The Save As dialog box closes, and the prompt is saved.

Allowing users to choose from a list of attribute elements: Attribute element prompts

An attribute element prompt lets users select prompt answers from a limited list of specific attribute elements.

The table in the steps below provides a list of attribute element prompt types that you can create in MicroStrategy Web for use on a mobile device. To create a prompt that accomplishes a specific goal, find the task you want to perform in the first column in the table, then see the remaining columns for the display style, recommendations, and requirements to create the prompt. For images of each prompt display style, see *Allowing users to filter data: prompts, page 173*.

For more information about attribute element prompts, see the *MicroStrategy Web Help*.

To create an attribute element prompt

1. On the MicroStrategy Web home page, click **Create prompt**.

2. The Create Prompt page opens with a list of the types of prompts that you can create. Click **Attribute Element List**.

3. To determine the attribute whose elements the user can choose from, click **Select Attribute**. Select the attribute whose elements are displayed in the prompt and click **OK**.

4. To define the elements that a user can choose from, choose one of the following options:

   • To display all the attribute elements to users while they are answering the prompt, choose **List all elements (no restriction)**. This option is recommended only if there are a small number of elements for the attribute.

   • To create a list of attribute elements from which users can choose, select **Use a predefined list of elements**. This option is recommended if users need to choose from a specific set of elements.

     To select the elements, click **Add**, then click **OK**. To remove an object, highlight it and click **Remove**. To remove all items, click **Clear**.

   • To narrow the list of available attribute elements by using a filter, choose **Use a filter to reduce the number of elements**. This option is recommended for attributes with a large number of elements.

     For example, you can restrict the Customer attribute by only showing the top 100 customers. Browse to and select the filter.

     Filtered attribute element prompts apply to iOS devices. On Android devices, all attribute elements are displayed.

5. Click the **General** tab.

6. Specify a title and description for the prompt in the **Title** and **Instructions** fields.

7. To require users to answer the prompt before running the report, specify whether the prompt requires an answer. Select the **Prompt answer is required** check box.

8. Optionally, set the maximum and minimum number of prompt answers allowed. Enter these numbers in the **Minimum number of answers** and **Maximum number of answers** fields.

9. Click the **Style** tab.

10. You can determine the presentation style used to display the prompt to the user. The default is **Shopping Cart**. From the **Display style** drop-down list, select the presentation style you want to use.

11. Depending on your requirements, select the appropriate display style and options by referring to the following table:

End Goal	Display Style	Setup Recommendations and Requirements
Select a date-based attribute element from a calendar	Calendar	**Minimum date**: Specify the earliest date that users can select. **Maximum date**: Specify the latest date that users can select.
Select an attribute element from a list	List	**Show search box**: Specify whether users are presented with a search box to filter the list of attribute elements. **Make search required**: Specify whether to require that users search for elements.
Use the current geographical location to filter	Geo Location	**Select location mapping level**: Select the level at which to filter attribute elements. For example, if this option is set to City, the attribute elements will be

End Goal	Display Style	Setup Recommendations and Requirements
attribute elements		filtered to include only those in the current city. **Select location mapping attribute:** Select the attribute to use to filter the element list. The location mapping attribute must contain attribute forms for latitude and longitude, and these attribute forms must be visible on the template. For a detailed description of the Geo Location prompt, see *Prompting users for their location: Geo Location prompts, page 187*.
Scan or type the barcode of an item to search for an attribute element	Barcode Reader	**Show search box:** Specify whether users are presented with a search box to filter the list of attribute elements. **Make search required**: Specify whether to require that users search for elements. **Barcode mapping attribute form**: Select the attribute form used to look up barcode information. For a detailed description of the Barcode Reader prompt, see *Creating Barcode Reader prompts, page 188*.

12. To save the prompt, select **Save As**. The Save As dialog box opens.

13. Specify a name, description, and the location in which to save the prompt and click **OK**.

Allowing users to choose elements from multiple attributes: Hierarchy prompts

Users can answer a prompt on an iPad or iPhone by selecting attribute elements from all of the attributes in a hierarchy, using the Hierarchy prompt.
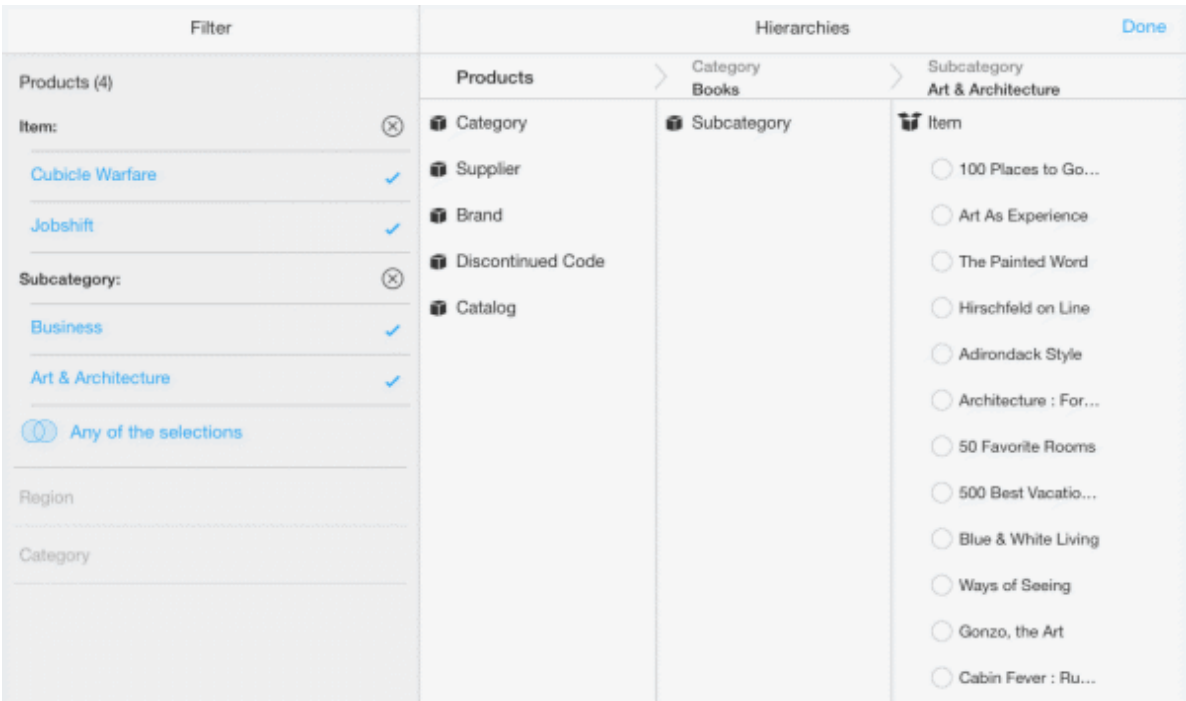
Use Hierarchy prompts when users want to view or compare data for different types of attribute elements. For example, a user wants to analyze sales information across all the products in his store. The user wants to be able to analyze sales data for specific items in his store and analyze sales data across different product categories. You can create a Hierarchy prompt on the Product hierarchy, which contains both the Item and Category attributes, and add it to the report.

For steps to create a Hierarchy prompt, refer to the *Basic Reporting Guide*.

Allowing users to choose from a list of objects: Object prompts

Users can answer a prompt on an iPad or iPhone by selecting from a list of objects. The object prompt is more flexible than the attribute element prompt. Instead of choosing from a list of attribute elements, users can choose from a list of objects, such as attributes, metrics, and custom groups. Users can also choose which filter to apply to a report or document.

Use Object prompts when users want to control what data they view in a report or document. For steps to create an Object prompt, refer to the *Basic Reporting Guide*.

Prompting users for their location: Geo Location prompts

The Geo Location prompt lets users answer a prompt by using their device's current geographical location. Geo Location prompts are typically used to filter data in a Map widget. For example, a Map widget displays several locations as markers on the map display. You can choose to display only those map markers that are in the user's current city.

The location name that is returned by a Geo Location prompt is based on Google's geocoding. The prompt determines the user's longitude and latitude using the mobile device's GPS receiver, and passes this information to Google Maps to return information about the user's location.

You can also use an attribute element prompt to filter attribute elements based on the location of the mobile device. To support attribute element prompts, your MicroStrategy schema must include a location mapping attribute that includes attribute forms for latitude and longitude information.

For example, to filter a list of stores by the state in which the mobile device is located, provide a location mapping attribute that contains attribute forms for the state name, latitude, and longitude.

The attribute that provides the list of attribute elements that are filtered and displayed by the Geo Location prompt, also called the display attribute, does not have to be the same as the location mapping attribute. For example, the Customer State is both the display attribute and the location mapping attribute. When the prompt is displayed on a mobile device, the list of prompt answers is filtered to display the current state, as shown in the image below. Instead, if the display attribute is the Store attribute, and the location mapping attribute is Customer State, the list of prompt answers is filtered to display the stores in the current state, as shown in the image below on the right. Users can select stores from the list for which to display data.

You can:

- Create a prompt that automatically uses the device's current latitude and longitude. While creating the prompt, you must define two value prompts, one for latitude and one for longitude.

  For steps to create value prompts, see *To create a value prompt, page 178*.

- Create a prompt that filters an attribute element list using the current geographical location, by defining an attribute element prompt with the display style set to Geo Location.

  For steps to create an attribute element prompt, see *To create an attribute element prompt, page 183*.

Creating Barcode Reader prompts

The Barcode Reader prompt lets users scan or type an item's barcode using the device to answer a prompted report or document.

You can add a Barcode Reader prompt to a report or document by defining a prompt and setting its display style to Barcode Reader. The prompt is then displayed as a Barcode Reader when the report or document is executed, as shown below:
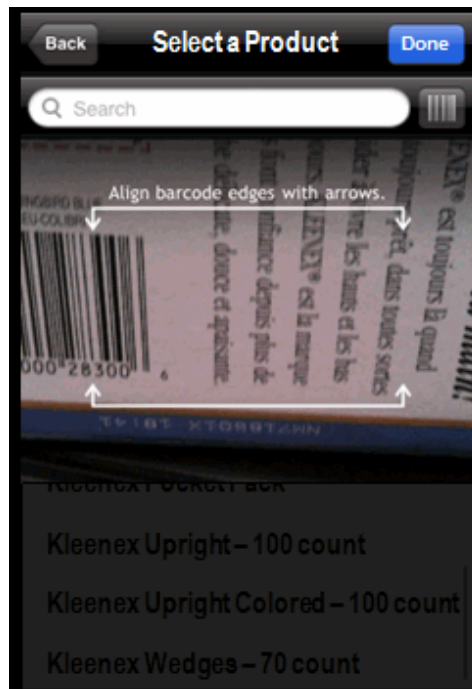
Some examples of how you can use the Barcode Reader prompt are:

- To spontaneously view a product's sales and inventory information.

- To view other locations where the product is stocked, as stored in your database.

- To compare the product's popularity with other products in the same category or with the same brand name.

The Barcode Reader prompt supports the following types of barcodes:

- QR code

- UPC-A

- UPC-E

- EAN-8

- EAN-13

You can do the following:

- To allow iPhone, iPad, and Android users to filter report results based on a product barcode, you can define a value prompt with the display style set to Barcode Reader.

  For steps to create a value prompt, see *To create a value prompt, page 178*.

- To allow iPhone, iPad, and Android users to search for an item in an attribute element list, you can define an attribute element prompt with the display style set to Barcode Reader. If an item's barcode matches the scanned or typed barcode, its name is returned in the search and can be selected to answer the prompt.

  For steps to create an attribute element prompt, see *To create an attribute element prompt, page 183*.

To support the scanning of barcodes using MicroStrategy Mobile, you must store the barcode data used in the associated prompt with a database data type that supports text data. MicroStrategy recommends using the varchar data type for your database to store the barcode data. For details about storing data in your warehouse, see the *Project Design Guide*.

Allowing users to filter data using filter panels

You can allow users to filter data within a dashboard-style document using a panel of selectors, called a filter panel. Users select different options in the filter panel, which changes the data that is displayed in the document.

You can customize the filter panel so that each filter in the panel is collapsible, similar to the Filters panel in dashboards. For steps, see the procedure below.

To make each filter in a filter panel collapsible

1. In MicroStrategy Web, open the document containing the filter panel in **Design** or **Editable Mode**.

2. Right-click the filter panel and select **Properties and Formatting**.

3. Under the Panel Stack area, select the **Show as collapsible panel (Mobile only)** check box.

Organizing transactions with tables on iOS devices

A transaction-enabled document contains embedded write-back functionality for the purposes of decision-making or initiating a transaction. Transaction Services-enabled documents allow you to update, delete, or create new entries in your database from within your Mobile app.

If you have multiple input object controls on a document displayed on an iOS device, you can create a transaction table to group and organize those controls. For general background information on transaction-enabled documents, including the prerequisites needed to work with them, see the *Transaction-enabled Documents* chapter of the *Report Services Document Creation Guide*.

You can create a transaction table that is displayed at all times in the document, or that pops up as an Information Window when a user taps an object.

The image below gives an example of a transaction table in an app for store inspectors. The inspector fills in all the fields to complete the transaction table, and then taps Submit to submit the changes.

The high-level steps to create and enable a transaction table are described below:

1. Create a transaction table, as described in *Creating a table, page 195*.

2. Link the transaction table to a Transaction Services-enabled report. Data from the input objects defined in the Transaction Services report is displayed in the table cells for users to edit.

3. Link each input object on the Transaction Services report to a cell in the transaction table.

4. Determine what type of input object control is displayed to users when they view the Transaction Services-enabled document. Analysts use these input object controls to edit the data displayed in a document. For example, users can type text in a text field, turn a switch on and off to specify a numeric value, select a value from a list, and so on.

   The following input control types are displayed as a list in a transaction table:

   • Check box

   • Likert Scale
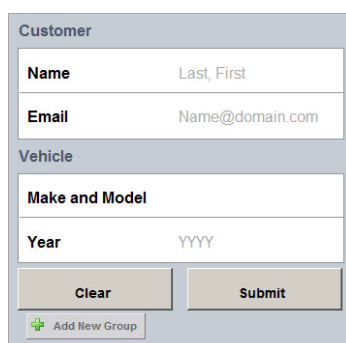
- Radio List

- Toggle

Only the MicroStrategy Mobile-specific procedure for creating a transaction table is included in this guide. For detailed procedures for the remaining steps to create transactions, including descriptions of the available input object controls, see the *Transaction-enabled Documents* chapter of the *Report Services Document Creation Guide*.

The parts of a table

A transaction cell is the basic component of a transaction table. A transaction cell contains an input object control, which are the objects that allow analysts to edit the data displayed in a document. For example, users can type text in a text field, turn a switch on and off to specify a numeric value, select a value from a list, and so on.

An example of a transaction table in Design Mode is show below:

A transaction cell displays a title and a placeholder, as described below:

- **Cell title**: The title or description of the cell. An input object control cell displays the value entered by the user. In the example above, Name, Email, and Year are cell titles.

- **Cell placeholder text**: A hint for the user about the format for an input object control. In the example above, "Last, First" and "Name@domain.com" are placeholders. A placeholder is optional. In the

example, "Make and Model" does not have a placeholder.

If an input object control is required, the placeholder text displays "Required" automatically for the user on a mobile device. If the placeholder is not empty, the text "(Required)" is added to the placeholder text. When you configure the transactions, you select whether the control is required.

A transaction table contains at least one group. Groups collect related cells together under a descriptive title. The example above contains two groups, Customer and Vehicle, which separate and give context to the cells that require customer information and cells that require vehicle information.

You can create a group that is displayed to the document designer but hidden from users. For example, you may create a cell that contains a macro to gather the mobile device's ID. Since no input is required from the user, only the mobile device, you may want to hide the group. To hide a group, name the group `hidden`.

A transaction table also displays a Clear button and a Submit button, or Cancel and Submit if the transaction table is used as an Information Window.

- The **Submit** button submits the data in the transaction table. If the transaction table is displayed as an Information Window, the Information Window is also closed.

- The **Clear** button erases all the information added to the transaction table, allowing the user to start again.

- The **Cancel** button closes the Information Window without submitting the data in the transaction table.

You can customize the button names, but they are referred to as Clear and Submit throughout this chapter. By default, changes are cleared or submitted automatically, as soon as the button is tapped. You can require that a confirmation message is displayed after the Clear or Submit button is tapped.

Creating a table

Prerequisites

- You must have Transaction Services.

- You must have the Web Configure Transaction privilege.

- The Transaction Services report that you want to link to the Grid/Graph or text fields has already been created. This report must contain the input object for each value that you want to allow users to change. For steps to create a Transaction Services report, see the *Advanced Reporting Guide*.

The high-level steps to creating a table are listed below, with links to the appropriate steps.

1. Add a table. See *Adding a table to a document, page 196* for steps to create and format a table. The new table contains a single cell in a single group, and the Clear and Submit buttons. You can customize the actions and name of the buttons, as described in the procedure.

2. Add groups to the table. A group is a collection of related cells. You can add as many groups as needed to the table. If the table contains multiple groups, you can change the order that the groups are displayed in. For steps, see *Adding and moving groups in a table, page 203*.

3. Add transaction cells to the table. You can add as many transaction cells as needed. If the table contains multiple cells, you can change the order that the cells are displayed in. For steps, see *Adding or moving cells in a table, page 204*.

Adding a table to a document

To add a table

1. In MicroStrategy Web, open the document in Design Mode or Editable Mode.

2. From the **Insert** menu, select **Table Control (Mobile)**. When you move the cursor to the Layout area, the pointer becomes crosshairs. Click in the desired location in the Layout area. If you click and drag in the Layout area, you can size the table. An empty table container is added to the document, with a single cell in a single group, and the Clear and Submit buttons, as shown below:
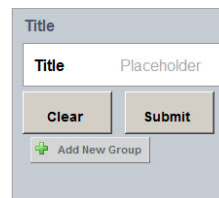
To change the group title

3. To change the group title from the default of Title, double-click the group title text, and type your title. Press ENTER to add the text.

   - If you do not want to display a title for this group, double-click the group title text and delete the text.

   - If you want to hide this group from users, type `hidden` as the title. The title is not case-sensitive, so you can use `Hidden` or `HIDDEN` as well.

To display the table as an Information Window

A transaction table can either be displayed at all times in the document, or it can pop up as an Information Window when a user taps an object. To use an Information Window, follow the steps

below. To display a transaction table at all times in the document, skip to *Creating a table, page 195*.

4. Add the text field, image, or button that will open the transaction table in an Information Window.

5. Right-click the newly added object, and select **Properties and Formatting**. The Properties and Formatting dialog box opens.

6. From the left, click **General**.

7. From the **Panel Stack** drop-down list, select the panel stack to use as the Information Window.

8. Click **OK** to save your changes.

9. Right-click the table and select **Properties and Formatting**. The Properties and Formatting dialog box opens.

10. From the left, click **General**.

11. Select the **Use as Information Window** check box.

12. To display a title bar in the Information Window, complete the following steps:

    a. Select the **Show Title Bar** check box.

    b. From the **Title** drop-down list, select **Custom Title**.

    c. Type a title in the **Title** field. This text is used as the title of the Information Window.

13. To specify how to open the Information Window on an iPad, select one of the following **Window mode** options:

    - To open the Information Window by popping it up, select **Appear** (default).

If you select Appear, you can specify the location of the Information Window on an iPad. Select one of the following options from the **Placement** drop-down list:

- To display the Information Window in the best position, select **Automatic** (default).

- To display the Information Window at the position of the panel stack, select **Fixed**.

- To display the Information Window above the selected object (for example, the item in the selector or the attribute in the grid), select **Above**.

- To display the Information Window below the selected object, select **Below**.

- To display the Information Window to the left of the selected object, select **Left**.

- To display the Information Window to the right of the selected object, select **Right**.

- To open the Information Window by flipping it up, like turning over a card, select **Flip Up**.

- To open the Information Window by gradually increasing its size, select **Scale Up**.

- To open the Information Window by sliding it from an edge of the screen, select **Slide**.

  If you select Slide, you can specify which edge to slide the Information Window from, on an iPad or iPhone. Select one of the following options from the **Position** drop-down list:

- **Right** (default)

- **Left**

- **Above**

- **Below**

To customize the buttons' name and actions

14. If the Properties and Formatting dialog box is not open, right-click the table and select **Properties and Formatting**. The Properties and Formatting dialog box opens.

15. From the left, select **Buttons**.

16. You can change the name displayed on the Submit button, by replacing the default text in the **Display text** field in the Submit button area.

17. You can choose to display a message asking for confirmation when a user taps the Submit button, before the user's changes are submitted. Do one of the following:

- To display the confirmation message, select the **Require Confirmation** check box in the Submit button area.

- To submit changes without displaying a confirmation message, clear the **Require Confirmation** check box in the Submit button area.

18. You can determine which action is performed after a user submits his changes. Select one of the following under **Subsequent Actions**:

- To return to the document without performing any additional actions, select the **No subsequent action** option.

- To refresh the display of the document, select the **Refresh the current document** option.

- To run a specific report or document, complete the following steps:

a. Select the **Run a new report or document** option. Click **…** (the browse button), navigate to and select the report or document you want to run, and click **OK**.

b. Specify whether the report or document will be executed using data cached on the mobile device. Do one of the following:

- To run the report or document without using data cached on the mobile device, select the **Force Live Execution** check box.

- To run the report or document using data cached on the mobile device, clear the **Force Live Execution** check box.

c. You can choose to use the same prompt answers that were chosen in the source document to answer the prompts in the target report or document. To use the same prompt answers, select the **Answer prompts with the same answers as the source** check box. If both the source and target report/document contain the same prompts, the user will not be asked to provide prompt answers. The user will still be prompted for any prompts that exist in the target but that do not exist in the source.

- To display a custom confirmation message after changes are submitted, select the **Display message after submitting** option. Type the message in the field below the option.

- A Transaction Services-enabled document that is pre-cached is run in the background, and its results are stored on the mobile device on which it is executed, improving the speed with which the document is run. You can choose to update document results cached on a mobile device after the user submits his changes, by using the Invalidate Mobile Device Cache setting to mark a document's results as in need of updating.

If the document is defined to be pre-cached, the document will be automatically pre-cached each time the user submits his changes. If the document is not defined to be pre-cached, the document will be automatically executed using data cached on the Intelligence Server the next time the document is run, or executed against the data source if no cached data is available. For background information on pre-caching, see *Administering MicroStrategy Mobile*. Do one of the following:

- To have the document pre-cached each time the user submits his changes, select the **Invalidate Mobile Device Cache** check box.

- To allow the user to submit his changes without marking the data cached on the mobile device as in need of updating, clear the **Invalidate Mobile Device Cache** check box.

19. You can change the name displayed on the Clear button (or Cancel button, if the table is displayed as an Information Window), by replacing the default text in the **Display text** field in the Clear button area (or Cancel button area).

20. You can choose to display a message asking for confirmation when a user taps the Clear button (or Cancel button, if the table is displayed as an Information Window). Do one of the following:

- To display the confirmation message, select the **Require Confirmation** check box in the Clear button area (or Cancel button area).

- To discard changes without displaying a confirmation message, clear the **Require Confirmation** check box in the Clear button area (or Cancel button area).

To format the table

21. In the Properties and Formatting dialog box, from the left, select **Color and Lines**.

22. From the first drop-down list at the top of the dialog box, select **Table**. The next drop-down list is then automatically displayed as Body.

23. To change the background fill of the table, select the color from the **Color** drop-down list.

24. To change the border around the table, select one of the following from the **Borders** options:

   • To hide the table border, select **None**.

   • To use a single color for the entire border, select **All**. From the first drop-down list, select the type of border (thick, thin, and so on). From the second drop-down list, select the border's color.

   • To use different colors on different sides of the table, select **Custom**. For each side (Top, Bottom, Left, and Right), select the border type and the border color.

25. From the left, select **Font**.

26. You can change the font for the cell title and value for all cells in the table, and for all the group titles. For each part that you want to format, follow the steps below:

   a. From the first drop-down list, select **Cells** or **Groups**.

   b. From the second drop-down list, select the part of the table to format. Your options are:

      • **Title** (available for cells and groups)

> - **Value** (available for cells)

   c. Format the font, including the font type, color, size, and so on.

27. Click **OK** to save your changes.

Adding and moving groups in a table

A group organizes cells related to each other so that they appear together in a table. A table can contain multiple groups or only a single group.

Prerequisite

Before you can add a group to a table, you must have already created a table, as described in *Adding a table to a document, page 196*. When you create a table, a group is automatically created in the table.

To add or move a group in a table

1. In MicroStrategy Web, open the document in Design Mode or Editable Mode.

2. Click the **Add new group** button in the table. A new group is added to the table, with a single cell.

3. To change the group title from the default, double-click the group title text, and type your title. Press ENTER to add the text.

    🛈 If you do not want to display a title for this group, double-click the group title text and delete the text.

4. If you have multiple groups in a table, you can change the order that the groups are displayed in the table. Select a group to move, by clicking the group, not the group title or a cell. Then drag and drop the group to its new position. As you drag the group, a blue arrow is displayed to indicate its new position.

Deleting a group

Prerequisite

The table must contain at least two groups to delete a group, because a table must always have at least one group.

To delete a group from the table

1. In MicroStrategy Web, open the document in Design Mode or Editable Mode.

2. Right-click the group to delete, and select **Delete Group**.

    The Delete Group option is not available if the table contains a single group.

Adding or moving cells in a table

You can add as many cells as necessary. If you add multiple cells, you can change the order of the cells.

Prerequisites

• Before you can add a cell to a table, you must have already created a table, as described in *Adding a table to a document, page 196*.

• If you want to add the cell to a group in the table, you must have already created the group. See *Adding and moving groups in a table, page 203* for steps.

    When you create a table or a group, a default cell is added as well. You can configure the cell as though you added it yourself, by following the procedure below, skipping over the step to add a new cell.

To add or move a cell in a table

1. In MicroStrategy Web, open the document in Design Mode or Editable Mode.

2. Hover the cursor over the group to add the cell to. Click the **Add new cell** button that is displayed. A new cell is added to the table, displaying Title and Placeholder in the cell.

3. The cell title is the description for the cell. To change the cell title from the default, double-click the **Title** text, and type your title. Press ENTER to add the text.

4. The placeholder text contains a hint for the user about the format for an input object control. For example, if the input object control is a login, the placeholder text can be domain/user or user@domain.com. To change the text from the default, double-click the **Placeholder** text, and type the new text. Press ENTER to add the text.

To move a cell

5. Select the cell to move, by clicking the cell, not the cell title or other component. Then drag and drop the cell to its new position. As you drag the cell, a yellow bar is displayed to indicate its new position.

After you have created the table, you need to enable transactions for the document, as described in the *Transaction-enabled Documents* chapter of the *Report Services Document Creation Guide*.

Displaying data as interactive visualizations: Widgets

A widget is a rich, graphical display of the results of data, which allows users to visualize data in different ways than they can when using traditional reports. Widgets are sophisticated visualization techniques that can combine with interactivity to enable a better understanding of the data.

Use the following methods to define widgets for mobile devices:

- Display reports as widgets. This is recommended if you want to display only one widget on the screen. Note that certain features, such as Information Windows for the Map widgets, require you to create widgets in documents.

  To display reports as widgets, you need to use the Custom Visualizations Editor in MicroStrategy Web. For steps, see the MicroStrategy Web Help.

- Add widgets to documents. This is recommended if you want to display additional information on the same layout as the widget. Instructions are included in this chapter to create and add widgets to documents.

Adding widgets and visualizations to documents for mobile devices

The following table contains a list of mobile widgets, the mobile devices on which they can be displayed, and links to background information for each widget.

Widgets other than the mobile widgets in this table are displayed as grid or graph reports on mobile devices.

Widget	Description	Displays on	Link
Data Cloud widget	Displays the names of attribute elements in various font sizes to depict the differences in metric values.	iPhone, iPad	*Displaying a Data Cloud widget, page 210*
Date Selection widget	Allows users to view data about events on an interactive calendar.	iPad, Android tablet	*Displaying an interactive event calendar: Date Selection widget, page 210*
Graph Matrix Visualization	Displays data using a variety of graph styles, such as the line graph, bubble graph, or grid.	iPad	*Displaying data in an interactive graph: Graph Matrix widget, page 215*
Heat Map widget	Allows users to visualize data as rectangles color-coded and sized to depict the differences in metric values.	iPad, Android	*Displaying data in a Heat Map widget, page 216*
Image Layout widget	Allows users to visualize data as colored areas or bubble markers overlaid on an image.	iPad, Android	*Displaying data as an overlay on an image: Image Layout widget, page 217*
Image Viewer widget	Allows users to browse through a collection of images.	iPhone, iPad, Android	*Displaying images: Image Viewer widget, page 219*
Interactive Grid widget	Displays data in a compact tabular layout.	iPhone, iPad, Android	*Displaying data in rows and columns: Interactive Grid widget, page 222*
Map widget	Allows users to search and view	iPhone,	*Displaying*

Widget	Description	Displays on	Link
	information for locations on a map.	iPad, Android	*geographical data: Map widget, page 227*
Microcharts widget	Allows users to analyze trends at a glance using compact charts and line graphs.	iPhone, iPad, Android	*Visualizing trends: Microcharts widget, page 249*
Multimedia widget	Allows users to download and view multimedia files, such as videos, PDFs, and ePub books.	iPhone, iPad, Android	*Downloading and viewing multimedia files: Multimedia widget, page 254*
Network widget	Allows users to analyze relationships between items and clusters as a network of connected nodes.	iPad	*Visualizing relationships: Network widget, page 256*
Photo Uploader widget	Allows users to upload images by taking a new image or using an existing image on their mobile device.	iPhone, iPad, Android	*Uploading images: Photo Uploader widget, page 257*
RSS Reader widget	Allows users to view and update an RSS news feed.	iPhone, iPad	*Displaying RSS feeds: RSS Reader widget, page 262*
Survey widget	Allows users to interact with the survey in a Transaction Services-enabled document and submit their answers, which are then stored in your data source.	iPad	*Gathering data from users: Survey widget, page 267*
Timeline widget	Allows users to view events or important milestones in the status of a	iPad	*Displaying a Timeline widget,*

Widget	Description	Displays on	Link
	product.		*page 269*
Time Series widget	Displays data for a specific period of time in a line graph.	iPhone, iPad, Android	*Displaying data trends: Time Series widget, page 275*
Video Player	Play video directly in a document. Videos can be cached for offline viewing.	iPhone, iPad	*Downloading and playing videos: Video Player widget, page 280*

> If you are designing widgets for an iPhone or Android device, you can determine whether the widget takes up the entire screen. For steps, see *Displaying widgets using the entire screen on mobile devices, page 283*.

Some widgets are also available as interactive visualizations, which allows you to quickly create a customized, interactive dashboard.

In a dashboard, users can add or remove attributes and metrics, change the type of visualization that is used, or create new filters and thresholds in the dashboard on-the-fly. Consider using dashboards when your users want a high degree of interaction with their data. Dashboards can be especially helpful in strategic business meetings to spontaneously discover the answer to any business queries that come up.

You can create visualizations that highlight or filter other visualizations in a dashboard when a user taps on an attribute element in the visualization.

For steps to create a dashboard, see the *MicroStrategy Web Help*.

The following visualizations can be viewed in a dashboard on an iPad:

• Density Map visualization

• Grid visualization

- Graph visualization

- Graph Matrix visualization

- Heat Map visualization

- Image Layout visualization

- Map visualization

- Map with Areas visualization

- Network visualization

Displaying widgets as grids or graphs

You can determine whether mobile widgets are displayed as widgets or grid or graph reports on mobile devices.

Displaying a Data Cloud widget

A Data Cloud widget for the iPhone and iPad displays the names of attribute elements in various font sizes to depict the differences in metric values between the elements. This type of widget allows users to quickly identify the most significant positive or negative contributions.

A Data Cloud widget is a list of attribute elements. The first metric on the widget's template determines the font size for the attribute elements. A bigger font for an element indicates a larger metric value.

You can also define an Information Window that displays when an attribute element is tapped. For instructions on creating an Information Window, see *Providing additional information to users: Information Windows, page 149*.

Displaying an interactive event calendar: Date Selection widget

The Date Selection widget displays events in an interactive calendar in either a Month, Week, or Day view on an iPad. An example of a Date Selection widget is shown below:

Use the Date Selection widget as a calendar of events or appointments within your app. Users can select an event to display an Information Window or open a link containing information on the event. If you have Transaction Services, users can then edit or delete events.

For instructions on creating an Information Window, see *Providing additional information to users: Information Windows, page 149*.

You can also use the Date Selection widget as a filter for the data in your dashboard. Users can select an event on the widget and automatically update the rest of the dashboard with data that relates to the event. To do this, you define the Event attribute as a selector.

Prerequisites

For a Grid/Graph to be used as a Date Selection widget, it must include at least two attributes on the rows. These attributes must meet the following criteria:

• The first attribute represents each day displayed in the calendar, and must contain elements of the Date data type.

- The second attribute provides the events displayed in the calendar, and uses the following attribute forms:

    ○ The first attribute form contains a description of the event.

    ○ The second attribute form (optional) contains the image displayed for the event when the widget is shown in Day View. This attribute form must be of the image data type.

    ○ The third attribute form (optional) contains the image displayed for the event when the widget is shown in Week View. This attribute form must be of the image data type.

- The third attribute (optional) provides the category name of each event in the calendar, and is used to color-code the events. It uses the following attribute forms:

    ○ The first attribute form contains the description of the category.

    ○ The last attribute form (optional) contains the color in which to display the category, stored as a hex value. The value must be of the form 0xFFFFFF or FFFFFF.

    Additional attributes, if any, are displayed when a user taps on the event in the calendar.

You can add objects from multiple datasets to the Grid/Graph containing the widget. You must have the correct privileges and the project must allow Grid/Graphs to use multiple datasets. For steps to allow Grid/Graphs to use multiple datasets, see the *Adding Text and Data* chapter of the Document Creation Help.

To create a Date Selection widget for mobile devices

1. In MicroStrategy Web, open the document in Design or Editable Mode.

2. From the **Insert** menu, point to **Widgets**, then **Mobile**, and select **Date Selection**.

3. Click the location on your document where you want to place the widget. The Grid/Graph containing the widget is displayed.

4. Optionally, resize the widget by clicking and then dragging its handles.

5. From the Dataset Objects panel on the left, select attributes and drag them on to the widget. Place at least two attributes on the Grid/Graph's rows, as described in the prerequisites above.

Formatting a Date Selection widget

You can format a Date Selection widget by:

- Selecting whether events in the Month view are grouped by day or week. For steps, see *To select the grouping of events in the Month view*.

- Automatically assigning colors to event categories. The colors are based on the elements of the categorization attribute of the widget's dataset. For steps, see *To automatically assign colors to event categories, page 214*.

- Specifying the color of each event category. For steps, see *To assign a specific color to each category, page 214*.

- Selecting which view (month, week, or day) the widget displays initially. For steps, see *To set the default display view*.

Prerequisite

The following procedures assume that you have already created the Date Selection widget you want to modify.

To select the grouping of events in the Month view

1. Right-click the widget, then select **iPad Properties**. The iPad Date Selection dialog box is displayed.

2. From the **Month view is displayed by** drop-down list, select one of the following:

   - **Day**: When the widget is shown in the Month view on an iPad, events are grouped by day.

   - **Week**: When the widget is shown in the Month view on an iPad, events are grouped by the week.

3. Click **OK** to save your changes.

To automatically assign colors to event categories

1. Right-click the widget, then select **iPad Properties**. The iPad Date Selection dialog box is displayed.

2. From the **Color events by** drop-down list, select **Attribute**.

3. From the **Series color** palettes, select the colors you want to use to display the event categories. Each color will automatically be assigned to a category and displayed when the widget is viewed on a mobile device.

4. Click **OK** to save your changes.

To assign a specific color to each category

1. Right-click the widget, then select **iPad Properties**. The iPad Date Selection dialog box is displayed.

2. From the **Color events by** drop-down list, select **Attribute Form**. The events are color-coded based on the attribute form that contains the

color for each category.

3. Click **OK** to save your changes.

To set the default display view

1. Right-click the widget, then select **iPad Properties**. The iPad Date Selection dialog box is displayed.

2. From the **Default View** drop-down list, select one of the following:

   • Month (default)

   • Week

   • Day

3. Click **OK** to save your changes.

Displaying data in an interactive graph: Graph Matrix widget

The Graph Matrix widget allows you to quickly analyze various trends across several metric dimensions. The widget consists of several line graphs that allow users to analyze and compare trends in metric data.

An example of the Graph Matrix widget is shown in the image below.
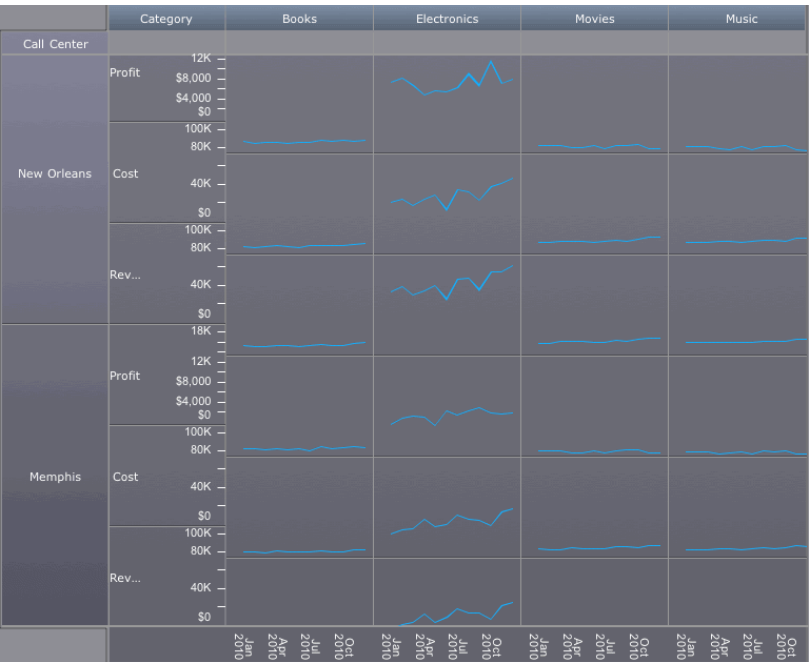
You can also define an Information Window that displays when a graph is tapped. For instructions on creating an Information Window, see *Providing additional information to users: Information Windows, page 149*. You can define a link in the widget to open a report or another document.

You can also use the Graph Matrix visualization in dashboards. For information on creating analyses, refer to the *MicroStrategy Web Help*.

Displaying data in a Heat Map widget

The Heat Map widget for the iPad and Android tablet displays elements as rectangles and lets users quickly grasp the state and impact of a large number of variables at one time. An example of the Heat Map widget on the iPad is shown below:
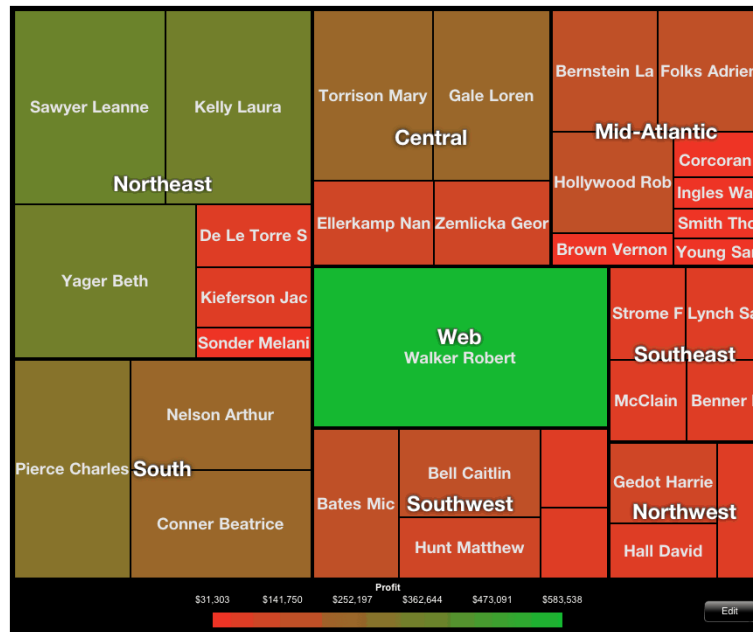
You can also use the Heat Map visualization in dashboards. For information on creating analyses, refer to the MicroStrategy Web Help.

By default, the header for each group in a Heat Map widget is displayed in the middle of the group. For example, in the Heat Map widget above, Northeast is displayed in the middle of all elements that belong to Northeast. For steps to display headers at the top of the widget, see the procedure below.

You can define an Information Window that displays when a rectangle is tapped. For instructions on creating an Information Window, see *Providing additional information to users: Information Windows, page 149*.

You can create a link on one of the attributes in the widget that opens a report or another document.

Displaying data as an overlay on an image: Image Layout widget

You can add an Image Layout widget to a document to display an image overlaid with colored areas or bubble markers. For example, you can display a map of the United States, with a bubble marker displayed over each state. You can have states with a high number of stores displayed using large

bubble markers, and states with a low number of stores displayed using small bubble markers. As another example, you can display the layout of a store in the widget, with each aisle displayed as a separate region, then have MicroStrategy automatically color each aisle based on the number of visits each aisle receives. The image below shows an Image Layout widget with a map of a store, in which each section of the store is displayed as a separate colored region.
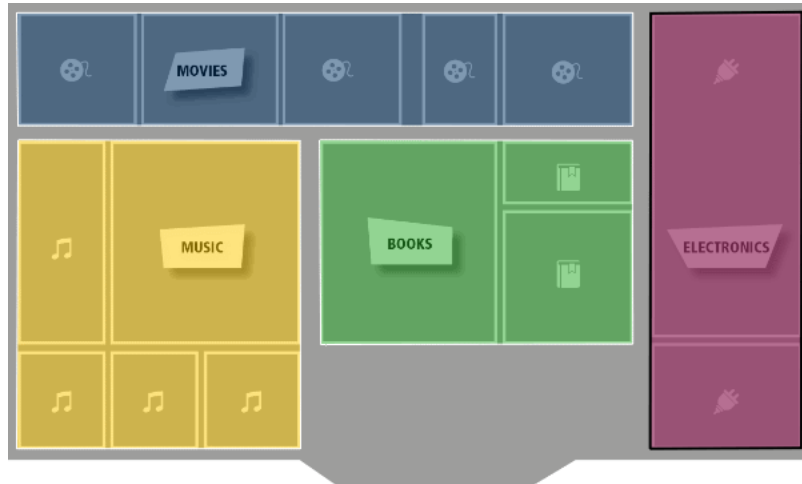
You can display the Image Layout widget on an iPad or Android tablet with MicroStrategy Mobile.

A shape file is an HTML file that contains the image that you want to display in the widget, as well as the location of each bubble marker or area you want to display on top of the image. MicroStrategy provides several default shape files for you to choose from, including a map of countries of the world and a map of states in the United States.

You can define your own shape file for use in the widget, such as the layout of a store or floor in a building, using the same steps as you would to customize an Image Layout visualization. You can also create multiple shape files and have the user choose which shape file displays in the widget.

You can also define an Information Window that displays when a marker or an area is tapped. For instructions on creating an Information Window, see *Providing additional information to users: Information Windows, page 149*.

Displaying images: Image Viewer widget

You can use the Image Viewer widget to display images and image description in a document on an iPhone, iPad, or Android device with MicroStrategy Mobile. Users can zoom in and out of the images.

For iPhone and iPad, you can choose to display the images in a slide show, filmstrip, or matrix layout, specify the captions to display for each image, format the background and border color of the widget, and so on.

You can define:

- An Information Window that displays when an image is tapped. For instructions on creating an Information Window, see *Providing additional information to users: Information Windows, page 149*.

- A link in the widget to open a report or another document.

Prerequisites

You must create an attribute to place on the widget's Grid/Graph, with the following attribute forms:

- The first attribute form contains the location in which each image is saved.

- The second attribute form contains a description of each image.

- The third attribute form contains the unique numeric ID of each image.

To add an Image Viewer widget to a document

1. Open the document in Design or Editable Mode.

2. From the **Insert** menu, point to **Widgets**, then point to **Mobile**, and select **Image Viewer**.

3. Click the location on your document where you want to place the widget. The Grid/Graph containing the widget is displayed.

4. Optionally, resize the widget by clicking and then dragging its handles.

5. From the Dataset Objects panel on the left, select attributes and metrics, and drag them on to the Grid/Graph, as described in the prerequisites above.

To choose the attribute forms displayed for an attribute in the widget, right-click the header of the attribute, point to **Attribute Forms**, then select the attribute forms to display.

Configure the widget's display properties

1. Right-click the widget, then select **Properties and Formatting**. The Properties and Formatting dialog box opens.

2. From the left, select **Widget**.

3. Click the **Widget Properties** icon. The Image Viewer Properties dialog box opens.

4. From the **Display Style** drop-down list, select the display style to use to show images in the widget, as follows:

• To display the images in an interactive slideshow, select **Slideshow** (default). Users can switch between images by performing a horizontal swipe motion on the mobile device.

• To display the images in a filmstrip layout, select **Filmstrip**. Users can scroll through images vertically or horizontally, as determined by the Scroll Direction option described below.

• To display the images in a table layout, with evenly spaced rows and columns, select **Matrix**. You can specify the number of rows and columns displayed in the table using the Number of Rows and Number of Columns options described below.

5. You can determine whether to display images in the widget in a vertical or horizontal layout. This option is only available if the Display Style option is set to Filmstrip. From the **Scroll Direction** drop-down list, select one of the following:

- To display images in a vertical layout, select **Vertical** (default). Users can perform a vertical swipe motion on the mobile device to scroll through the images.

- To display images in a horizontal layout, select **Horizontal**. Users can perform a horizontal swipe motion on the mobile device to scroll through the images.

6. You can determine how many rows of images are displayed in the widget. In the **Number of Rows** field, type the number of rows to display. This option is only available if the Display Style option is set to Matrix.

7. You can determine how many columns of images are displayed in the widget. In the **Number of Columns** field, type the number of columns to display. This option is only available if the Display Style option is set to Matrix.

8. From the **First Caption Line** drop-down list, select the attribute form that contains the first line of captions you want to display for images in the widget.

9. From the **Second Caption Line** drop-down list, select the attribute form that contains the second line of captions you want to display for images in the widget.

10. You can specify the default action (such as drilling on an attribute or opening a report or document) to perform when the user taps an image caption in the widget. From the **Default Action Form** drop-down list, select an attribute form. The action defined for this attribute form will automatically be performed when the user taps the caption.

11. From the **Background Color** palette, select the background color of the widget by doing one of the following:

- To display a transparent background color, click **No Fill**.

- To display a solid background color, select the background color from the palette. You can access additional colors by clicking **More Colors**.

12. From the **Border Color** palette, select the color of the border to display around the images in the widget by doing one of the following:

- To display the borders as transparent, click **No Fill**.

- To display a solid border color, select the border color from the palette. You can access additional colors by clicking **More Colors**.

13. From the **Border Width** drop-down list, select the thickness of the border to display around the images. The default value is 5 pixels.

14. Click **OK** to return to the Properties and Formatting dialog box.

15. Click **OK** to save the changes.

Displaying data in rows and columns: Interactive Grid widget

The Interactive Grid widget allows you to display data in a compact tabular layout on an iPhone, iPad, or Android device. Attributes and metric values are displayed in columns in the widget, as shown below. You can specify multiple display options for the widget, such as whether to apply banding to the rows in the widget, whether to display multiple attributes or metrics in a column as stacked together in a single row or allow users to toggle between the values displayed in the column, and so on.

Category	Profit Forecast	Revenue
Jan 2010		
Books	$9,005	$37,161
Electronics	$68,677	$354,333
Movies	$4,684	$57,979
Music	$3,670	$52,751
Feb 2010		
Books	$10,781	$44,810
Electronics	$82,133	$424,982
Movies	$6,009	$71,786
Music	$5,100	$68,478

You can allow users to directly edit the data displayed in the widget using a mobile device. For example, you create a widget to display a list of time off requests. A user can tap a button next to each request to display a check mark for approved requests and an X for rejected requests, then submit their changes to their data source. To accomplish this, you must link the widget's Grid/Graph to a Transaction Services report. For steps and background information about Transaction Services, see the *Advanced Documents* chapter in the Document Creation Help.

You can allow users to perform an action when they tap an attribute or metric in the widget on a mobile device. To do this, you must assign the action to the attribute or metric on the widget's Grid/Graph in Web. For example, if several customer regions are displayed in an Interactive Grid widget, you can allow users to tap the name of a customer region to update the data displayed in another grid in the document. Only one action can be performed for each attribute or metric. If more than one action is enabled for an attribute or metric, the action with the highest priority is performed. You can enable the following actions for a value in the widget, in order of highest to lowest priority:

- Edit data for the attribute or metric, by displaying the attribute or metric as an input object control in a Transaction Services-enabled document.

- Use an attribute or metric in the widget as a selector. To do this, you must define the attribute or metric as a selector on the widget's Grid/Graph.

- Open a link to a report or document.

- Drill on an attribute element.

The steps to add an Interactive Grid widget to a document follow.

Prerequisites

For a Grid/Graph to be used as an Interactive Grid widget, it must meet the following requirements:

- At least one attribute on the rows. The elements of this attribute are displayed in the first column of the widget.

- At least one metric on the columns. The metric values are displayed in additional columns in the widget.

You can add objects from multiple datasets to the Grid/Graph containing the widget. You must have the correct privileges and the project must allow Grid/Graphs to use multiple datasets. For steps to allow Grid/Graphs to use multiple datasets, see the *Adding Text and Data* chapter of the *Document Creation Guide*.

To create and add an Interactive Grid widget to a document

1. Open the document in Design or Editable Mode.

2. From the **Insert** menu, point to **Widgets**, then **Mobile**, and select **Interactive Grid**.

3. Click the location on your document where you want to place the widget. The Grid/Graph containing the widget is displayed.

4. Optionally, resize the widget by clicking and then dragging its handles.

5. From the Dataset Objects panel on the left, select attributes and metrics, and drag them on to the Grid/Graph, as described in the prerequisites above.

Configure the widget's display properties

1. Right-click the widget, then select **Properties and Formatting**. The Properties and Formatting dialog box opens.

2. From the left, select **Widget**.

3. Click the **Widget Properties** icon . The Interactive Grid Properties dialog box opens.

4. If you added more than one attribute to the widget, you can group the data displayed in the widget based on the first attribute in the widget's Grid/Graph. Do one of the following:

    *   To group the data displayed in the widget, do the following:

        a. Select the **Apply Grouping to** check box. The first attribute on the widget's Grid/Graph is automatically used to group the data when the widget is viewed.

        b. You can change the background color used for the attribute elements in the grouping. From the **Grouping background** drop-down list, select the color you want to use as the background for the attribute elements. In the example image above, Grouping background is set to gray.

        c. To remove the grouping background you applied, select **No Fill**.

        d. You can change the font size used for the attribute elements in the grouping. From the **Grouping Font Size** drop-down list, select the size of the font you want to use. In the example image above, Grouping font size is set to 16.

e. To change the font size of the column headings, from the **Header Font Size** drop-down list, select the size of the font you want to use.

f. To change the font size of the data displayed in the Interactive Grid, from the **Values Font Size** drop-down list, select the font size you want to use.

- To display the widget without grouping its data, clear the **Apply grouping to** check box.

5. From the **Color Theme** drop-down list, select a color theme to use to display the background color, border color, and header color of the widget.

6. By default, the rows of the widget are not banded. To apply banding to the widget, select the **Banding** check box.

7. By default, the width of the columns in the widget is automatically determined. To manually specify the width of each column, clear the **Automatic column sizing** check box. In the **Width (%)** fields, specify the width of each column as a percentage. The widths for all columns should add up to 100.

8. You can select a default action (such as drilling on an attribute, opening a report or document, or acting as a selector) to perform for attributes and metrics that have no action defined on the widget's Grid/Graph. From the **Default Action Form** drop-down list, select an attribute. The action defined for this attribute will automatically be performed when a user taps a value in the widget for which no action is explicitly defined.

It is recommended that you assign an action to only one attribute form in the widget. For example, if you want one attribute to act as a selector, ensure that drilling is disabled for the Grid/Graph, and that the attribute does not link to another report or document.

9. If you place multiple attributes or metrics in a column, you can choose whether to display each attribute element or metric value stacked together in a single row in the widget, or to allow the user to tap the header of a column to change which attribute or metric value is displayed. Do one of the following:

   - To allow users to tap a column header to change which object is displayed, select the **Toggle** check box.

   - To display each object as stacked values in a single row, clear the **Toggle** check box. Column headers are not displayed when values are displayed as stacked.

10. You can create, rearrange, or delete columns in the widget:

    - To rearrange report objects within the columns, click a report object and drag it to a new location.

    - To add a new column to the widget, click **Add Column**. The new column is added and displayed.

    - To delete a column, click ☒ to the right of the column.

       ℹ️ The first two columns in the widget are added to the widget by default and cannot be deleted.

11. Click **OK** to return to the Properties and Formatting dialog box.

12. Click **OK** to save the changes.

Displaying geographical data: Map widget

With a Map widget, users can search and view information for locations on a map on an iPhone, iPad, or Android device. You can specify the geographical location of each location on the map by either supplying the location as a spatial point, or by providing separate values for the longitude and latitude.

Locations on the map are displayed as map markers, bubble markers, color-coded areas, or points along a path displayed on the map. Tapping a location displays an Information Window with additional details about the selected location, as shown below:
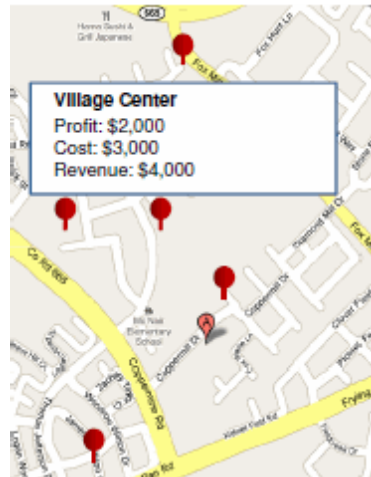
You can display data in the Map widget in the following ways:

- Display your data using static images as map markers. You can define a threshold on this metric to change the image used for the map markers. For information on defining thresholds on a metric, see the *MicroStrategy Web Help*.

- Display your data using bubble markers. The size of each bubble marker is automatically determined based on the value of the metric on the columns of the widget. You can define a threshold on this metric to change the color of the bubble markers. For information on defining thresholds on a metric, see the *MicroStrategy Web Help*.

- For iPhone and iPad documents, display your data as areas color-coded based on the population density of locations on the map. For example, you can display areas with a high concentration of stores in red, and areas with a low concentration of stores in blue.

- Display your data as points on a path displayed on the map. The line used to represent the path is displayed as thicker for larger metric values and

thinner for smaller metric values. For example, you can display ridership at different stops along a train route, with the most popular stations displayed with the thickest lines extending from the station.

- For iPhone and iPad documents, color-code geographical regions, based on your data. For example, you can give each country displayed on a map a different color, based on their type of government. MicroStrategy provides maps with pre-defined regions, such as countries of the world or states in the US.

- Create and format a custom Information Window, which is a pop-up window that displays additional data, for the Map widget. For steps to define an Information Window, see *Providing additional information to users: Information Windows, page 149*.

- Filter the locations displayed on a Map widget to view only those locations that meet certain criteria. For example, if store locations are displayed on the widget, you can limit the displayed stores to only those within a specified zip code. For more information on filtering by geographical location, see *Using the Geo Location prompt in the Map widget, page 241*.
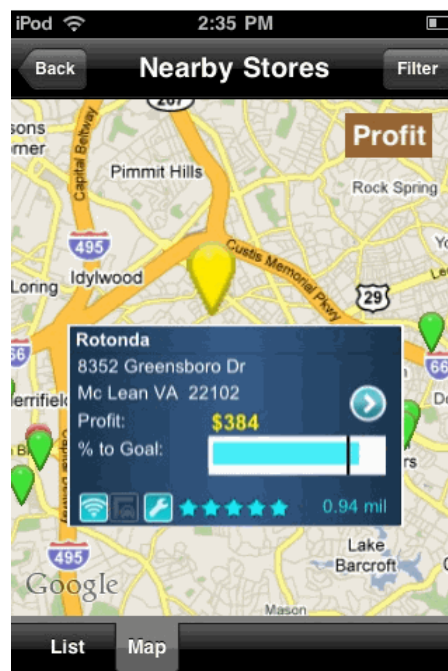
- For iPhone and iPad documents, once you create a Map widget, you can display lines that show relationships between locations on the map. For steps to use lines for relationships, see *Using lines to display relationships between locations in a Map widget, page 246*.

  To display your data in the Map widget, you must provide geographical information for each location in the map using attributes or attribute forms. You can provide this data in the following ways:

- During the import data process, you can define an attribute and assign it a geo role to identify what type of geographical information it contains. For example, you can create an attribute called City, which contains the names of multiple cities, then assign it the City geo role. Web automatically creates the City attribute with the attribute forms Latitude and Longitude, which contain the latitude and longitude of each city. You can then use the City attribute to provide latitude and longitude information for locations in the widget. Web automatically adds latitude and longitude information as attribute forms to data columns with the Country, State, Zip Code, City, or Location geo roles. You can also use attributes that have been assigned the Latitude or Longitude geo roles to provide geographical information as attributes, as described in the prerequisites below. For background information on importing data into MicroStrategy Web, including steps to assign a geo role to an attribute, see the MicroStrategy Web Help. For steps to assign a geo role to an attribute in Developer, see the *Developer Help*.

- Your administrator can create attributes containing location data to support the Map widget. Steps to create location data are included in the *Warehouse Structure for Your Logical Data Model* chapter in the Project Design Help.

Creating a Map widget

Prerequisites

The Grid/Graph for the Map widget must meet the following requirements:

- Place the attribute or attributes containing the geographical information on the rows. The attributes must provide this information in one of three ways:

  - If you want to display geographical regions on the map, you must provide an attribute whose values match the names of regions in a map provided by MicroStrategy. You select the map you want to use in the steps below.

    For example, MicroStrategy provides a map called Countries of the World. To display a map that contains a colored area for each country in which your company has sales representatives, you can create an attribute called Country, which contains the names of these countries, then use the Country attribute to provide location information in a widget that uses the Countries of the World map.

  - To provide the geographical information using attributes, you must provide one of the following:

    - One attribute that contains the latitude of each location and one attribute that contains the longitude of each location. For example, you can provide an attribute that has been assigned the Latitude geo role and an attribute that has been assigned the Longitude geo role.

    - One attribute that provides geographical information for each location as a point.

  - To provide the geographical information using attribute forms, you must provide one of the following:

    - One attribute, which provides the latitude and longitude of each location using separate attribute forms. For example, you can provide an attribute that has been assigned the Country, State, Zip Code, City, or Location geo roles.

- One attribute that provides geographical information for each location as a point, using a single attribute form.

  ℹ️ If you are using attribute forms, be sure that the attribute forms containing the geographical information are visible in the grid. Right-click the header of the attribute, point to **Attribute Forms**, then select the attribute forms you want to display.

- Place at least one metric on the columns. You can define a threshold on this metric to change the display of markers on the map. For more information on thresholds, see the MicroStrategy Web Help.

You can add objects from multiple datasets to the Grid/Graph containing the widget. You must have the correct privileges and the project must allow Grid/Graphs to use multiple datasets. For steps to allow Grid/Graphs to use multiple datasets, see the *Adding Text and Data* chapter of the Document Creation Help.

To create and add a Map widget to a document for mobile devices

1. In MicroStrategy Web, open the document in Design or Editable Mode.

2. Go to **Insert** > **Widgets** > **Mobile** > **Map**.

3. Click the location on your document where you want to place the widget. The Grid/Graph containing the widget is displayed.

4. Optionally, resize the widget by clicking and then dragging its handles.

5. From the Dataset Objects panel on the left, select attributes and metrics, and drag them on to the Grid/Graph, as described in the prerequisites above.

Configure the widget's display properties

1. Right-click the widget, then select **Properties and Formatting**. The Properties and Formatting dialog box opens.

2. From the left, select **Widget**.

3. On the right, ensure that the check boxes for the mobile devices you are designing for are enabled, as applicable.

4. Click the **Widget Properties** icon . The Map Properties dialog box opens.

5. You can replace map markers with static images, bubble markers, color-coded areas based on the population density of locations on the map, or geographical regions. Do one of the following:

   • To use map markers to mark locations on the map, select the **Use Image Markers** option. From the drop-down list, select the marker image to use to display locations on the map. A preview of the selected marker style is displayed to the right of the drop-down list.

   • To use bubble markers to mark locations on the map, select the **Use Bubble Markers** option. The size of each bubble marker is automatically determined based on the value of the metric on the columns of the widget.

   • To use shades of color to indicate the concentration of locations on the map, select the **Use Density Maps** option. From the drop-down list, select the color theme to use to automatically color areas on the map. A preview of the selected color theme is displayed to the right of the drop-down list.

   • To display locations on the map as points on a path, select the **Use as a Path on the Map** option. From the drop-down list, select the color of the line to use to display the map path.

- To display geographical regions on the map, select the **Show Areas** option. From the drop-down list, select the regions you want to use in the map.

6. You can determine how to size bubble markers representing negative metric values. From the **Negative Values are Represented As** drop-down list, select one of the following:

   - To use the absolute value of the metric to size the bubble marker, select **Absolute Numbers**. For example, a bubble representing a metric value of -2,500 will be displayed as the same size as a bubble representing 2,500.

   - To display bubble markers representing negative metric values as bubbles with a size of 7 pixels, select **Bubbles Sized at 7 Pixels**.

7. You can determine whether to apply threshold formatting to image markers or bubble markers in the widget. Do one of the following:

   - To enable threshold display, select the **Apply threshold for the map** check box.

   - To disable threshold display, clear the **Apply threshold for the map** check box.

8. You can choose to provide geographical information for the widget using attributes or attribute forms. From the **Use Attribute or Form** drop-down list, select one of the following:

   - To provide geographical information using attributes, select **Use Attribute**.

   - To provide geographical information using attribute forms, select **Use Attribute Form**.

9. You can determine whether to provide geographical information to the widget as a point, or as separate latitude and longitude values. Do one

of the following:

- To define the location as a point:

  - From the **Select Data Type** drop-down list, select the **Point** option.

  - If the **Use Attribute or Form** drop-down list is set to **Use Attribute Form**, from the **Select Attribute** drop-down list, select the attribute that contains the attribute form you want to use to display the widget.

  - From the **Select Point** drop-down list, select the attribute or attribute form that contains the point information.

- To define the location as a latitude and longitude:

  - From the **Select Data Type** drop-down list, select the **Latitude/Longitude** option.

  - If the Use Attribute or Form drop-down list is set to Use Attribute Form, from the **Select Attribute** drop-down list, select the attribute that contains the attribute forms you want to use to display the widget.

  - From the **Select Latitude** drop-down list, select the attribute or attribute form that contains the latitude information.

  - From the **Select Longitude** drop-down list, select the attribute or attribute form that contains the longitude information.

10. From the **Selection Display Attribute/Form** drop-down list, select the attribute to use to display data in the Information Window when the user selects locations in the widget.

11. By default, if multiple locations in the widget have the same latitude and longitude—for example, two stores located in the same building—a separate map marker is displayed for each location. If you are designing this widget to be displayed on an iPhone or iPad, you can

choose to display a separate map marker for each store, or display a single map marker for all of the stores at that location. Do one of the following:

- To display a single map marker, select the **For repeated rows, display only one marker for same location** check box. When the user taps the map marker on the document, information for each location at the selected latitude and longitude is displayed. If map markers in the widget are displayed as bubble markers and a group of locations are located at the same latitude and longitude, the bubble marker for this group is sized and colored based on the last location in the group, as displayed in the widget. If subtotals are displayed in the widget, the subtotal for the group is used to size and color the bubble marker.

- To display a separate map marker for each location, clear the **For repeated rows, display only one marker for same location** check box.

12. On a mobile device, tapping a map marker on the map displays additional information about the location in an Information Window.

    You can define a layout in the document to use as a custom Information Window, and format its appearance. Select the **Display Information Window from document layout** check box. For instructions to configure the layout to use as the Information Window, see *To specify a layout as an Information Window in a Map widget, page 239*.

    If you are designing the document for both iOS and Android devices, it is recommended that you use a panel stack as the Information Window. For detailed steps to define panel stacks as Information Windows, see *Providing additional information to users: Information Windows, page 149*.

- From the **Select Layout to use** drop-down list, select the name of the layout to use as the Information Window.

13. You can specify the display theme to use to display the widget. For example, you can display the map as a satellite image, a map with topographical details, and so on. From the **Default View** drop-down list, select a display theme.

14. You can specify the type of magnification to apply to the map when the user selects a location in the widget. From the **Redraw Behavior on Selector Action** drop-down list, select one of the following:

   - To maintain the widget's current level of magnification, select **Keep the Current Zoom**.

   - To refit the contents of the widget to the selected area, select **Refit the Content**.

15. You can let users select areas, zoom in and out of the widget, and so on using the map toolbar. Under Map Elements Visibility Options, choose from the following:

   - To display the map toolbar at the top of the widget, select the **Map toolbar** check box. This option is selected by default.

   - To allow the user to select which display theme to use to display the map, select the **Map view options** check box. This option is selected by default.

   - To display a slider that allows the user to zoom in and out of the map, select the **Zoom bar (Web only)** check box. This option is selected by default.

   - To allow the user to view a list of the areas he has selected in the widget, select the **Selection list bucket (Mobile only)** check box. This option is selected by default.

- To display the Current Location icon, which allows MicroStrategy to access an iPad user's current location, select the **Current location (Mobile only)** check box. If this option is selected, the icon is displayed even if the document does not have a Geo Location prompt. This option is cleared by default.

Complete the widget

The plus sign (+) at the top of the interface allows you to add additional datasets to the Map widget for display in MicroStrategy Web. For steps to add additional datasets for Web, see the *GIS Integration Help*.

16. Click **OK** to return to the Properties and Formatting dialog box.

17. Click **OK** again to save changes.

Using a layout as an Information Window in a Map widget

When a user taps a map marker in a Map widget on an iPhone, iPad, or Android device, a pop-up window is displayed. This Information Window provides additional details about the location, such as the location name and related metric values, as shown below:
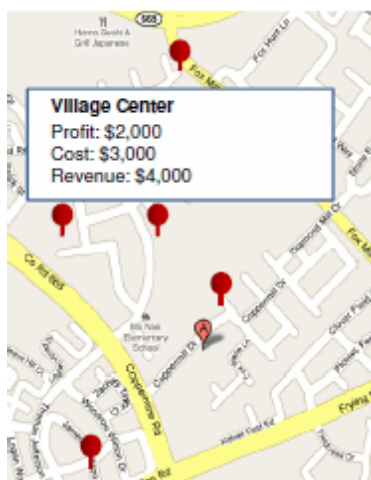
Information Windows are automatically displayed for all markers, using a default layout and format. You can create and format a custom Information Window to display for a Map widget. To define a custom Information Window, you create a document layout, using either Developer or Web. You then enable the layout to be displayed as an Information Window and specify the layout as the Information Window in the Map widget's properties. Layouts enabled as an Information Window are not displayed with the other layouts in a document and are only displayed on mobile devices.

If you define an Information Window in a separate document, you can reuse the Information Window layout by importing it into other documents. For instructions on importing layouts, see the Document Creation Help.

Prerequisite

This procedure assumes you have already added a Map widget to the document. For instructions, see *To create and add a Map widget to a document for mobile devices, page 232*.

To specify a layout as an Information Window in a Map widget

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1. In MicroStrategy Web, open the document that contains the Map widget in Design Mode.

Create the layout to use as the Information Window

1. Choose **Insert** > **Layout.** The Insert Layout dialog box opens.

2. Do one of the following to define a style for the new layout:

   - To define a layout style, click the **Layout** tab, then select a layout style.

   - To import a layout from a saved document, click the **Document** tab, then select a previously saved document.

3. Click **OK**. The new layout is displayed.

Add content to the layout

1. The content that you add to this layout is displayed in the Information Window. You can add any controls to the layout, including text fields, Grid/Graphs, images, shapes, and so on. For instructions, about designing documents, see the *Report Services Document Creation Guide*.

     The container that displays the Information Window on the iPhone is 1.5 inches wide. Its height is defined to fit to the content, with a maximum height of 1 inch.

Enable the layout to be displayed as an Information Window

1. From the Tools menu, select **Document Properties**. The Properties dialog box opens.

2. From the Layout Properties section on the left, select **Mobile**.

3. Select the **Use as Information Window** check box.

4. Click **OK**. The layout is enabled as an Information Window.

Specify the Information Window layout to be displayed in the Map widget's properties

1. Select the tab of the layout that contains the Map widget, then right-click the widget.

2. Select **Properties and Formatting**. The Properties and Formatting dialog box opens.

3. From the left, select **Widget**.

4. Click the **Widget Properties** icon . The Map Properties dialog box opens.

5. Select the **Display Information Window from document layout** check box.

6. From the **Select Layout to use** drop-down list, select the name of the layout to use as the Information Window.

7. Click **OK** to apply the changes.

8. Click **OK** to return to the document.

Using the Geo Location prompt in the Map widget

The Geo Location prompt lets users answer a prompt by using the device's current geographical location. In a Map widget, a Geo Location prompt is typically used to filter data in the widget. For example, you can choose to display only those map markers that are in your current state.

You cannot add a prompt directly to a document; you must define the prompt on the dataset reports used for the document. For more information on using prompts in documents, see the Document Creation Help.

You can create the Geo Location prompt to do the following:

- To automatically use the device's current longitude and latitude to filter the widget's results, define value prompts with the display style set to Geo Location. You must define two value prompts, one for latitude and one for longitude. The prompts are then automatically answered and do not display in the interface.

- To filter an attribute element list using the current geographical location, you can define an attribute element prompt with the display style set to Geo Location.

Geo Location prompts are defined in MicroStrategy Web. For instructions, see *Prompting users for their location: Geo Location prompts, page 187*.

Filtering data based on geographical distance from a mobile device

You can filter data in a report to display information based on the distance between a location on the report, and the current location of an iPhone, iPad, or Android device. For example, in the image below, a report displays a list of stores.

Store Name	Store Latitude	Store Longitude	Store_Point_Distance
Inc Best North	39.18846	-77.26161	18.9389
Associates First No.1	38.8986159	-77.039957	10.0547
General Best Urban	38.88497	-77.015834	11.4819
Spring East Modern	38.9226113	-77.0394214	10.0226

When the report is viewed on a mobile device, the user can choose to display only stores within a ten mile radius, as shown in the image below.

Store Name	Store Latitude	Store Longitude	Store_Point_Distance
The General East	38.927266	-77.070937	8.3546
Dollar Best Urban	38.9593429	-77.084408	8.1657
Lead East East	38.8596062	-77.2297945	3.8891
General Associates Enterprise	38.926732	-77.102774	6.6486

If the report is displayed as a Map widget, only map markers for stores within a ten mile radius are displayed, as shown below.
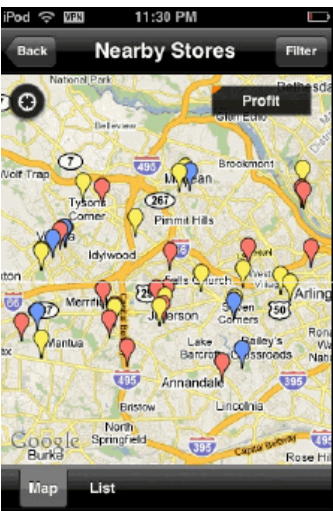
To filter data based on the distance from a point of interest to a mobile device, you must first create a metric to calculate this distance. The steps to create this metric are described below.

Once you have created the distance calculation metric, you can use it to filter data by creating a prompt or filter using the metric. For example, you can:

- Create a prompt to allow users to display only data for locations within a specified radius of the mobile device.

- Create a filter to automatically display data only for locations greater than a certain distance from the mobile device.

- In a Map widget, display map markers only for locations within a specified radius.

Prerequisites

- You must create an attribute with attribute forms containing the latitude and longitude of each location to use for the distance calculation. For example, the Store attribute in the example above has two attribute forms, Latitude and Longitude, which contain the latitude and longitude information for each store.

- You must create two Geo Location prompts, one each for the latitude and longitude. The prompts must be created as value prompts, as described in *Allowing users to filter data based on a single value: Value prompts, page 176*.

To create a metric to calculate the distance between locations and a mobile device

1. In Developer, from the **File** menu, point to **New**, and then **Metric**. The New Metric dialog box opens.

2. Click **OK** to create a new metric. The Metric Editor opens.

3. In the Definition pane, type the formula of the metric you want to create. Use the syntax in the table following this procedure for the metric's definition.

4. Click **Save and Close**. The Save As dialog box opens.

5. In the **Object name** field, type the name of the new metric. Use the name provided in the table below.

6. Navigate to the location in which you want to save the new metric, then click **Save**. The new metric is created.

7. Repeat the appropriate steps above to create each of the metrics required to calculate the distance to each store.

8. Once you have created the distance calculation metric, Point_Distance, you can create any of the following prompts to use the metric:

    • A Metric Qualification prompt. You can add the prompt to a report to let users specify a distance radius for which to display data. For information on creating Metric Qualification prompts, see the MicroStrategy Web Help.

    • A Metric Set Qualification filter. You can add the filter to a report or to a dataset report in a document, to automatically filter the data using the current location of the mobile device.

    • A prompt or filter that will use the metric, added to a report displayed as a Map widget, or to the dataset report of a Map widget in a document. When the Map widget is displayed on a mobile device, only the map markers for locations within the specified distance from the mobile device are displayed.

Metric Name	Metric Definition
Location_Lat	Max(*AttributeName@LatitudeFormName*)

Metric Name	Metric Definition
	Replace *AttributeName* with the name of the location attribute, and replace *LatitudeFormName* with the attribute form that contains the latitude information for each location. For example, for an attribute named Store with the attribute forms Latitude and Longitude, create a metric with the name `Location_Lat`, with the definition `Max(Store@Latitude)`.
Location_ Long	`Max(`*AttributeName*`@`*LongitudeFormName*`)` Replace *AttributeName* with the name of the location attribute, and replace *LongitudeFormName* with the attribute form that contains the longitude information for each location. For example, for an attribute named Store with the attribute forms Latitude and Longitude, create a metric with the name `Location_Long`, with the definition `Max (Store@Longitude)`.
DeltaLat/2	`(Radians(([Location_Lat] - ?`*LatitudePromptName*`)) / 2)` Replace *LatitudePromptName* with the name of the value prompt for latitude. For example, if the value prompt is named `Latitude`, the definition is `(Radians(([Location_Lat] - ?Latitude)) / 2)`.
DeltaLong/2	`(Radians (([Location_Long] - ?`*LongitudePromptName*`))/2)` Replace *LongitudePromptName* with the name of the value prompt for longitude. For example, if the value prompt is named `Longitude`, the definition is `(Radians(([Location_Long] - ?Longitude)) / 2)`.
A	`((Sin([DeltaLat/2]) * Sin([DeltaLat/2])) + (((Cos (Radians(?Latitude)) * Cos(Radians([Location_ Lat]))) * Sin([DeltaLong/2])) * Sin ([DeltaLong/2])))`
C	`(2 * [Atan2](Sqrt((1-A)), Sqrt(A)))`
Point_ Distance	`(3959 * C)`

Metric Name	Metric Definition
	This value is based on the radius of the Earth, 3,959 miles or 6,371 km. To calculate the distance between the stores and the mobile device using a different unit of distance, replace 3959 with the radius of the Earth in the units you want to use to measure distance. For example, to calculate distance in kilometers, the metric definition is `(6371 * C)`.

Using lines to display relationships between locations in a Map widget

Once you create a Map widget for an iPhone or iPad, you can show relationships between locations on the map when the widget is displayed on the device. To do this, you display lines between the map markers. You can choose to display these lines using different thicknesses or colors depending on the relationship between locations.

Prerequisites

- The procedure assumes that you have created a Map widget. For more information on the requirements for this widget, see *Creating a Map widget, page 230*.

- If you provided the location of each map marker in the Map widget using attribute forms, the Latitude, Longitude, and ID attribute forms of the location attribute should be displayed in the Map widget.

- If you provided the location of each map marker in the Map widget using attributes, you must include the lookup attribute on the Map widget.

- You must create a Grid/Graph that is used to display lines in the widget. This Grid/Graph includes the metrics used to determine the color and thickness of lines between map markers, and attributes containing the IDs of the starting and ending locations of each line. The IDs provided must

correspond to the IDs used to identify map marker locations in the Map widget. The steps to create this Grid/Graph are below.

To display lines between map markers in a Map widget

1. Open the document in Design or Editable Mode.

To create the Grid/Graph for the relationships

1. From the **Insert** menu, select **Grid/Graph**.

2. Click the location on your document in which you want to place the Grid/Graph. This Grid/Graph will not be visible when the widget is displayed on the device, and should be in the same document section as the Map widget.

3. From the Dataset Objects panel on the left, select attributes and metrics, and drag them on top of the Grid/Graph, as described below:

   • You must place two attributes on the rows of the Grid/Graph, which must provide the IDs of the starting and ending locations of each line in the widget. The IDs provided must correspond to the ID forms in the attribute used to identify map marker locations in the Map widget. Place the attributes as follows:

      • The first attribute is the lookup attribute for the widget. It must contain a single attribute form containing the ID of the starting location for each line.

      • The second attribute must be a single attribute form containing the ID of the ending location for each line.

   • Place at least one metric on the Grid/Graph's columns:

      • The first metric automatically determines the thickness of each line displayed in the widget, with thick lines representing large metric

values. For example, if airports are displayed in the Map widget, and the lines represent flights between each airport, you can add the Passenger Count metric to the Grid/Graph. When the widget is displayed on a mobile device, the flights with the most passengers are displayed with thick lines, while flights with less passengers are displayed with thin lines.

> To display each line using the same thickness, you can provide a metric with a constant value.

- The second metric is used to determine the color of each line in the widget. By default, each line in the widget is displayed using the default color. You can override the default color by defining a threshold to change the font color of the metric values that meet the threshold condition. For information on creating thresholds, refer to the *MicroStrategy Web Help*.

> If only one metric is placed on the columns, all lines will display using the default color.

4. The ID attribute form of each attribute must be displayed in the Grid/Graph you just created. If they are not displayed, for each attribute, right-click the header of the attribute, point to **Attribute Forms**, then select the attribute forms you want to display.

5. If you provided the location of each map marker in the Map widget using attributes, you must include the lookup attribute on the Grid/Graph that you just created to display lines between the map markers. Place the lookup attribute on the rows of the Grid/Graph, directly before or directly after the attributes providing the latitude and longitude of each map marker.

To enable the line display

1. Right-click the Map widget, then select **Properties and Formatting**. The Properties and Formatting dialog box opens.

2. From the left, click **Advanced**.

3. Clear the **Enable incremental fetch on grid** check box, and click **Apply**.

4. From the left, select **Widget**.

5. Click the **Widget Properties** icon . The Map Properties dialog box opens.

6. To enable the display of lines, select the **Display Affinity Lines/Arcs** check box.

7. If the Use Attribute or Form option is set to Use Attribute, from the **Select Lookup Attribute** drop-down list, select the lookup attribute.

8. From the **Select Affinity Data** drop-down list, select the Grid/Graph that you created above.

9. From the **Draw Arcs/Lines** drop-down list, select **Arcs** to display curved lines or **Lines** to display straight lines.

10. From the **Max Line Thickness** drop-down list, select the maximum thickness that can be used to display lines in the widget. The thickness of each line is automatically determined based on the value of the first metric on the new Grid/Graph's rows. The default value is 5.

11. Click **OK** to return to the Properties and Formatting dialog box.

12. Click **OK** to save changes and return to the document.

Visualizing trends: Microcharts widget

The Microcharts widget for iOS and Android devices lets users visualize trends in a metric at a quick glance. Depending on the number of metrics

used in the underlying report, the Microcharts widget can display one, two, or three microcharts. For example, bar and sparkline microcharts convey trends in a metric, and bullet microcharts compare a metric's actual value to its targets. An example of a Microcharts widget is shown below:
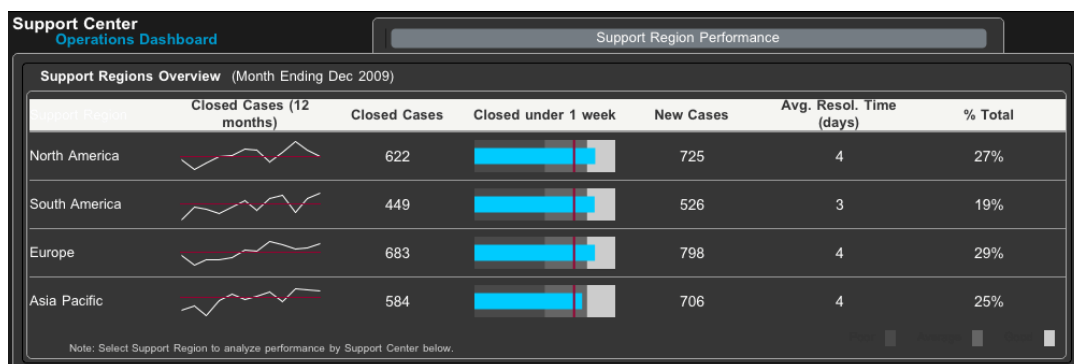
The Microcharts widget can be used in the following modes:

• Grid mode: This is the default setting. In this mode, all attributes except the last one from the left are grouped and displayed as rows in the widget.

    • You can display Grid mode in Tree mode, which groups the rows in the widget logically. Users can collapse and expand the rows as needed to see more detailed data.

    • If the widget is displayed on an iPhone or iPad, users can sort the widget based on a column in the widget. Users can sort the widget based on:

        • Attribute elements or metric values

        • Elements in a consolidation

        • Attribute elements or metric values with thresholds applied

            If your widget contains subtotals, you can control where the subtotals are displayed when the widget is sorted. Edit the subtotals to display at the top or bottom of each group. For steps, see the *Document Creation Guide*.

• KPI List mode: In this mode, key performance indicators (KPIs), such as

Profit, Revenue, and so on, are displayed in a list. Each KPI is represented by its own row of microcharts.

ⓘ Ticker mode and Vertical Scroll mode are not available for mobile devices.

You can also define Information Windows that display when the widget is tapped. For instructions on creating an Information Window, see *Providing additional information to users: Information Windows, page 149*.

Creating a Microcharts widget

Prerequisites

In a document, create a Grid/Graph that meets the following minimum requirements:

- For a Microchart widget in Grid mode, the report must have at least two attributes in the rows. The last attribute from the left is used as the X-axis for the bar graph and sparkline microchart.

- For a Microchart widget in KPI List mode, the report must have only one attribute in the rows.

- At least two metrics in the columns. The first metric from the left determines the height of the bars for the bar microchart, and the peaks of the sparkline microchart. The second metric displays a horizontal reference line for both microcharts.

You can add objects from multiple datasets to the Grid/Graph containing the widget. You must have the correct privileges and the project must allow Grid/Graphs to use multiple datasets. For steps to allow Grid/Graphs to use multiple datasets, see the *Adding Text and Data* chapter of the Document Creation Help.

Displaying the Microcharts widget in KPI List mode

By default, if the Grid/Graph has only one attribute row, the Microcharts widget displays in KPI List mode. To configure other properties of the widget, you must run the document in Flash Mode in MicroStrategy Web, and then change the properties, as described in the steps below.

You must determine how many of the metrics to use for each KPI. For example, if you specify three metrics for each KPI, the first three metrics from the left are used for the first KPI, the next three for the second, and so on.

To display the Microcharts widget in KPI List mode

1. In MicroStrategy Web, navigate to the document where you have defined the Microcharts widget, and open it. The document should open with the Microcharts widget displayed.

2. Right-click the Microcharts widget, and select **Properties**. The Microcharts properties dialog box opens.

3. From the drop-down list at the top left, choose **Mode**. If your widget has a single attribute row, the **KPI List Mode** check box is enabled by default.

    If the widget contains more than one attribute, the **KPI List Mode** check box is disabled.

4. In the **Metrics per KPI** field, type the number of metrics to use for each KPI.

5. Click **OK**.

6. Click **Save** to save the document.

Enabling Smooth Scroll mode

You can enable Smooth Scroll mode to ensure that the metric columns displayed in the widget on an iPad or Android with MicroStrategy Mobile have enough space.

In Smooth Scroll mode, if there is enough space on the mobile device to display all the attribute columns in the widget plus at least one metric, the attribute columns are allowed to take up as much space as they require. If space is limited, however, priority is given to displaying the metrics in the widget, and attributes are displayed in the remaining space. Users can perform a horizontal swipe gesture to view the metric columns that cannot fit on a single page.

To enable Smooth Scroll mode for a Microcharts widget

1. Right-click the widget and select **Properties**. The Microcharts dialog box opens.

2. From the drop-down list, select **Mode**.

3. Select the **Enable Smooth Scroll Mode for Metrics (Mobile Only)** check box.

4. From the **Metric Column Spacing** drop-down list, determine how to size and display columns in the widget by selecting one of the following:

   - To display columns as more compact in width, select **Compact**.

   - To display columns using the default width, select **Normal**.

   - To display columns as wider than the default, select **Large**.

5. Click **OK** to apply your changes.

Selecting a display theme for the widget

You can select a display theme to use to display the Microcharts widget on a mobile device. Display themes are used only for widgets displayed on mobile devices.

To select a display theme for the Microcharts widget

1. Right-click the widget and select **Properties**. The Microcharts dialog box opens.

2. From the drop-down list, select **Options**.

3. From the **Choose Theme** drop-down list, select a color theme to use to display the widget, as follows:

   - To display the widget using a light-colored theme, select **Light** (default).

   - To display the widget using a dark-colored theme, select **Dark**.

   - To display the widget using custom color options that you define, select **Custom**. The colors that you select for the widget in the Microcharts dialog box will be used to display the widget on a mobile device.

4. Click **OK** to apply your changes.

Downloading and viewing multimedia files: Multimedia widget

You can allow users to browse and view files in a web folder, such as documents, images, and videos, using a Multimedia widget. When viewed on a mobile device, the Multimedia widget displays a list of available files, along with information about each file, including the file name, description, and file type. Users can tap the Download icon next to a file displayed in the widget to download and view the file. When the mobile device is offline, users can view files that have been downloaded and automatically stored on

their mobile device. Files that have not been stored on the mobile device are grayed out and cannot be viewed offline.

Users can view the following types of files using the Multimedia widget:

- Audio and video files

- ePub files

- Excel

- HTML

- Image

- PDF

- Plain text

- PowerPoint

- Word

PDF files are displayed in-app using a native PDF reader.

Prerequisites

Before creating a Multimedia widget, you must perform the following tasks:

- Create the document in which to insert the Multimedia widget.

- Configure an XQuery database instance to retrieve web folder contents. For steps to configure this database instance, see the *Custom SQL Queries: Freeform SQL and Query Builder* chapter in the *Advanced Reporting Guide*.

- Create an XQuery report to use to access the web folder that contains the files to display in the widget. Add the XQuery report as a dataset report in the document. For steps to create the XQuery report, see the *Custom SQL Queries: Freeform SQL and Query Builder* chapter in the *Advanced Reporting Guide*.

To create and configure a Multimedia widget

1. In MicroStrategy Web, open the document in Design or Editable Mode.

2. From the Dataset Objects panel on the left, click and drag the dataset report to the area of the document in which to display the widget. The attributes on the Grid/Graph of the dataset report should be displayed in the following order:

   - MW_URL

   - MW_Name

   - MW_ModifiedOn

   - MW_ModifiedOnText

   - MW_DBIGUID

   - MW_ThumbnailURL

   - MW_Description

3. Right-click the dataset report, then select **Properties and Formatting**. The Properties and Formatting dialog box opens.

4. From the left, click **Widget**.

5. From the **Widget** drop-down list, point to **Mobile**, then select **Multimedia**.

6. Click **OK** to save your changes and return to the document.

Visualizing relationships: Network widget

You can create a Network widget to allow analysts to quickly and easily identify relationships between related items and clusters, such as when visualizing a social network or displaying a market basket analysis. Attribute elements are displayed as nodes in the visualization, with lines (called edges) drawn between the nodes to represent relationships between elements. Once the visualization is created, users can view characteristics

of the nodes and the relationships between them, using display options such as node size, edge thickness, and edge color.

You can also define Information Windows that display when a node is tapped. For instructions on creating an Information Window, see *Providing additional information to users: Information Windows, page 149*.

You can also use the Network visualization in dashboards. For information on creating analyses, refer to the MicroStrategy Web Help.

Uploading images: Photo Uploader widget

Analysts can use the Photo Uploader widget to upload images from an iPhone, iPad, or Android device. A user can choose to take a new photo to use as an image, use an existing image on his mobile device, or delete images.

For example, you can add the Store attribute to the widget's Grid/Graph, and then add a prompt to the document to allow users to select a store. Users can run the document, then select the store in which they are taking a picture with their mobile devices. When the image is uploaded, the name of the store is stored in the user's data source, along with the description of the image and the location in which the image is stored. For steps to create prompts, see *Allowing users to filter data: prompts, page 173*.

Prerequisites

• You must have Transaction Services.

• You must have the Web Configure Transaction privilege.

• This procedure assumes you have already created attributes and metrics to place on the widget. The widget is used to store information about the images before they are uploaded and must contain a placeholder row of data for each image you want to upload. The data in these rows is updated when users upload images. The following attributes and metrics must be created:

- One attribute that contains the following attribute forms:

  - The first attribute form is the location in which each image is saved. The values may be blank or placeholders, and are updated with new paths when users upload images.

  - The second attribute form contains a description of each image, as provided by the user.

  - The third attribute form (optional) contains a unique numeric ID of each image that the user uploads.

    Note the following:

    - The number of placeholder rows in the widget determines the maximum number of images users can upload. For example, if you create a widget with 20 rows, users can upload a maximum of 20 images.

    - To choose the attribute forms displayed for an attribute in the widget, right-click the header of the attribute, point to **Attribute Forms**, then select the attribute forms to display.

- Two metrics, as follows:

  - The first metric is used to indicate whether the image has been uploaded.

  - The second metric (optional) contains the sum of the values in the first metric, and is used to display the number of images the user has uploaded.

- You can provide additional information about an uploaded image by placing additional attributes and metrics on the widget. For example, you can add the Store attribute to the widget, and then add a prompt to the document to allow users to select a store. Users can run the document, then select the store in which they are taking a picture with their mobile

devices. When the image is uploaded, the name of the store is stored in the user's data source, along with the description of the image and the location in which the image is stored. For steps to create prompts, see *Allowing users to filter data: prompts, page 173*.

- You can add objects from multiple datasets to the Grid/Graph containing the widget. You must have the correct privileges and the project must allow Grid/Graphs to use multiple datasets. For steps to allow Grid/Graphs to use multiple datasets, see the *Adding Text and Data* chapter of the Document Creation Help.

- This procedure assumes you have created a Transaction Services report to link to the widget. There must be an attribute form or metric displayed in the widget (described above) for each input object in the Transaction Services report. For steps to create a Transaction Services report, see the Advanced Reporting Help.

To add a Photo Uploader widget to a document

1. Open the document in Design or Editable Mode.

2. From the **Insert** menu, point to **Widgets**, then point to **Mobile**. Select **Photo Uploader**.

3. Click in your document where you want to place the widget. A Grid/Graph containing the widget is added to the document.

4. Optionally, resize the widget by clicking and then dragging its handles.

5. From the Dataset Objects panel on the left, select attributes and metrics, and drag them on to the Grid/Graph, as described in the prerequisites above.

6. To specify the size and quality of images uploaded through the Photo Uploader, the camera used to take images, and other properties, right-click the widget and select **Properties and Formatting**, then click the

gear icon next to Widget Properties.

You can specify the following options:

    a. The quality of the images that are uploaded. From the Image Quality drop-down list, select **High**, **Medium**, or **Low** (default).

    b. The size of the images uploaded. From the Image Size drop-down list, select **Small**, **Medium** (default), **Large**, or **Actual**.

    c. Whether users can upload multiple images at one time. From the Allow Multiple Photos drop-down list, select **Yes** (default) or **No**.

    d. Whether users can use photos already stored on their mobile device. From the Allow Existing Pictures drop-down list, select **Yes** (default) or **No**.

    e. The camera used to take photos by default. Users can still switch between the cameras. From the Default Camera drop-down list, select **Back** (default) or **Front**.

7. To link the widget to the Transaction Services report, right-click the widget's Grid/Graph, then select **Configure Transaction**. The Configure Transactions dialog box opens.

8. Click **...** (the Browse button), then navigate to and select the Transaction Services report to link to.

9. A list of the attributes and metrics that can be modified in the Transaction Services report is displayed in the Transaction Input column. Perform the following steps for each input object:

    a. From the **Grid Object** drop-down list, select the attribute form or metric to link to the input object.

    b. You can choose whether users can edit the value of each input object. Do one of the following:

- To allow users to edit the value of the input object, select the **Editable** check box.

- To prevent users from editing the value of the input object, clear the **Editable** check box.

> You must define the first metric on the columns of the widget to be editable. This metric indicates whether the image has been uploaded.

c. From the **Transaction Input** drop-down list, choose a control to display the input as, such as a text box, slider, and so on.

10. Repeat the appropriate steps above to define and format the control to display for each input object.

11. Click **OK** to save your changes and return to the document.

12. To create a button for users to submit a photo, from the **Insert** menu, point to **Selector**, then select **Action Selector Button**.

13. Click the section of the Layout area in which you want to place the selector. Right-click the selector, then select **Properties and Formatting**. The Properties and Formatting dialog box opens.

14. From the left, click **General**, then in the **Display Text** field, type the text you want to display on the button or link; for example, `Submit`.

15. By default, a descriptive title bar is displayed for the selector. You can determine whether to display the title bar. Do one of the following:

- To display the title bar, select the **Show Title Bar** check box and type the title you want to display in the field.

- To display the selector button or link without the title bar, clear the **Show Title Bar** check box.

16. From the left, click **Selector**. From the **Action Type** drop-down list, select **Submit**.

17. By default, the selector button or link targets each Grid/Graph and panel stack in the document section in which it is placed. You can choose the targets of the selector manually instead. To do so, click **Click here**, then use the right arrow to move the target Grid/Graph or panel stack from the **Available** list to the **Selected** list. For additional information on working with selectors, see the MicroStrategy Web Help.

18. Select the appropriate options to define the selector. For the full steps to define an action selector button, see the Document Creation Help.

19. Click **OK** to save your changes and return to the document.

Displaying RSS feeds: RSS Reader widget

You can provide an RSS feed on the iPhone and iPad. RSS (Rich Site Summary, or Really Simple Syndication) is a data format used to display updated content from a website. An RSS document is called a feed. It contains either a summary of the content from an associated website or the full text.
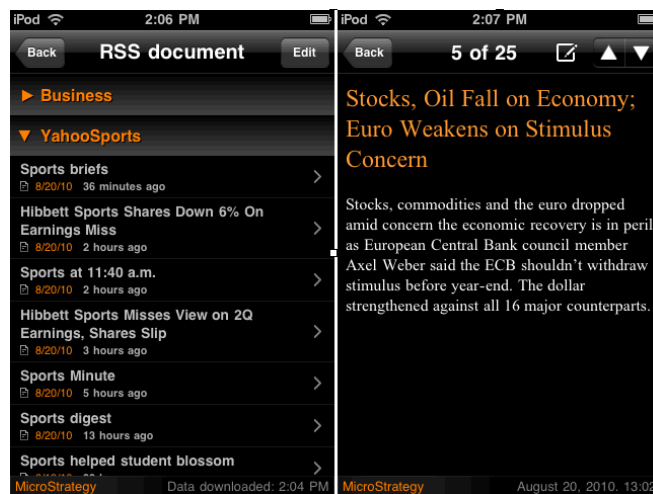
The RSS Reader widget allows users to compare data in the dashboard with information from external news feed sources. The widget retrieves news from an RSS news feed and displays it alongside the other components of

the dashboard. The RSS feed is automatically reloaded to display the most up-to-date news about a variety of topics that you specify.

You can add an RSS Reader widget to a document, then display the widget when the document is viewed on a mobile device, as shown in the image above. Users can select an RSS feed to display a list of news items, then select an item to display from the list.

Formatting an RSS Reader widget for mobile devices

You can format how the widget is displayed when viewed on the mobile device. For example, you can change the color in which the titles of RSS feeds are displayed, or the background color used for news items that are selected in the widget.

The list below suggests formatting ideas and provides steps to format how an RSS Reader widget is displayed on the mobile device.

Specify the URL of the RSS feed to display in the widget

1. In Flash Mode, right-click the widget and select **Properties**. The RSS Reader dialog box opens.

2. On the **General** tab, type the URL of the RSS feed in the **Default RSS Field**. To specify multiple URLs, type ?? between each URL. For example:

   http://www.businessweek.com/rss/bwdaily.rss??http://news.google.com/news?ned=us&topic=h&output=rss

3. Click **OK** to apply your changes.

Specify the title of the RSS feed displayed in the widget

1. In Flash Mode, right-click the widget and select Properties. The RSS Reader dialog box opens.

2. On the General tab, type the title of the RSS feed in the RSS Reader Title field. To specify titles for multiple RSS feeds, type ?? between each title. For example, you can type Business??World News to create two RSS feeds, one named Business and the other named World News.

3. Click OK to apply your changes.

Select the color in which the titles of RSS feeds are displayed

1. In Flash Mode, right-click the widget and select Properties. The RSS Reader dialog box opens.

2. On the General tab, select a color from the RSS Reader Title Color palette.

3. Click OK to apply your changes.

Select the background color of the widget

1. In Flash Mode, right-click the widget and select Properties. The RSS Reader dialog box opens.

2. On the General tab, select a color from the Background Color palette.

3. Click OK to apply your changes.

Select the color of the widget's border

1. In Flash Mode, right-click the widget and select Properties. The RSS Reader dialog box opens.

2. On the General tab, select a color from the Border Color palette.

3. Click OK to apply your changes.

Select the background color to use to display news items in the widget

1. In Flash Mode, right-click the widget and select Properties. The RSS Reader dialog box opens.

2. On the NewsItem tab, select Colors from the first drop-down list.

3. Select Background from the second drop-down list.

4. Select a color from the Background color palette.

5. Click OK to apply your changes.

Select the background color displayed for news items when a cursor hovers over the item in the widget

1. In Flash Mode, right-click the widget and select Properties. The RSS Reader dialog box opens.

2. On the NewsItem tab, select Colors from the first drop-down list.

3. Select Rollover Background from the second drop-down list.

4. Select a color from the Rollover Background color palette.

5. Click OK to apply your changes.

Select the font color to use to display news items in the widget

1. In Flash Mode, right-click the widget and select Properties. The RSS Reader dialog box opens.

2. On the NewsItem tab, select Colors from the first drop-down list.

3. Select Font from the second drop-down list.

4. Select a color from the Font Color palette.

5. Click OK to apply your changes.

Select the font color to use to display news items when a cursor hovers over the item in the widget

1. In Flash Mode, right-click the widget and select Properties. The RSS Reader dialog box opens.

2. On the NewsItem tab, select Colors from the first drop-down list.

3. Select Rollover Font from the second drop-down list.

4. Select a color from the Rollover Font Color palette.

5. Click OK to apply your changes.

Select the font color to use for news items that have been read

1. In Flash Mode, right-click the widget and select Properties. The RSS Reader dialog box opens.

2. On the NewsItem tab, select Colors from the first drop-down list.

3. Select Read Articles from the second drop-down list.

4. Select a color from the Read Articles color palette.

5. Click OK to apply your changes.

Select the background color to use to display news items that are selected in the widget

1. In Flash Mode, right-click the widget and select Properties. The RSS Reader dialog box opens.

2. On the NewsDetail tab, select a color from the Background Color palette.

3. Click OK to apply your changes.

Select the font color to use to display news items that are selected in the widget

1. In Flash Mode, right-click the widget and select Properties. The RSS Reader dialog box opens.

2. On the NewsDetail tab, select a color from the Font Color palette.

3. Click OK to apply your changes.

Gathering data from users: Survey widget

The Survey widget allows an analyst to interact with a survey on an iPad and submit answers, which are then stored in your data source. You can create a survey in a database or on a third-party survey creation website, then display your survey in a Transaction Services-enabled document on an iPad.

The Survey widget provides an easy way to dynamically generate and maintain surveys. If you want to modify the survey after its creation (for example, by adding or editing survey questions), you can update the survey information provided by the attributes and metrics placed on the widget's grid. These changes will automatically be reflected and displayed in the widget, without requiring any additional configuration changes to the widget in the document.

You can add a Survey widget to a document, then display the widget when the document is viewed on a mobile device, as shown in the image above.

A Survey widget displayed on an iPad can contain the following question types:

Question Type	Description
Text field	A field consisting of one line in which users can enter text. Text fields are suited for questions in which users provide a single line of text, such as an email address.
Text area	A field in which users can type multiple lines of text. Text areas are suited for comments sections in which users provide multiple lines of written content.

Question Type	Description
Radio button	A list of radio buttons, displayed in a table. Users can select one radio button at a time.
Check box	A list of check boxes, displayed in a table. Users can select more than one check box at the same time.
Drop-down list	A list of options, displayed in a table. Users can select one option from the drop-down list at a time.
Likert scale	A series of radio buttons, displayed in a table, that users can choose from to rate an item on a numeric scale. For example, users can choose 1 to strongly disagree with a statement, or 5 to strongly agree.
Drag and drop ranking	A list containing options that users can click and drag to rank them from highest to lowest.
Star ranking	A row of stars that users can use to submit a specific star rating out of five stars (such as four out of five stars).
Group question	When you display questions in a question group or table, you specify which question is treated as the main question. The main question is displayed as a header above the rest of the questions.

In the example above, the second question is displayed as a table of choices. The iPad displays the text "Required" for required questions (as shown for First Name in the example).

Displaying a Timeline widget

The Timeline widget allows analysts using an iPad to view events or important milestones in the status of a product. For example, the image below shows a Timeline widget for a company that leases commercial jets to different airlines.
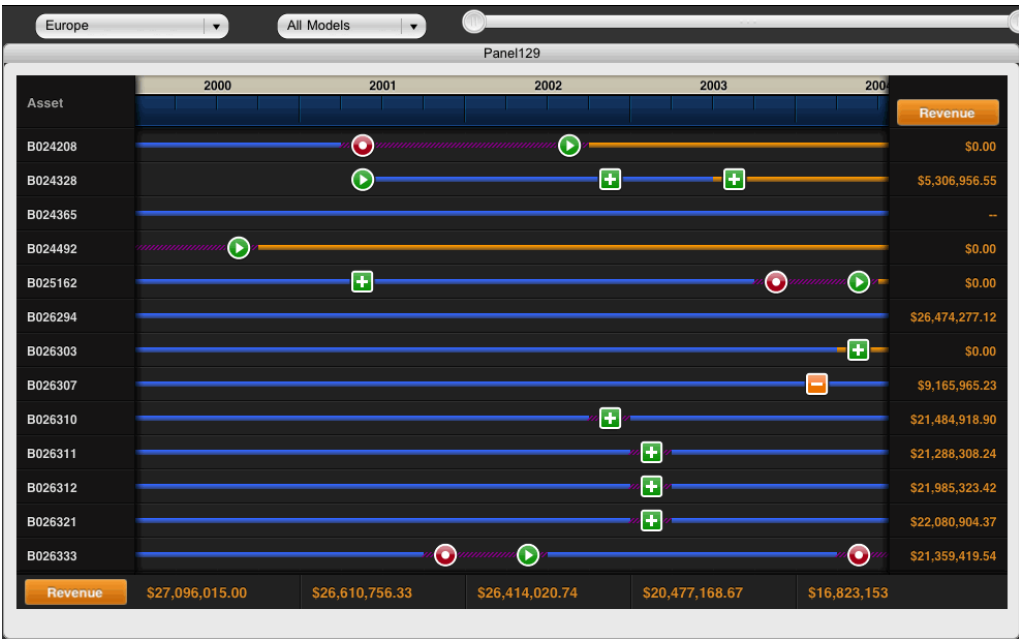
Each line represents a different commercial jet. An icon is displayed to mark events in the jet's lifetime, such as a new lease, a lease expiring, a new purchase, and so on. The metric values on the right are the key performance indicators (KPIs) for each jet, and the values at the bottom are the KPIs for each year.

Creating and adding a Timeline widget to a report or document

The following are instructions to define a Timeline widget for display on a mobile device. You can also define Information Windows for the widget, which can display additional information when users tap a section of the timeline. You can define a link in the widget to open a report or another document.

Prerequisites

- You must have a total of three datasets for the Timeline widget, which contain data as follows:

- A main dataset, which must have the following objects:

  - One attribute on the rows. Each attribute element is shown as a row on the Timeline widget. In the example above, the Asset attribute is placed on the rows.

  - The Year and Quarter attributes, in that order, on the columns.

  - One metric for Status, with codes for the asset's status, such as leased, sold, and so on. This metric determines the color of the timeline for a particular status. You can define the colors using thresholds on the Status metric.

  - One metric for Event, with codes for events in the asset's timeline. You can define the appearance of the event marker by defining a threshold on the Event metric.

  - Optionally, one metric for the count of events for each asset, which contains the number of events that have occurred in a given quarter. If this value is greater than 1 for a specific quarter, a number badge for the quarter is displayed in the widget in place of an event icon. This number badge contains the number of events that affected the asset during the quarter.

- A dataset that relates the asset to the KPI metrics. The metrics are displayed on the right side of the widget. The dataset must contain the following objects:

  - On the rows, the attribute for which timelines are displayed. In the example above, this is the Asset attribute.

  - On the columns, the metrics for the KPIs.

- A dataset that relates the Year to the KPI metrics. The metrics are displayed at the bottom of the widget. The dataset must contain the following objects:

- On the rows, the Year attribute.

- On the columns, the metrics for the KPIs.

To create and configure the Timeline widget for mobile devices

1. In Web, open the document in Design or Editable Mode.

2. From the **Insert** menu, point to **Widgets**, then **Mobile**, and select **Timeline**.

3. Click the location on your document where you want to place the widget. The Grid/Graph containing the widget is displayed.

4. Optionally, resize the widget by clicking and then dragging its handles.

To define the grid for the main dataset

1. From the **Dataset Objects** panel on the left, place the objects from the main dataset on to the widget. The requirements for these objects are described in the prerequisites above.

2. To color-code the line for each asset in the widget based on the asset's status, you must define a threshold on the status metric to change the color in which metric values are displayed, as described below:

   a. Right-click the widget, then point to **Thresholds**, and select **Visual**. The Visual Threshold Editor opens.

   b. Select the appropriate options to define your threshold. For detailed steps to define a threshold, see the *Formatting a Report* chapter in the *Basic Reporting Guide*.

3. To display an image icon when an event occurs to an asset in the widget, you must define a threshold on the event metric to replace metric values with the image you want to display, as described below.

    a. Right-click the widget, then point to **Thresholds**, and select **Visual**. The Visual Threshold Editor opens.

    b. Select the appropriate options to define your threshold. For detailed steps to define a threshold, see the *Formatting a Report* chapter in the *Basic Reporting Guide*.

To define the grid for displaying metrics by asset

1. From the **Insert** menu, select **Grid**, then click the area in the Layout area in which you want to place the grid.

   ℹ️ This grid will not be visible when the widget is displayed.

2. From the **Dataset Objects** panel, drag the objects from the second dataset, which relates the assets to metrics, on to the grid.

To define the grid for displaying metrics by year

1. From the **Insert** menu, select **Grid**, then click the area in the Layout area in which you want to place the grid.

   ℹ️ This grid will not be visible when the widget is displayed.

2. From the **Dataset Objects** panel, drag the objects from the third dataset, which relates the year to metrics, on to the grid.

To configure the widget

1. Right-click the Timeline widget, then select **Properties and Formatting**. The Properties and Formatting dialog box opens.

2. On the left, click **Widget**.

3. In the **Available** list under Secondary Data Providers, select the grid with the asset attribute, then click **>** to move it to the Selected list.

Select the grid with the Year attribute and click **>** to move it to the Selected list.

4. Click the **Widget Properties** icon [icon]. The Timeline Properties dialog box opens.

5. You can choose the starting point from which to display data in the timeline when the widget is displayed. From the **Initial column display properties** drop-down list, select one of the following:

   - To display data in the timeline starting with the most recent dates available, select **Right Justified**.

   - To display data in the timeline starting with the earliest dates available, select **Left Justified**.

6. You can determine whether to show labels for each quarter displayed in the timeline. Do one of the following:

   - To show the labels for each quarter, select the **Show labels** check box.

   - To display the timeline without labeling each quarter, clear the **Show labels** check box.

7. Click **OK** to save your changes and return to the Properties and Formatting dialog box.

8. Click **OK** to save your changes.

Displaying additional information: Information Windows

You can define Information Windows, which are pop-up windows that display additional information when the user taps an area in the widget when the widget is displayed on the mobile device. To do so, you must first define a panel stack containing the information you want to display, then define specific attributes as selectors targeting the panel stack, as follows:

- To display an Information Window when the user taps a section of the timeline for a specific asset and quarter, you must define the Asset, Year, and Quarter attributes on the Timeline widget as selectors targeting the panel stack.

- To display an Information Window when the user taps the name of an asset in the widget, you must define the Asset attribute in the grid containing the metrics to be displayed by Asset (the second Grid/Graph you added to the document) as a selector targeting the panel stack.

For detailed steps to create Information Windows, see *Providing additional information to users: Information Windows, page 149*.

Displaying data trends: Time Series widget

The Time Series widget displays data over a specific period of time on an iPhone, iPad, or Android device. This widget is displayed as a line graph on the device. You can configure the widget to display multiple data series on the same graph. An example of a Time Series widget on an iPhone is shown below.
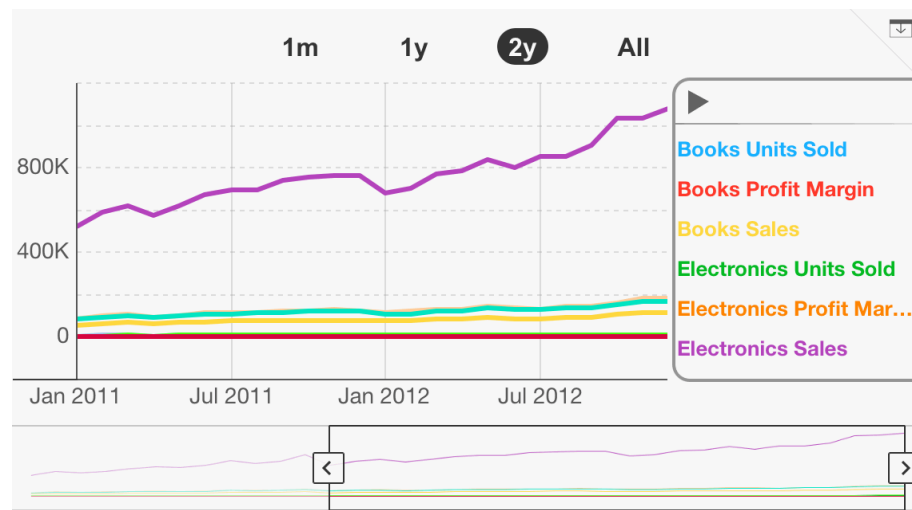
You can configure the Time Series widget to provide data across multiple time intervals. For example, in the image above, data is displayed for a one-month time period. However, the widget can also display data for one year,

several years, or for the entire time period. You can add intervals to a widget by configuring the widget's properties.

The number of data points displayed in a Time Series widget is determined by the maximum number of rows displayed in the grid on which it is based. For steps to change the number of data points displayed in a Time Series widget in a document, see *To determine the maximum number of data points displayed in a document, page 280*.

For iPhones and iPads, you can define:

• Information Windows that display when the widget is tapped.

• A link in the widget to open a report or another document.

Prerequisites

For a Grid/Graph to be used as a Time Series widget, it must meet the following requirements:

• At least one attribute on the rows. The attribute provides the values along the horizontal axis of the widget, and should be time-based.

• At least one metric on the columns. The metric values are graphed in the widget.

• To view data for multiple series, place at least one attribute on the columns. The attribute elements are graphed on the widget's axis.

• Ensure that the row and column headers of the report are not merged.

You can add objects from multiple datasets to the Grid/Graph containing the widget. You must have the correct privileges and the project must allow Grid/Graphs to use multiple datasets. For steps to allow Grid/Graphs to use multiple datasets, see the *Adding Text and Data* chapter of the *Document Creation Guide*.

To create and add a Time Series widget to a document

1. In MicroStrategy Web, open the document in Design or Editable Mode.

2. From the **Insert** menu, point to **Widgets**, then **Mobile**, and select **Time Series**.

3. Click the location on your document where you want to place the widget. The Grid/Graph containing the widget is displayed.

4. Optionally, resize the widget by clicking and then dragging its handles.

5. From the Dataset Objects panel on the left, select attributes and metrics, and drag them on top of the widget, as described in the prerequisites above.

   Android devices can only display up to two metrics in a Time Series widget.

To configure the widget's display properties

6. Right-click the widget, then select **Properties and Formatting**. The Properties and Formatting dialog box opens.

7. From the left, select **Widget**.

8. Click the **Widget Properties** icon . The Time Series Properties dialog box opens.

To add an interval selector to the widget

Interval selectors let users select the time period for which they want to view data in the widget, allowing them to analyze data at different levels of detail. You can add, rearrange, or delete interval selectors in a Time Series widget, as described below.

9. To add an interval selector, complete the following steps:

    a. Click **Add**. The new selector is added and displayed.

    b. Type a name for the selector in the **Name** field.

    c. From the **Template** drop-down list, select the control in the document that contains the time-based attribute you want to use to create the interval selector. The granularity is automatically determined by the last (right-most) attribute on the Grid/Graph's rows, as described above.

    d. From the **Interval unit** drop-down list, select the units in which you want to specify the length of the time interval. For example, to define a six-month interval, you can select **Month** as the interval unit.

    e. Type the number of units you want to include in the interval in the **Interval size** field. For example, if the Interval unit is defined as **Month**, you can type **6** to specify a six-month time interval.

    f. A summary of the interval selector's properties is displayed in the bottom pane. Repeat the appropriate steps above to add additional interval selectors.

10. You can rearrange the order in which an interval selector is displayed. Click **Move up** or **Move down** to change the position of the selector.

11. To delete an interval selector, select the interval selector's name in the **Interval Selector** list to the left, then click **Remove**. The interval selector is removed.

    To use the slider as a selector

12. You can use the slider to filter the data in your dashboard, so that only the data selected in the slider is displayed. Select the **Use slider as selector** check box.

To format colors, labels, and the axis scale

13. Click the **Formatting** tab.

14. To change the background color of the widget, select a color from the **Background** palette.

15. To change the color of the text and lines, select a color from the **Line and Text** palette.

16. The color of each series is displayed in the **Series** palettes. To change the color of a series, select a color from the corresponding palette.

17. From the **Background transparency** drop-down list, select a level of transparency. The higher the percentage, the more transparent the background is.

18. By default, axis labels are condensed, which means the widget allocates more space to the chart area than to the labels. You can change this behavior by clearing the **Condense labels** check box.

19. You can specify the minimum and maximum values of the axis, by completing the following steps:

    a. Select the **Custom axis scale** check box.

    b. Type the **Maximum axis value**.

    c. Type the **Minimum axis value**.

20. Click **OK** to return to the Properties and Formatting dialog box.

21. Click **OK** again to save changes.

To determine the maximum number of data points displayed in a document

ⓘ Increasing the number of rows that can be displayed in a grid may affect performance when the document is displayed.

1. Open the document containing the widget in Design or Editable Mode.

2. Right-click the widget's Grid/Graph and select **Properties and Formatting**. The Properties and Formatting dialog box opens.

3. From the left, select **Grid**.

4. Select the **Enable incremental fetch in Grid** check box.

5. From the **Count By** drop-down list, select **Individual Rows**.

6. Type the maximum number of data points to display in the widget in the **Maximum number of rows per page** field.

7. Click **OK** to save changes.

Downloading and playing videos: Video Player widget

On an iPhone or iPad, the Video Player widget loads and plays a video from a remote location or from the local cache. The widget can display:

• An online video from a streaming service such as YouTube.

• An online video from a file server location.

• A cached video from the WebDAV cache, in offline mode. The WebDAV cache can be populated by a manual download request.

If the mobile device is online, the Video Player widget loads the video from the remote location, unless a local cache already exists on the device's WebDAV cache store. Caching should be set up whenever possible.

When a user requests a video:

1. The widget checks for a local copy stored on the device, regardless of whether the device is connected. If a cached file is used, the widget can start playing the video without loading the full file into memory.

2. If the video is not yet cached, then the widget requests the video from the source. The video can be a streaming video, such as a YouTube video, or a full video download file served by a web server.

   - A streaming video is buffered and played as it downloads. By default, the downloaded video file is discarded when the MicroStrategy Mobile application is closed. You can ensure that the video is downloaded and stored on the mobile device for offline use. For steps, see *Pre-caching online content on the mobile device for offline use*.

   - A file download video is downloaded fully to the client. Once the video is fully downloaded, the video can be played. You can pre-cache the video to download the video before the user requests it. This allows a faster response time when the video is requested. For steps, see *Pre-caching online content on the mobile device for offline use*.

   The video is saved to the WebDAV Content Manager cache store so that it can be shared by other instances of the Video Player widget or the Multimedia widget. The video source URL is used as the key of the cache so it can be matched by other requests to the same video.

You can configure the Video Player widget to use one source for online live requests that are initiated by the user, and a second source for a full file that can be downloaded and cached by a manual download request. For example, the live source can be set to a YouTube location while the offline cache source points to a URL that serves the full video file.

In a different scenario, such as a company that hosts its videos on its own servers, both sources can use the same URL. For the live request, the device directly accesses the video from the hosting web server, if a matching cache is not found on the local cache.

For steps to configure a WebDAV folder, see the *Advanced Reporting Guide*.

To create and add a Video Player widget to a document

1. In MicroStrategy Web, open the document in Design or Editable Mode.

2. From the **Insert** menu, point to **Widgets**, then **Mobile**, and select **Video Player**.

3. Click the location on your document where you want to place the widget.

4. Optionally, resize the widget by clicking and then dragging its handles.

5. Right-click the widget, then select **Properties and Formatting**. The Properties and Formatting dialog box opens.

6. From the left, select **Widget**.

7. Click the **Widget Properties** icon . The Video Player Properties dialog box opens.

8. Do one of the following to define the video's source:

   • To stream the video:

      a. Select **Video streaming**.

      b. The **Embed video HTML** field is used for online live requests initiated by users. Type or copy the HTML needed to embed the video in a site. For example, the HTML for a MicroStrategy Express demo on YouTube is:

      ```
      <iframe width="560" height="315"
      src="//www.youtube.com/embed/AH4Z9fEybF8"
      frameborder="0" allowfullscreen></iframe>
      ```

      c. The **Alternate download URL** is a cache source that serves the full video file. Type the URL in the field.

   • To download the video:

a. Select **Video download**.

b. Type the **Video URL**.

9. To display a thumbnail for the video, type the **Video thumbnail URL**.

> ℹ️ If the video is streamed but an alternate URL is not provided, the Video thumbnail URL field is not available.

10. Click **OK** to return to the Properties and Formatting dialog box.

11. Click **OK** to save changes.

Displaying widgets using the entire screen on mobile devices

By default, when you add a widget to a layout in a document, the widget is sized to take up the entire screen when displayed on an iPhone or Android device. Any additional grids, graphs, or widgets you add to the layout are not displayed. You can choose to display the widget without taking up the entire screen, and allow the display of other grids, graphs, or widgets together in the layout.

To determine whether to display a widget using the entire screen on a mobile device

1. Open the document in Design or Editable Mode.

2. Right-click the Grid/Graph containing the widget and select **Properties and Formatting**. The Properties and Formatting dialog box is displayed.

3. From the left, select **Widget**. Do one of the following:

- To size the widget to fit the entire screen, select the **Full Screen** check box.

- To display the widget without taking up the entire screen, and allow the display of other grids, graphs, or widgets in the layout, clear the **Full Screen** check box.

Displaying widgets on iOS devices with a dark or light theme

On the iPad and iPhone, you can display widgets using a dark or light theme. To do this, change the theme of the document containing the widget. In the image below, the date selection widget on the left uses the dark theme, while the date selection widget on the right uses the light theme.
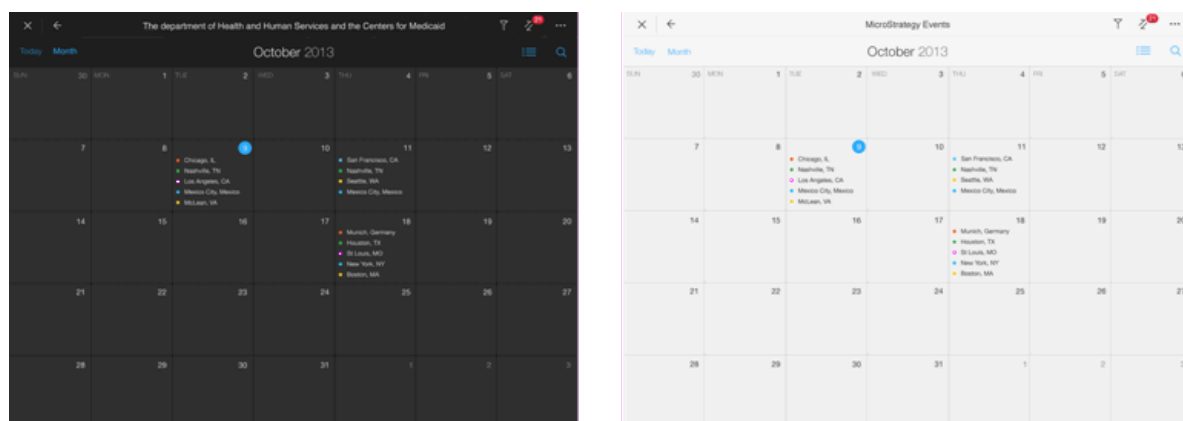
You can change the theme for the following widgets:

1. Map

2. Heat Map

3. Time Series

4. Date Selection

5. Survey

6. Microchart

For steps to change a document's theme, see *Displaying documents on iOS devices with a dark or light theme, page 141*.

Using links in documents

You can create the experience of navigating through a native app by adding links between documents. Each document becomes a page or panel in your app, which a user can access from, for example, a button or tab bar.

You can also create links that perform actions or open other applications. For example, a document designer can include a link that dials a store phone number. The following topics are covered:

- *Opening a device's installed applications from documents, page 287*. You can use links that interact with applications installed with mobile devices, such as email or text messaging.

- *Linking to reports and documents from a mobile document, page 294*. A link lets the user execute another document or report (the target) from a document (the source). Parameters can be passed to answer any prompts or set any selectors that are in the target.

- *Using links to access features within the MicroStrategy Mobile application, page 312*. You can use links in a document to access specific features within the MicroStrategy Mobile application for iPhone or iPad. Examples are viewing a folder and emailing a screenshot of the document.

- *Linking from documents with buttons and tab bars, page 316*. A button can send a user to the various screens, such as the Home screen or the Report List, on an iPad, iPhone, or Android device. A button can open a web page, or run a report or document. You can add a single button to a dashboard, multiple buttons with different formatting in different locations on the dashboard, or a bar of buttons that are all formatted the same, called a tab bar.

- *Storing links on NFC tags on Android devices, page 326*. You can store a link on Near Field Communications (NFC) tags to open a report, document, or folder on an Android device.

Opening a device's installed applications from documents

A document displayed on an iPhone, iPad or Android device can interact with the applications that are installed with the device. For example, a document can send addresses to maps for directions or open a video. These applications include:

- Web browser

- Email

- Phone (applicable to mobile phones only)

- SMS (applicable to mobile phones only)

- Maps

- Videos

To allow users to open an external application in a document, you must create a hyperlink. The hyperlink connects a text field or an image to a web page or application (the target). When the document is viewed on a device, the user can click the control to navigate to the target.

For example, you create a document for the regional managers for a chain of stores. This document contains information about each of the stores in the manager's region, as shown in the image below.
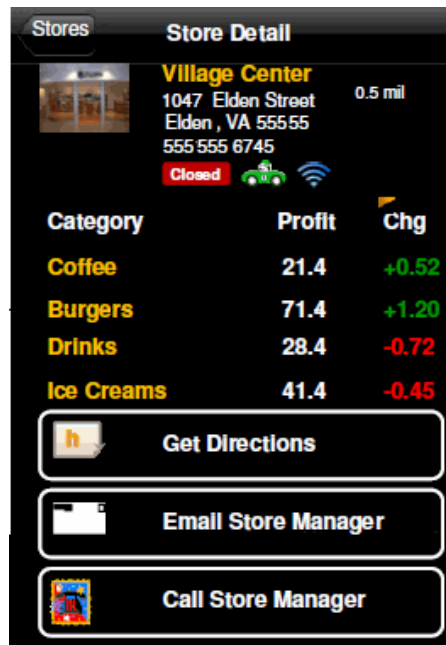
The information includes the store's address, phone number, the store manager's email address, its inventory figures, and so on. When regional managers view this document on their iPhones, they can:

- View a map of the store's location and get directions from their current location

- Email the store manager

- Call the store

To create a link with a larger area that is easier to select, you can define a link that includes both the text and the area around it, or create an image button that users can select. To do this, you can:

- Create an image to use as the button and add a link to it.

- Insert a transparent image into the document, then enlarge and/or position it to cover the desired link area. Link the transparent image to the target. The user can then tap any area covered by the image to open the link. A sample transparent image is located by default in

```
C:\Program Files\MicroStrategy\Intelligence Server\
images\1ptrans.gif.
```

When you create a hyperlink to open an external application, you must use the syntax outlined in the table below. Two examples are included for each type of hyperlink. The first example replaces the italicized variables in the syntax with specific, static text, while the second replaces it with an attribute, so that the hyperlink can change according to the data in your document.

To...	Use This Syntax....

Email	`<a href="mailto:`*EmailAddress*`">`*Name*`</a>`
	
	    Examples:
	
	`<a href="mailto:jdoe@example.com">John Doe</a>`
	
	`<a href="mailto:{StoreMgrEmail}">{StoreMgr}</a>`
	where StoreMgrEmail and StoreMgr are attributes
	
	`<a href="mailto:{Store@StoreMgrEmail}">`
	`{Store@StoreMgr}</a>`
	where StoreMgrEmail and StoreMgr are attribute forms of the Store attribute

Email with a subject	`<a href="mailto:`*EmailAddress?cc=EmailAddress&subject*
	`=`*SubjectLine&body=Message*`">`*Text*`</a>`
	
	    Example:
	
	`<a`
	`href="mailto:jdoe@example.com?cc=msmith@example.com&su`
	`bject`
	`=Greetings%20from%20MicroStrategy!`
	`&body=I%20have%20reviewed%20your%20store's%20sales%20r`
	`esults%20and%20have`
	`"%20the%20following%20feedback%20for%20you:>Contact`
	`John Doe</a>`

Call (applicable to mobile phones only)	`<a href="tel:`*PhoneNumber*`">`*PhoneNumber*`</a>`
	
	    Examples:
	
	`<a href="tel:1-555-555-5555">1-555-555-5555</a>`
	
	`<a href="tel:{StorePhone}">{StorePhone}</a>` where

To...	Use This Syntax....
	StorePhone is an attribute

Use SMS links (applicable to mobile phones only)	`<a href="sms:`*`SMSNumber`*`">`*`Text`*`</a>`
	
	  Examples:
	
	`<a href="sms:1-555-555-5555">I'll be there soon</a>`
	
	`<a href="sms:{MgrPhone}">New Message</a>` where MgrPhone is an attribute

Pass location to Google Maps	`<a href="http://maps.google.com/maps?q=`*`City`*`">`*`City`*`</a>`
	
	  Examples:
	
	`<a href="http://maps.google.com/maps?q=Chicago">Chicago</a>`
	
	`<a href="http://maps.google.com/maps?q={CustomerCity}">{CustomerCity}</a>`
	where CustomerCity is an attribute
	
	`<a href="geo:38.915645,-77.220796">MicroStrategy HQ</a>`,
	where the numbers in the link are the latitude and longitude respectively.
	
	  For links to `maps.google.com` on Android devices, you may be asked to choose whether to open the link using your default browser, or using Maps.

Get directions from Google Maps	`<a href="http://maps.google.com/maps?daddr=`*`Destination`*`&saddr=`*`Start`*`">Text</a>`
	
	  Examples:
	
	`<a href="http://maps.google.com/maps?daddr=Washington+,DC&saddr=Chicago">Directions</a>`
	
	`<a href="http://maps.google.com/maps?daddr={CustomerAddress}&saddr={StoreAddress}">Directions from {StoreName} to {CustomerName} location</a>`

To...	Use This Syntax....
	where CustomerAddress, StoreAddress, StoreName, CustomerName are attributes
Open a video	Example: `<a href="http://phobos.apple.com/WebObjects/MZStore.woa /wa/viewAlbum?i=?id=375385132"> <img height="15" width="61" src="http://ax.phobos.apple.com.edgesuite.net/images/b adgeitunes61x15dark.gif" alt="Tech News Today"></img> </a>`
Display a web page in the internal web browser (iPad) By default, web pages open in Safari	*WebPageURL*`?inApp=1` Replace *WebPageURL* with the URL of the web page you want to display in the internal web browser. If the URL contains a `?` (question mark) followed by a list of parameters, such as `http://news.google.com/news?ned=us&topic=h&output=rss`, type **&** (ampersand) followed by **inApp=1**. For example, `http://news.google.com/news?ned=us&topic=h&output=rss& inApp=1`. Otherwise, the URL of the web page you want to display must end with a `/` (forward slash), followed by **?inApp=1**. For example, to link to the Google web page, the URL is `http://www.google.com/?inApp=1`.

You use the hyperlink properties to define links to the device's applications, as described below.

To create a hyperlink to an application on the device

1. In MicroStrategy Web, open the document in Design Mode or Editable Mode.

2. To use a text field for the hyperlink, complete the following steps (see the next step for instructions to add an image instead):

a. From the **Insert** menu, select **Text**.

b. Click in the section of the document where you want to place the text field. If you click and drag in the section, you can size the text field.

> To ensure that the area of a link is large enough to recognize a user selecting it, make sure it has a height and width of at least 40 pixels.

c. Type the text to be displayed to users into the text field. You can add static text, dynamic text (in the form of data fields and auto text codes), or a combination to the text field:

- To add static text, type the static text into the text field.

- To add a data field, drag and drop a dataset object from the **Dataset Objects** panel into the text field.

- To add an auto text code, from the **Insert** menu, select **Auto-text**, then select the code to insert.

> For background information about adding text to documents, see the *Report Services Document Creation Guide.*

3. To use an image for the hyperlink, complete the following steps:

a. From the **Insert** menu, select **Image**.

b. Click in the section of the document where you want to place the image. If you click and drag in the section, you can size the image. The Properties and Formatting dialog box opens.

> To ensure that the area of a link is large enough to recognize a user selecting it, make sure it has a height and width of at least 40 pixels.

c. Type the address of the image file to insert in the **Source** field. Navigate to and select the image file to insert in the document.

d. Click **OK**. The image appears in the document.

> For background information about adding images to documents, especially to ensure that the image is available as needed, see the Document Creation Help.

4. Right-click the text field or image that you just added, and select **Properties and Formatting**. The Properties and Formatting dialog box opens.

5. From the left, click **General**, then select the **Is hyperlink** check box.

6. In the **Hyperlink** field, delete the "http://" text that is automatically filled in. Following the syntax in the table on *click here*, type the hyperlink into the **Hyperlink** field. You can type static text, dynamic text (in the form of data fields and text codes), or a combination, as described below:

- To add static text, type the static text into the text field.

- To add a data field (that is, an object from a dataset report), type the object's name within braces, such as `{Revenue}` or `{Region}`. The name must match either the name of an object in a dataset or its alias. If either name contains spaces or special characters, you must type it in square brackets [ ] within the braces; for example, `{[Manager Name]}`.

> A special character is any character other than a - z, A - Z, 0 - 9, #, _, and . (period).

- To add an auto text code (that is, document and dataset report information), type the code within braces. As with data fields, if an object's name contains spaces or special characters, enclose it in

square brackets within the braces. For background information about available auto text codes, see the Document Creation Help.

7. Click **OK** to return to the document. Notice that the text field is now underlined, indicating that it is a hyperlink.

Linking to reports and documents from a mobile document

A link is a connection in a document to another document or a report. A link lets a user execute another document or report (the target) from a document (the source), and to pass parameters to answer any prompts that are in the target. You can link from a text field, an image, or a button.

For example, if a user is viewing a document containing regional sales, he can select a particular region to execute another document that displays sales for the stores in that region. This is a form of drilling, where the user has drilled from region to store. If the document contains a selector, the user can select a specific region in the selector, then tap a link to another document that displays sales for the months in that year. The source document could also link to the underlying dataset report, to display profit and cost values as well.

Most links can be created using the Link Editor. If you want to specify the page-by or report view (grid or graph) of a report, or specify the layout or grouping of a document, use the hyperlink properties and create the link URLs manually, by using the object ID and link syntax. For steps to create links using the Link Editor, see *Creating a link for a mobile document, page 295*. For steps to create links using manual URLs, see *Creating a link URL to specify page-by, report view, layout, or grouping for the target, page 305*.

Links you can create for iOS devices

You can use links to do the following on an iPhone or iPad:

- Execute a report, specifying the page-by, prompt answers, and report view (grid, graph, or both grid and graph).

- Execute a document, specifying the layout, grouping, prompt answers, and selector values.

  - A multi-layout document contains multiple documents, each in its own layout, creating a "book" of documents. Each layout functions as a separate document, with its own grouping, page setup, and so on, but the layouts are generated into a single PDF document.

  - Grouping a document helps users understand the data better. Grouping the data sets up a type of hierarchy within the document, and an inherent or implied sort order for the data.

    You can change the grouping or layout for the currently displayed document, or for a target document. If you change the grouping or layout for the currently displayed document, you still must use the entire link URL, including the document ID, event parameter, and so on.

- Reprompt a report or document.

- Display the Home screen, Shared Library, Report List, Settings screen, Status screen, or Help screen.

Links you can create for Android devices

You can use links to do the following on an Android device:

- Execute a report, specifying whether it is displayed as a grid, a graph, or both a grid and graph

- Execute a document

- Run a report or document from a different project or server

Creating a link for a mobile document

Prerequisites

- The source document and any target reports/documents must be created.

- If the target report/document contains prompts, you must know what types of prompts the targets require and how they will be answered by the link (or by the user). For details on each prompt answer method, see *Specifying how prompts are answered in the target, page 302*.

- If you want to pass selector values from the source document to the target document, both the source and the target must contain the same selector. This means that either both documents must contain a selector with the same name (such as Region Selector), or both documents must contain a selector that uses the same source object (such as Region).

To create a link for a mobile document

1. In MicroStrategy Web, open the document in Design Mode or Editable Mode.

2. You can link from a text field, an image, or a button. Do one of the following:

   - To link from a text field, complete the following steps:

     a. From the **Insert** menu, select **Text**.

     b. Click in the section of the document where you want to place the text field. If you click and drag in the section, you can size the text field.

        To ensure that the area of a link is large enough to recognize a user selecting it, make sure it has a height and width of at least 40 pixels.

     c. Type the text to be displayed to users into the text field. You can add static text, dynamic text (in the form of data fields and auto text codes), or a combination to the text field:

- To add static text, type the static text into the text field.

- To add a data field, drag and drop a dataset object from the **Dataset Objects** panel into the text field.

- To add an auto text code, from the **Insert** menu, select **Auto-text**, then select the code to insert.

  For background information about adding data fields and auto text codes to documents, see the Document Creation Help.

  d. Right-click the text field, and select **Edit Links**. The Links dialog box opens.

- To link from an image, complete the following steps:

  a. From the **Insert** menu, select **Image**.

  b. Click in the section of the document where you want to place the image. If you click and drag in the section, you can size the image. The Properties and Formatting dialog box opens.

    To ensure that the area of a link is large enough to recognize a user selecting it, make sure it has a height and width of at least 40 pixels.

  c. Type the address of the image file to insert in the **Source** field.

  d. Click **OK**. The image appears in the document.

    For background information about adding images to documents, see the *Report Services Document Creation Guide.*

  e. Right-click the image, and select **Edit Links**. The Links dialog box opens.

- To link from a button, complete the following steps:

a. Create the button, as described in *Linking from documents with buttons and tab bars, page 316*.

b. Right-click the button, and select **Properties and Formatting**. The Properties and Formatting dialog box opens.

c. Click ![gear icon] to configure actions on the button. The Links dialog box opens.

3. In the Links dialog box, if other links already exist on this document, click the **New** icon ![new icon] to create a new link.

4. Type a name for the link in the **URL display text** field. Since the name appears in the link, it should be descriptive and informative to help users identify the target of the link.

5. Perform the appropriate steps below, depending on whether you are linking to a web page or to a report/document:

   - To link to a web page:

     a. Select **Navigate to this URL**. This option is available only if you selected to create a link from a text field or image.

     b. Type the target URL in the field below **Navigate to this URL**.

     c. Continue this procedure at *To define additional links and determine link behavior, page 301*.

   - To link to a screen on the mobile device:

     a. Select **Perform this**.

     b. From the **Perform this** drop-down list, select the screen to link to.

     c. Continue this procedure at *To define additional links and determine link behavior, page 301*.

- To link to a report or document:

  a. Select **Run this report or document**.

  b. Click the browse button (**...**) below **Run this report or document** to find and select the target report or document.

To apply prompt answers to targets that contain prompts

1. In MicroStrategy Web, open the document in Design Mode or Editable Mode.

2. The box below **Run this report or document** contains a list of any prompts included in the target report/document. Select a target prompt from the box.

3. Select a prompt answer method from the drop-down list. For examples of each prompt answer method, see *Specifying how prompts are answered in the target, page 302*.

   - **Answer with the same prompt from the source**: Select this option if you want to use the same prompt answers for both the source report and the target report/document. This option requires that both the source and target documents use the same prompt.

   - **Prompt user**: Select this option if you want the user to type prompt answers after he taps the link to run the target report/document.

   - **Answer with an empty answer**: Select this option if you want to ignore the prompt in the target report/document. The prompt is not answered. This option requires that the prompt in the target is not required. If the prompt in the target is required, the user is prompted to provide an answer.

   - **Use default answer**: Select this option if you want the prompt in the target to use the default answer defined by the prompt's designer.

This option requires that a default answer is defined for the prompt in the target.

The following methods are not intended to be used with buttons. For a button, use one of the previous methods.

- **Answer dynamically**: Select this option if you want to answer the prompt using the object selected in the source. This option is only available for attribute element prompts and value prompts.

- **Answer using current unit**: Select this option if you want to answer the prompt using the object selected in the source. This option is only available for hierarchy prompts.

- **Answer using all valid units**: Select this option if you want to answer the prompt in the target with any object to the left of or above the object that the user selects in the source document. This method passes all pertinent selections in the source, rather than just the selection made for the link. This option is available only for hierarchy prompts.

4. For each prompt in the target report/document, repeat the step above.

To specify the prompt answer method for prompts not in the list

1. In MicroStrategy Web, open the document in Design Mode or Editable Mode.

2. The box below **Run this report or document** contains a list of any prompts included in the target report/document.

3. Any other prompts are those prompts that are not in the target report/document when you are creating the link. For example, these prompts can include prompts added to the target later. By default, the **Prompt user** answer method is selected for these prompts, but you can change the method. To do this, follow the steps below:

a. Select **Any other prompts** in the list.

b. Select a prompt answer method from the list; these are the only methods available for the Any other prompts option. For examples of each answer method, see *Specifying how prompts are answered in the target, page 302*.

- **Answer with the same prompt from the source**

- **Prompt user** (default)

- **Answer with an empty answer**

- **Use default answer**

To apply selector values to a target document that contains selectors

1. In MicroStrategy Web, open the document in Design Mode or Editable Mode.

2. Choose a selector value method from the **Pass all selector values** drop-down list. For an example of passing selector values, see *Passing selector values from the source to the target, page 304*.

- To match selector values by the selector's source attribute (that is, the object displayed in the selector), select **Match Selectors by Source Attribute**.

- To match selector values by the name of the selector, select **Match Selectors by Control Name**.

To define additional links and determine link behavior

1. Repeat the steps above if you want to create additional links. You can create multiple links on the same object.

2. Select the **Open in new window** check box to have the target report/document open in a new window. This allows the target and the

source documents to be visible simultaneously. If this check box is cleared, the target report/document or web page opens and replaces the source document.

3. If the object has more than one link, select the link that you want to make the default link, and click the **Set as Default** icon 🔗. When a user taps the object, the default link is automatically used. To access other links, the user tabs and holds the object, which displays a list of links that he can choose from.

4. Click **OK** to return to the source document and to save your link.

Specifying how prompts are answered in the target

ℹ️ This section contains only a brief overview of prompt answer methods. For more detailed descriptions of the different prompt answer methods, including examples, see the *Linking Documents* chapter of the Document Creation Help. For background information on prompts, see the description of prompt types in *Building Query Objects and Queries* chapter in the Basic Reporting Help.

To pass parameters to the target, the target must contain a prompt. When you create a link, you define how the target's prompt is answered, by selecting one of the following prompt answer methods:

- **Answer with the same prompt from the source**. The same prompt answers that were used to execute the source are used in the target. This option requires that the source and target use the same prompt. If the same prompt does not exist in the source and in the target, the user is prompted to provide an answer when the target is executed.

- **Prompt user**. When the target is executed, the user is prompted to provide answers manually.

- **Answer with an empty answer**. The prompt in the target is ignored, which means that the prompt is not answered. No prompt answer is

provided from the source and the user is not prompted to provide answers.

> The prompt must not be required, because if the prompt is required, the user is prompted to provide an answer when the target report is executed by clicking the link.

The **Answer with an empty answer** method, when used in conjunction with the dynamic prompt answer method, allows a source document to answer one prompt in a target with the user selection, while ignoring any other prompts.

- **Use default answer**. The prompt is answered by the default prompt answer for the prompt in the target. If the target prompt does not have a default answer, the **Answer with an empty answer** method is used. In this case, the prompt is not answered, unless it is required, in which case the user is prompted to provide an answer.

The following prompt answer methods are not intended to be used with buttons, since a button does not select an object in the source. If you use one of them with a button, the user is prompted for an answer. For a button, use one of the methods described above.

- **Answer dynamically**. The object selected in the source is passed to the prompt in the target. If this object does not answer the target prompt, the **Answer with an empty answer** method is used. In this case, the prompt is not answered, unless it is required, in which case the user is prompted to provide an answer.

  Available only for attribute element prompts and value prompts.

- A hierarchy prompt allows users to select prompt answers from one or more attribute elements from one or more attributes. This prompt gives users the largest number of attribute elements to choose from when they answer the prompt to define their filtering criteria. The **Answer using all valid units** prompt answer method passes selections made on the source document, rather than just the selection made for the link, to the target. To

restrict the prompt answer to just the selected attribute element, use the **Answer using current unit** prompt answer method. Like the Answer dynamically method, only the attribute element that is selected is passed to the target.

These two prompt answer methods are available only for hierarchy prompts.

- **Answer using current unit**. The prompt is answered using the object selected in the source. If the user selects an attribute header rather than a specific attribute element, the **Answer with an empty answer** method is used. In this case, the prompt is not answered, unless it is required, in which case the user is prompted to provide an answer.

- **Answer using all valid units**. Any object to the left of or above the user selection in the source is used as the prompt answer for the target. In other words, this method passes all the selections made on the source, rather than just the selection made for the link. If the user does not select any valid objects (for example, the user selects an attribute header rather than a specific attribute element), the **Empty answer** method is used. That is, the prompt is not answered, unless it is required, in which case the user is prompted.

You can select a prompt answer method for prompts that are not in the target when you are creating the link. These can be either:

- Prompts added to the target after the link is created

- Prompts that are created as the result of an answer to one of the original prompts in the target, such as a prompt-in-prompt answer

These prompts are listed as the **Any other prompt** option in the list of prompts in the Link Editor.

Passing selector values from the source to the target

A selector allows each user to interact with a document to display only the subset of data that he is interested in or only specific attribute elements or

metrics.

The selector values that the user chooses in the source document can be passed to the selectors in the target document.

For example, the Regional Revenue document contains a selector for Region, so that the user can view revenue for a specific region. The document contains a link to the Category Revenue by Region document, which also contains a Region selector. If you select Central in the selector, only the Central region, with its revenue, is displayed in the document. If you tap the link for the Category Revenue by Region document, that document is displayed. The selector is set to Central, the same as the selector in the Regional Revenue document. Only Central's data is displayed, by category.

To pass selector values from the source document to the target document, both the source and the target must contain the same selector. This means that either both documents must contain a selector with the same name (such as Region Selector), or both documents must contain a selector that uses the same source object (the object displayed in the selector, such as Region). When you create a link that passes selector values, you can choose to match the selector values either by the selector name or the source object.

Creating a link URL to specify page-by, report view, layout, or grouping for the target

The Link Editor provides a quick and easy way to link to documents and reports. For steps to create a link using the Link Editor, see *Creating a link for a mobile document, page 295*.

For a document on an iPhone or iPad, you can specify a report's page-by or report view, or a document's layout or grouping. For a document on an Android device, you can specify a report's report view. (The report view is whether a report is displayed as a grid, a graph, or both a grid and graph.) To specify these parameters, use the hyperlink properties and create the link URLs manually, by using the object ID and link syntax, as described below.

Prerequisites

Before creating links, create any target documents and reports, and use the following procedure to obtain their IDs:

1. Navigate to the folder location of the report or document.

2. Right-click the report or document, and select **Properties**. The Properties dialog box is displayed, with the object's ID displayed in the ID field. You can highlight and copy this ID to use in a link URL.

To create a link using a manual URL

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1. In MicroStrategy Web, open the document in Design Mode or Editable Mode.

2. To use a text field for the hyperlink, complete the following steps (if you are adding an image, skip this step):

   a. From the **Insert** menu, select **Text**.

   b. Click in the section of the document where you want to place the text field. If you click and drag in the section, you can size the text field.

   > To ensure that the area of a link is large enough to recognize a user selecting it, make sure it has a height and width of at least 40 pixels.

   c. Type the text to be displayed to users into the text field. You can add static text, dynamic text (in the form of data fields and auto text codes), or a combination to the text field:

- To add static text, type the static text into the text field.

- To add a data field, drag and drop a dataset object from the **Dataset Objects** panel into the text field.

- To add an auto text code, from the **Insert** menu, select **Auto-text**, then select the code to insert.

  For background information about adding data fields and auto-text codes to documents, see the Document Creation Help.

3. To use an image for the hyperlink, complete the following steps:

   a. From the **Insert** menu, select **Image**.

   b. Click in the section of the document where you want to place the image. If you click and drag in the section, you can size the image. The Properties and Formatting dialog box opens.

      To ensure that the area of a link is large enough to recognize a user selecting it, make sure it has a height and width of at least 40 pixels.

   c. Type the address of the image file to insert in the **Source** field.

   d. Click **OK**. The image appears in the document.

      For background information about adding images to documents, see the Document Creation Help.

4. Right-click the image or text field, and select **Properties and Formatting**. The Properties and Formatting dialog box opens.

5. From the left, click **General**, then select the **Is Hyperlink** check box.

6. Type the link URL in the **Hyperlink** field:

   - To have the link execute a document, use the syntax:

```
http://
MSTRMobileURL
?&src=
source
&evt=2048001&currentViewMedia=2&documentID=objectID
```

- To have the link execute a report, use the syntax:

```
http://
MSTRMobileURL
?&src=
source&evt=4001&reportViewMode=view&reportID=objectID
```

- To add additional parameters to the URL, such as providing answers for the target document's prompts, see *Using links to display document layouts and group data, and run reports and documents on other servers and projects, page 309*.

Replace the italicized variables, as listed in the following table:

Variable	Replace With

MSTRMobileURL	To use an absolute path to your Mobile Server, use one of the following:
	
	- For .NET
	
	  MobileServer/MicroStrategy/asp/Main.aspx
	
	- For J2EE
	
	  MobileServer/MicroStrategy/servlet/mstrWeb
	
	Replace *Mobileserver* with the name of your MicroStrategy Mobile Server.
	
	To use a relative path to your Mobile Server, use `mstrWeb`.

source	The page component that should handle the action and the event:

Variable	Replace With
	• For a document using J2EE format, `mstrWeb.2048001` • For a document using .NET format, `Main.aspx.2048001` • For a report using J2EE format, `mstrWeb.4001` • For a report using .NET format, `Main.aspx.4001`
view	Report view mode: • For grid view: `1` • For graph view: `2` • For grid and graph view: `3`
objectID	The object ID of the target document or report

7. Click **OK** to return to the document.

Using links to display document layouts and group data, and run reports and documents on other servers and projects

Once you have created a link to run a report or a document on an iPhone or iPad, you can add parameters to the URL to perform additional tasks, such as providing answers for prompts in the linked document, or specifying the layout to display when a document is run.

For Android and iOS devices, you can run reports or documents from a different project or server. The project or server that you link to must be defined in the mobile configuration for the device.

The table below lists the tasks you can perform, and the syntax for the link parameters to perform them. You can add these parameters to a link URL by separating each parameter with an ampersand (`&`). The link parameters are case sensitive. For example, the following URL contains parameters to display the first layout in a document:

```
Main.aspx?evt=2048001&currentViewMedia=2&documentID=E8663
E7A4D8CDF05C060129D0061692&layoutIndex=0
```

Task	Syntax
Run a report or document from a different project or server	`Server=` `servername` `&Project=projectname&uid=username&pwd=password` Replace `servername`, `projectname`, `username`, and `password` with the name of the server, project, and the login name and password to use to log in respectively. By default, if the URL does not specify a server and project, the current server and project are used. You can specify these parameters, called session parameters, to execute a report or document in a different server or project, and provide the appropriate login name and password. For more information on session parameters, see the *Customizing MicroStrategy Web* section in the Web SDK help, which is available from the SDK page in MicroStrategy Community.
Display a specific layout in a document	`layoutIndex=layout` Replace `layout` with the number of the layout you want to display. The first layout in the document is 0, the second is 1, and so on.
Specify the group-by element in a document	`groupByElements=` `groupByUnitID;groupByUnitType;groupByElementID` Replace the italicized variables with the following: • `groupByUnitID`: The ID of the group-by attribute or consolidation. You can use `{&AttributeName@GUID}`, to provide the ID automatically. Replace `AttributeName` with the name of the attribute or consolidation. • `groupByUnitType`: Use `12` for an attribute, or `47` for a consolidation. • `groupByElementID`: The ID of the group-by element. You can use `{&AttributeName@LongElementID}`, to provide the ID automatically. Replace `AttributeName` with the name of the attribute or consolidation. You can specify multiple group-by elements by separating each set of

Task	Syntax

	group-by parameters with a caret (^), as follows:
	
	`groupByElements=`
	`groupByUnitID1`
	`;`
	`groupByUnitType1`
	`;`
	`groupByElementID1`
	`^groupByUnitID2;groupByUnitType2;groupByElementID2`

Specify the page-by element in a report	`pageByElements=`
	`pageByUnitID;pageByUnitType;pageByElementID`
	
	Replace the italicized variables with the following:
	
	• *`pageByUnitID`*: The ID of the page-by attribute or consolidation. You can use `{&AttributeName@GUID}`, to provide the ID automatically. Replace *`AttributeName`* with the name of the attribute or consolidation.
	
	• *`pageByUnitType`*: Use `12` for an attribute, or `47` for a consolidation.
	
	• *`pageByElementID`*: The ID of the page-by attribute or consolidation. You can use `{&AttributeName@LongElementID}`, to provide the ID automatically. Replace *`AttributeName`* with the name of the attribute or consolidation.
	
	You can specify multiple page-by elements by separating each set of page-by parameters with a caret (^), as follows:
	
	`pageByElements=`
	`pageByUnitID1`
	`;`
	`pageByUnitType1`
	`;`
	`pageByElementID1`
	`^pageByUnitID2;pageByUnitType2;pageByElementID2`

Task	Syntax
	For information about finding the ID of an individual attribute element, see *To obtain the ID of a specific attribute element in a document, page 312*.

To obtain the ID of a specific attribute element in a document

1. To obtain the ID of a specific element in an attribute, you must first obtain the ID of the attribute. Navigate to the folder location of the attribute.

2. Right-click the attribute, then select **Properties**. The Properties dialog box is displayed, with the attribute's ID displayed in the ID field.

3. Highlight the ID, then copy it to the clipboard.

4. Open the document that contains the attribute in Editable Mode.

5. Right-click the header of the attribute in the Grid/Graph, then point to **Attribute Forms**, and select **ID**. The ID of each element in the attribute is displayed.

6. The full attribute element ID is the ID of the element's attribute, followed by a colon (:) and the ID of the element displayed in the grid. For example:

   8D679D4B11D3E4981000E787EC6DE8A4:2

Using links to access features within the MicroStrategy Mobile application

You can use links in a document to access specific features within the MicroStrategy Mobile application for iPhone or iPad. For example, you can add a link to display the My Reports folder or email a screenshot of the document.

ℹ️ You can use the Link Editor to quickly create the following links, instead of typing the URL into a hyperlink, to display the:

- Help

- Home screen

- Report List

- Shared Library

- Status screen

- Settings screen

For steps, see *Creating a link for a mobile document, page 295*.

The procedure to create the following hyperlinks is identical to that for creating hyperlinks to the device's installed applications. For steps, see *To create a hyperlink to an application on the device, page 291*.

The table below lists the types of links you can create, and the URL to use to create them.

| Task	URL
View a folder	`mstr://?evt=2001&folderID=`*`foldernumber`* Replace *`foldernumber`* with the ID of the folder you want to display.
Display the Shared Reports folder	`mstr://?evt=2001&systemFolder=7`
Display the My Reports folder	`mstr://?evt=2001&systemFolder=20`
Email a screenshot of the document	`mstr://?evt=3037` The screenshot is added to the email as an attachment. To add a subject to the email, add `&emailSubject=`*`subject`* to the end of the URL, then replace *`subject`* with the subject. For example, to send an

Task	URL
	email with the subject "Your requested report", type `mstr://?evt=3037&emailSubject=Your+requested+report.`
Annotate and Share the report or document	`mstr://?evt=3175`
Print the current document	`mstr://?evt=3103`

Print a target document	`mstr://evt=2048001&src=`
	source
	`.2048001&visMode=0&currentViewMedia=20&documentID=`*objectID*
	
	`Where:`
	
	`source` is the page component that should handle the action and the event.
	
	`objectID` is the object ID of the target document.

Display the Help	`mstr://?evt=3994`
Display the Home screen	`mstr://?evt=3995`
Display the Shared Library	`mstr://?evt=3996`
Display the Reports or Subscriptions screen, as applicable	`mstr://?evt=3997`
Display the Status screen	`mstr://?evt=3998`
Display the Settings screen	`mstr://?evt=3999`

| Task	URL
Log out the user	`mstr://?evt=4000`
Return to the previously viewed document	`mstr://?evt=3124`
Select a specific panel in a panel stack	`mstr://?evt=2048076&psName=`*PANEL_STACK_NAME*`&pName=`*PANEL_NAME* Replace the italicized variables as follows: *PANEL_STACK_NAME*: The name of the panel stack to target *PANEL_NAME*: The name of the panel to select To select panels from multiple panel stacks, use the following format: `mstr://?evt=2048076&psKey=`*PanelStack1|PanelStack2|…*`&pKey=`*PanelK1|PanelK2|…* Replace the italicized variables as follows: *PanelStack1*, *PanelStack2*, etc.: The names of the panel stacks to target. *PanelK1*, *PanelK2*, etc.: The names of the panels to select, in the order of the panel stack. For example, *PanelK1* is a panel in *PanelStack1*.
Display a specific Information Window	`mstr://?evt=2048500&panelName=`*Name* Replace *Name* with the name of the panel stack you have created to use as the Information Window.
Display a selection screen that allows you to specify the element to use to group data	`mstr://gb/?e={&`*AttributeName*`@ElementID}&a={&`*AttributeName*`@GUID}&s=`*style* Replace *AttributeName* with the name of the attribute you want to use to group data. Replace *style* with one of the following: To display the attribute elements in a directory-like list: `0` To display the attribute elements on a wheel: `1`
Re-prompt the document	`mstr://pr`

Linking from documents with buttons and tab bars

A button can send a user to the various screens, such as the Home screen or the Report List, on an iPad, iPhone, or Android device. A button can run a report or document, or open a web page or Information Window. An Information Window lets users view additional information in a pop-up window. In MicroStrategy Web, a button can open a web page, or run a report or document.

For example, the document shown below contains several buttons. Notice that all the buttons are displayed in white.
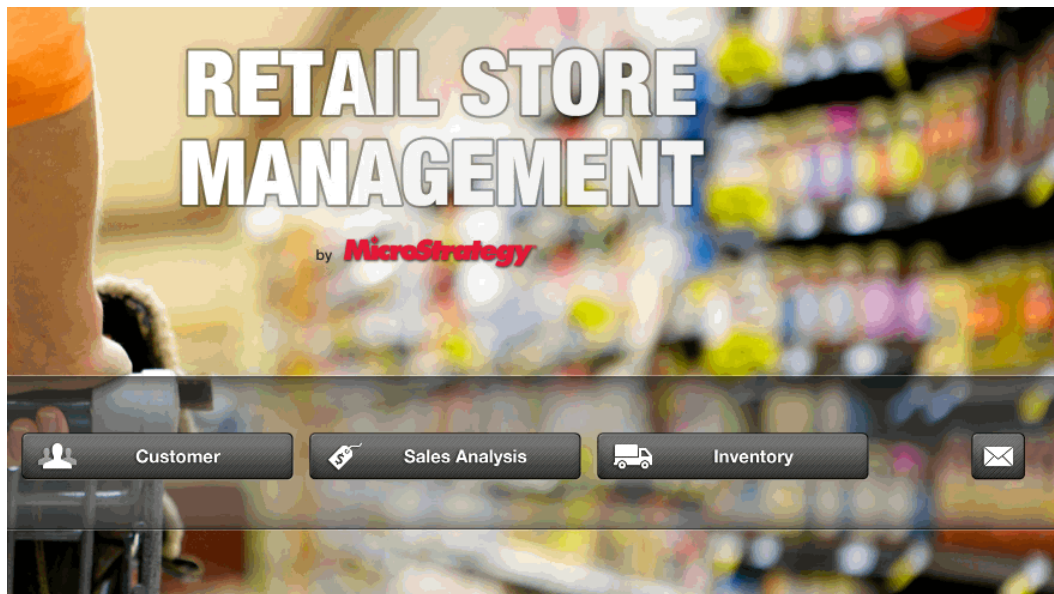
A button can change its appearance after a user taps it. When a user taps the Customer button, for example, the button changes to blue, as shown below. This is referred to as its highlight state. The button's initial state (when it is not selected) is referred to as its normal state.
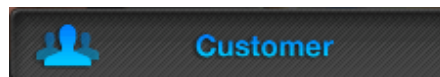
A customer analysis document is displayed. If a user tapped the Sales Analysis button instead, a regional sales document is displayed. If a user taps the button with the envelope, the email program is launched.

The different button styles determine whether a caption, icon, or both are displayed. A caption is the text that describes the button's action. The icon is a small image that represents the button's action. If both a caption and an icon are displayed, the button style also determines where the caption and icon are located in relation to each other. The icon can be to the left or the right of the caption, or it can be above the caption.

You can also select the custom style, which allows you to select an image to display as the button. The image can be any shape, size, and color. The image is displayed on your mobile device without any additional formatting. You can use two different images, one for the normal state and the other for the highlighted state. The example above uses custom style buttons.

Each button can have more than one link. The same button can be linked to multiple web pages, reports, and documents. If a default link has been defined, that link is executed when the button is tapped. To open a list of links, tap and hold the button. If a default link has not been defined, tapping the button opens the list of links.

You can add a single button to a document, or add multiple buttons with different formatting in different locations on the document; see *Creating a button to link from a Mobile document, page 322* for steps. For documents displayed on an iOS device, you can create a bar of buttons that are all formatted the same, called a tab bar. A tab bar displays at the bottom of the screen, similar to tab bars in other iOS applications.

You create the tab bar as a navigation document, which contains only the tab bar. This allows the tab bar to display all the time, even when a user changes panel stacks or layouts on a document, or switches to a different document. In effect, you are creating a navigation system for the set of Mobile documents that are linked with the tab bar. The tab bar is shown only when navigating the documents linked in the tab bar. The tab bar is not displayed if either of the following cases:

- A user opens a linked document from a folder, not from the navigation document or tab bar.

- A user opens a document that is not linked in the tab bar.

The navigation document becomes the home page or launch site for this set of documents. When a user opens the navigation document, the tab bar and the document linked in the first button are displayed.

For example, a navigation document, called Store Dashboards, has been created for a project. The user opens Store Dashboards, and the Overview dashboard is displayed, along with the tab bar, as shown below:
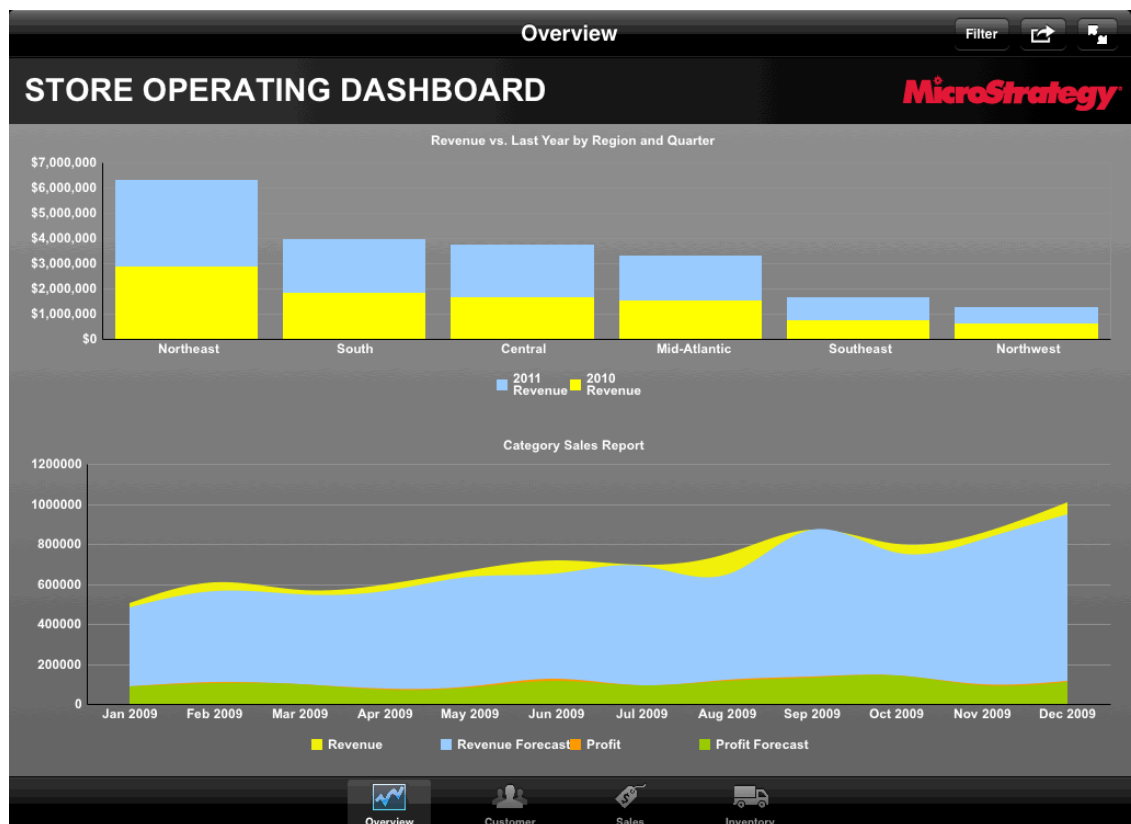
Notice that the button for Overview is selected in the tab bar. The user taps the button for Customer, which causes that document to display, as shown below:
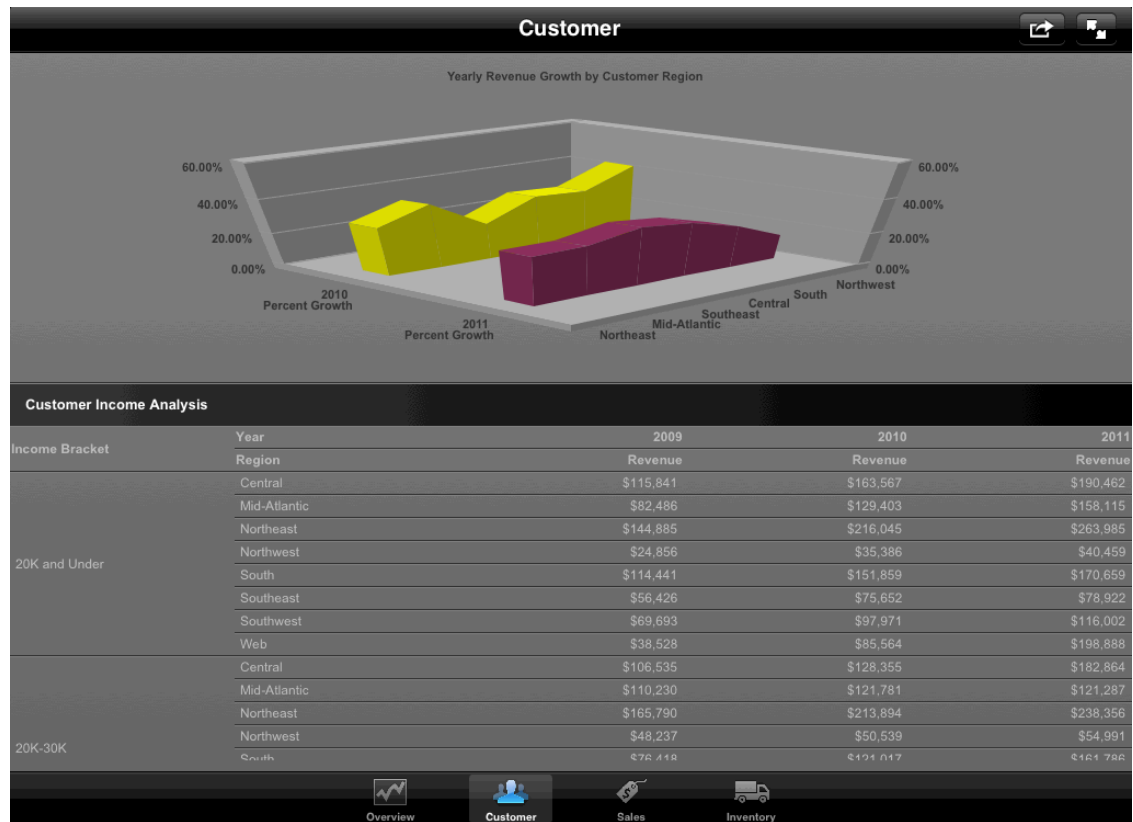
Notice that the button for Customer is selected in the tab bar, and there is no Back button at the upper left.

Creating a tab bar to hold buttons

A tab bar is a bar of navigation buttons, displayed at the bottom of an iOS document. The tab bar is displayed all the time, even when a user changes panel stacks or layouts on a document, or switches to a different document. In effect, you are creating a navigation system for a set of Mobile documents.

You create the tab bar as a navigation document, which contains only the tab bar. You can customize the background tint of the tab bar, and the color of the selected button's icon (the highlight state). When the tab bar is displayed on a mobile device, the caption and icon colors use a generic iOS format to enhance readability. In the examples above, the background of the tab bar has a tint of black, with the selected button's icon highlighted in blue.

The selected button's caption is automatically displayed in white, while the captions of the other buttons automatically remain gray.

You can add buttons to the tab bar, remove buttons from the tab bar, and move the buttons around on the tab bar. For each button on the tab bar, you define the link and the icon. If you define more than five buttons for an iPhone document or eight for an iPad document, a button labeled More is automatically added to the tab bar.

Take into account the height of the tab bar, which is 49 points, when you design a document that will be linked from a tab bar.

Best practices for creating the button image

The button's image is used by iOS to create the icon that is displayed in Mobile, so you do not need to create a full-color image for the button. Some best practices to create the image for the button include:

- Use pure white with the appropriate alpha transparency.

- Do not use a drop shadow.

- Use anti-aliasing.

- Bevels should be 90°. The bevel should look like a light source is positioned at the top of the image.

To ensure that the tab bar icon renders sharply on devices with different resolutions, follow these suggestions:

- If you are designing the tab bar to be displayed on a high-resolution (retina display) device, design your button icon to be about 60 x 60 pixels. Add the text `@2x` as the suffix of the image name, for example, `icon@2x.jpg`. For devices with high-resolution screens, such as the iPhone 6 Plus and newer, use the suffix `@3x`. The image is shown as designed on a high resolution device, without any stretching or shrinking at the pixel level. On

low resolution devices, the image is scaled to support the lower resolution.

- If you are designing the tab bar for low-resolution devices, design your button icon to be about 30 x 30 pixels. Do not include the `@2x` suffix in the image name. The image is shown as designed on low resolution devices, without any stretching or shrinking at the pixel level. On high resolution devices, the image is scaled to four times its original size at the pixel level, causing the image to look blurry.

To add a tab bar for an iPad or iPhone document

1. In MicroStrategy Web, click the MicroStrategy icon at the top of any page and select **New Document**. The Create Document page opens.

2. Select either **Navigation for iPad** or **Navigation for iPhone**, and click **OK**. The Document Editor opens in Design Mode. A tab bar is already displayed in the document template, with two buttons, in the Document Footer. No other document sections are available.

    To select the tab bar's colors

3. Right-click the tab bar (not a button) and select **Properties and Formatting**. The Properties and Formatting dialog box opens.

4. From the left, select **Color and Lines**.

5. From the **Color** drop-down list, select the tint of the tab bar's background.

6. From the **Highlight state color** drop-down list, select the color of a button's icon after it is tapped. All buttons on the tab bar use the same color in their highlight state (after being tapped).

7. Click **OK** to save your changes and return to the document.

> ℹ️ The tab bar and buttons do not change color in Design Mode; the colors apply when the document is displayed in MicroStrategy Mobile.

Now you can add buttons to the tab bar, as described in *Creating a button to link from a Mobile document, page 322* below. You can add as many buttons as necessary. If you define more than five buttons for an iPhone document or eight for an iPad document, a button labeled More is automatically added to the tab bar.

Creating a button to link from a Mobile document

Prerequisites

* If you are adding a button to a tab bar, you must have already created the tab bar. For steps, see *Creating a tab bar to hold buttons, page 319*.

* If you are using an icon on the button, you need to know the location of the images to be used. You can specify a single image, or you can specify an image to display before the button is tapped and a different image after it is tapped. If the button is part of a tab bar, the images should be monochromatic for the best display.

To add a button

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1. In MicroStrategy Web, open the document in Design Mode or Editable Mode.

2. You can add a stand-alone button or add a button to a tab bar:

   * To add a stand-alone button, from the **Insert** menu, point to **Button**, and then select a style. When you move the cursor to the Layout area, the pointer becomes crosshairs. Click in the desired location in the Layout area to add a button of the default size. If you click and drag in the Layout area, you can size the button.

- To add a button to a tab bar, click the Add Button icon on the tab bar. A new button is added to the tab bar, with the correct size.

3. If the selected button style displays a caption, double-click the caption text box. Type the caption to display, and press ENTER.

4. Right-click the button, and select **Properties and Formatting**. The Properties and Formatting dialog box opens.

5. From the left, select **Button**.

> You can change the button style, if the button is stand alone.

6. If the selected button style displays an icon or a custom image, specify the source of the images.

   - The normal state is displayed before the user taps it. Type the location and file name of the image to display in the normal state, in the **Normal state source** field.

   - The highlighted (or selected) state is displayed after the user taps it. Type the location and file name of the image to display in the highlighted state, in the **Highlight state source** field.

   > If the button is displayed in a tab bar, the images should be monochromatic.

7. If the button style is set to Caption only, you can determine whether the button is displayed as highlighted only:

   - To display the button as highlighted only after a user taps it, clear the **Show button in highlight state by default** check box.

   - To display the button as highlighted only, select the **Show button in highlight state by default** check box. When a user taps the button, the action is triggered, but the button does not change.

8. Click **OK** to save your changes and return to the document.

Next, you define the link or the Information Window for the button. For steps to define the link, see *Creating a link for a mobile document, page 295*. For steps to define an Information Window, see *Providing additional information to users: Information Windows, page 149*.

Formatting a stand-alone button

To format a stand-alone button, you can:

- Size the button

- Select the button's background color before and after it is tapped

- Select whether to display a border around the button when the document is viewed in MicroStrategy Web

- Format the font of the button's caption

- Select the button's caption font color before and after the button is tapped

This formatting applies to a stand-alone button, because a tab bar specifies the same formatting for all of its buttons. Steps to format the tab bar's colors and the caption's font are included in the procedure to create a tab bar; see *To add a tab bar for an iPad or iPhone document, page 321*. For a button with a custom style, you can size the button, but all other formatting comes from the image that you select.

Prerequisite

Before you can format a stand-alone button, you must have created the button. For steps, see *Creating a button to link from a Mobile document, page 322*.

To format a stand-alone button

1. In MicroStrategy Web, open the document in Design Mode or Editable Mode.

2. Right-click the button and select **Properties and Formatting**. The Properties and Formatting dialog box opens.

To size the button

3. From the left, select **Layout**.

4. In the Size area, type the **Width** and **Height** in the fields. The icon and caption, if both are used, are automatically resized to maintain their proportions in the button.

To select the button's colors

These options are unavailable for a button with a custom style, since the image is displayed as is.

5. From the left, select **Color and Lines**.

6. From the **Style** drop-down, select one of the following:

   • **Flat**

   • **Glossy**

7. From the **Normal state color** drop-down, select the button's color before it is tapped.

8. From the **Highlight state color** drop-down, select the button's color after it is tapped.

9. Determine whether the button has a border, by doing one of the following:

   • To hide borders, select **None**.

   • To display borders, select **All**. From the drop-down list, select the color of the borders around the button.

To format the caption's font

These options are unavailable for a button with a custom style, since the image is displayed as is.

10. From the left, select **Font**.

11. Select the **Font**, **Style**, and **Size** of the caption text.

12. From the **Normal state color** drop-down, select the caption's color before the button is tapped.

13. From the **Highlight state color** drop-down, select the caption's color after the button is tapped.

14. Click **OK** to save your changes.

Storing links on NFC tags on Android devices

You can store a link on Near Field Communications (NFC) tags to open the Home screen, Settings screen, Help screen, or the contents of the Shared Library folder on an Android device through MicroStrategy Mobile. An NFC tag is a small piece of hardware that broadcasts short-range wireless signals to compatible devices. When a Mobile user places her NFC capable Android device within the required range of the NFC tag, a link is broadcast to her device. This link opens MicroStrategy Mobile on the Android device and displays the specified screen.

A Mobile user can only view the projects that her device has been configured to access. When creating a link for NFC tags, ensure that your target audience is using a mobile configuration that provides access to the specified report, document, or folder.

To store a link on your NFC tags, use a third-party NFC programming app on an NFC capable Android device. The table below lists the types of links you can create on NFC tags, and the URL to use to create them. The URLs in the table open the default MicroStrategy Mobile application. If your organization

has a customized version of MicroStrategy Mobile, replace `mstr://` with your customized URL prefix.

Task	URL
Display the Home screen	`mstr://?evt=3995`
Display the Settings screen	`mstr://?evt=3999`
Display the Help screen	`mstr://?evt=3994`
Display the contents of the Shared Library folder	`mstr://?evt=3996`
Display the previously viewed screen (Back)	`mstr://?evt=3124`