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APPLICATION ONBOARDING

Primary Features for Portfolio Managers

For Portfolio Managers focused primarily on portfolio-level credit surveillance and risk monitoring, the following User Guides provide the basic foundation for the features you'll use the most:

- **Getting Started - Uploading Portfolios & Watch Lists:** Learn how to upload portfolios and/or watch lists for surveillance and monitoring
- **Grid View:** Analyze and track specific risk metrics associated with your portfolio or watch list in a simple grid view
- **Heatmap View:** Get a quick and customizable visual assessment of layered risk in your portfolio or watch list
- **Summary View:** Run a summary report on your portfolio or watch lists (or compare portfolio vs. index) in a variety of formats
- **Scatter Plot View:** Access an extremely efficient visual and/or filter-based representation of relative value analysis and targeted layered risk analysis
- **Settings:** Learn how to configure your workspace
- **Data Coverage Fact Sheet:** Expansive "data dictionary" outlining the application's full financial, economic, demographic, sector-specifc data, as well as security master. While this comprehensive fact sheet is not embedded in this Quick Start Guide, you can access it at: www.munirisk.com/application-user-guides.

Available Training Resources

User Guide Library We offer User Guides for every area of the application at www.munirisk.com/application-user-guides.

Quick Start Guides Quick Start Guides compile User Guides based on different types of workflow:

- Quick Start Guide for Portfolio Managers: Portfolio-level credit surveillance and risk monitoring
- Quick Start Guide for Analysts: Credit underwriting, report generation, watch lists
- Quick Start Guide for Traders: Analysis of bid lists/offer lists, market performance analysis, trade execution

Online Training Sessions We offer 30- to 45-minute small group training sessions via WebEx. Session structure varies based on user type (e.g., Portfolio Managers' training differs from Traders'). For more details and/or to book a training, send an email request to: support@munirisk.com.

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UPLOADING PORTFOLIOS & WATCH LISTS

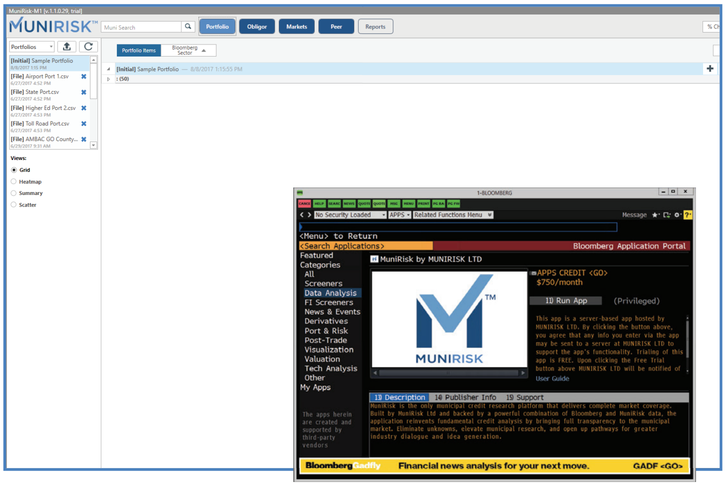
Run the Application

1. Run **APPS CREDIT <GO>** on your Bloomberg Terminal®.

2. Click Run App on the Storefront screen.

3. Once the application has loaded A, you can set up your workspace and begin credit analysis on a portfolio or a watch list.

A



Upload a Portfolio

Click [upload icon] to upload a portfolio or watch list.

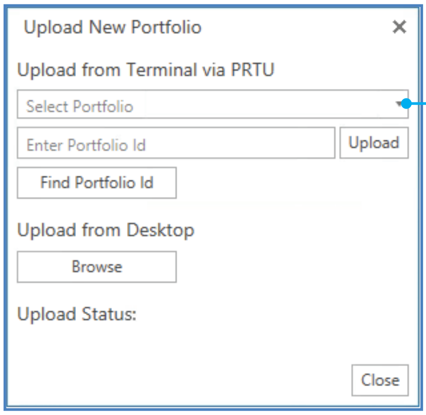
Import from PORT

Select a portfolio via PRTU or find / input a portfolio ID. C

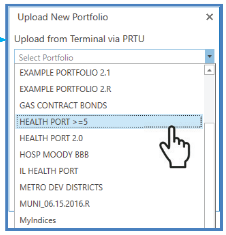
Upload from Desktop

You can also upload a security list (Excel or CSV file) from your desktop. Click Browse C and follow the prompts. D depicts how files should be formatted.

C



Dropdown menu for selecting a portfolio.



Run a Portfolio

Once uploaded, the portfolio appears timestamped in the Portfolio List. A Remove a portfolio by clicking X.

Click [refresh icon] to run a list and pull in data.

Use the **Grid View** to begin portfolio-level analysis, or try **Heatmap**, **Summary** or **Scatter Plot Views**.

D

	A	B	C
1	CUSIP	Weight	Position
2	717817QQ6	0.01421484	491700
3	167593RG9	0.0130151	450200
4	646039VP9	0.0104566	361700
5	117569GN	0.01060693	366900
6	41981TFR9	0.0019196	66400
7	389532FW	0.01322614	457500
8	493230MN	0.0101993	352800
9	678331DD8	0.01376096	476000
10	72202RAX	0.0017895	61900
11	75845HKN	0.01309893	453100
12	735000RD5	0.01073702	371400
13	79739GBY1	0.0104248	360600

> For a portfolio or watch list, Excel or CSV file must include CUSIPs or ISINs and positions and/or weights in the first three columns respectively.

Note: You do not need both weight and position to view your portfolio; however, you will require weight in order to compare two portfolios (see Summary View).

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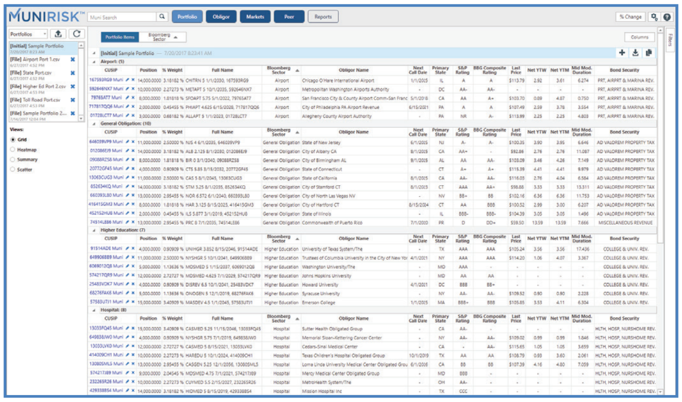
GETTING TO KNOW PORTFOLIO VIEW

Conduct portfolio-level credit surveillance, risk monitoring and analysis via four workspaces:

Grid View

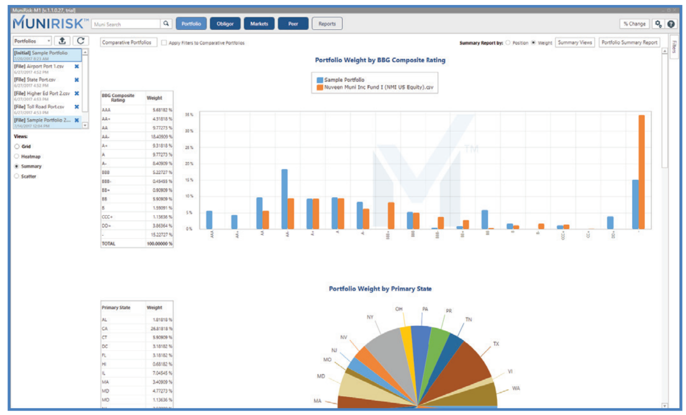
Analyze and track specific risk metrics associated with your portfolio or watch list in a simple grid view.



Jump to **Obligor View** for single security analysis by clicking a CUSIP. *For further details, see Portfolio View: Grid View User Guide.*

Summary View

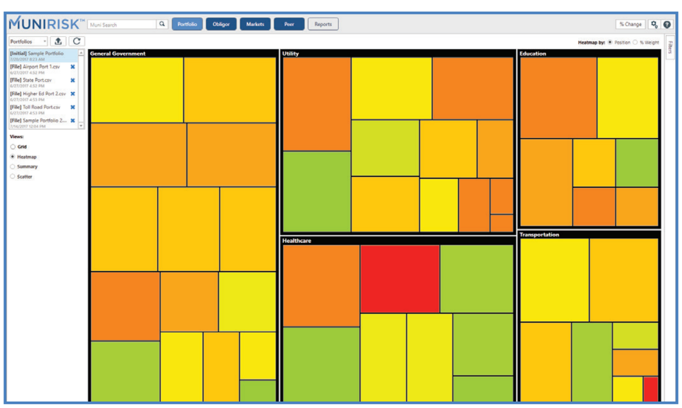
Run a summary report on your portfolio or watch lists (or compare portfolio vs. index) in a variety of formats.



For further details, see Portfolio View: Summary View User Guide.

Heatmap View

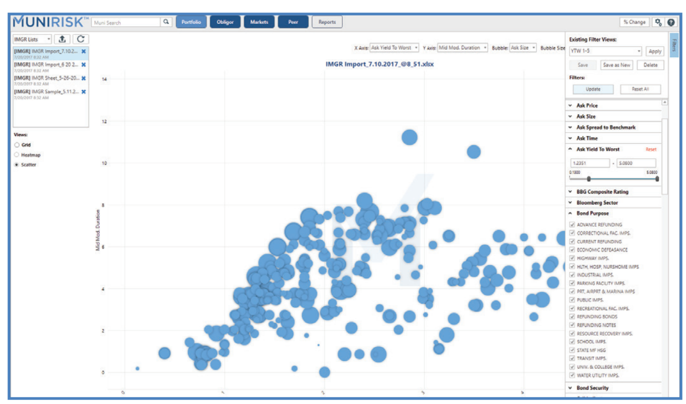
Get a quick and customizable visual assessment of layered risk.



Jump to **Obligor View** for single security analysis by clicking a square. *For further details, see Portfolio View: Heatmap View User Guide.*

Scatter Plot View

Access an extremely efficient visual and/or filter-based representation of relative value analysis and targeted layered risk analysis.



For further details, see Portfolio View: Scattler Plot User Guide.

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PURPOSE

Analyze and track specific risk metrics associated with your portfolio or watch list in a simple grid view. Accessible in Portfolio View.

HOW TO USE THIS FEATURE

- Add/remove columns by clicking the Columns button. A
- Customize your view by dragging/dropping column headers in your preferred order.
- Stratify your portfolio by grouping criteria. Drag/drop one or more column headers to Portfolio Items Bar. B
- Sort columns in ascending/descending order within groupings C by clicking on column headers.
- Click on a CUSIP to jump to the **Obligor View** and begin deep dive analysis. D
- Toggle to Heatmap, Summary or Scatter Plot Views for further portfolio-level analysis. E
- Click the Filters button to drill into credits with specific attributes F, e.g., set a minimum and maximum for e.g., Days Cash on Hand. See the Managing Filters User Guide for more details on filters.

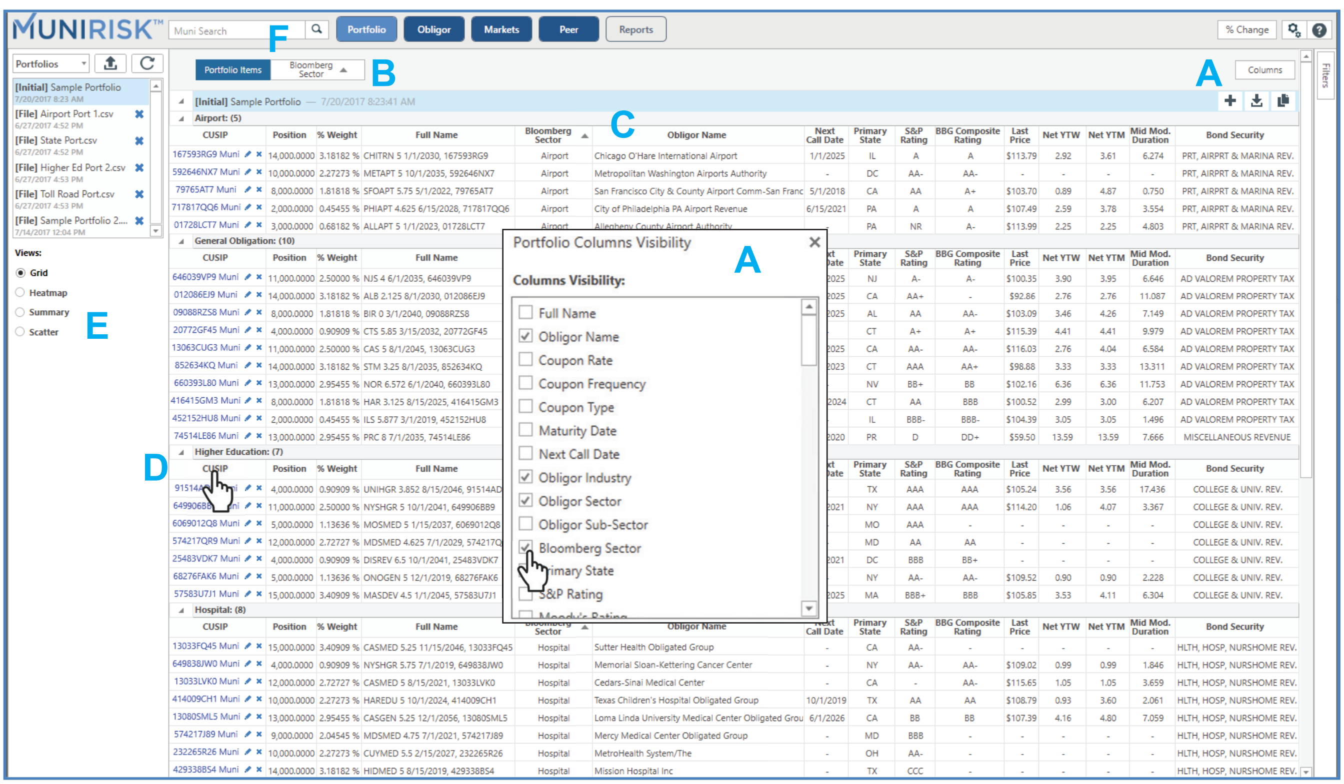
QUICK TIPS

Add a Security to the Grid
Click the plus button (not pictured), enter CUSIP and % weight. A

Search for a Single Security
Use the Search Bar on the top left to look up a single CUSIP as an alternative to uploading a portolio. F

View Security Master Details
The application offers multiple credit metrics to organize your view by. For full security master details, click the Columns button or see our Data Guide at www.munirisk.com/application-user-guides.

Another Way to Columns Menu
While under the Settings Menu, you'll see an alternate way to access columns visibility for the Grid View.



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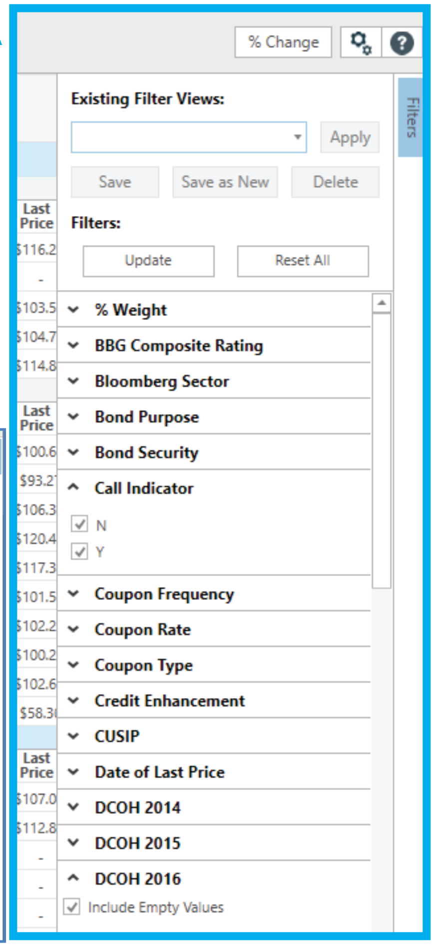
PURPOSE

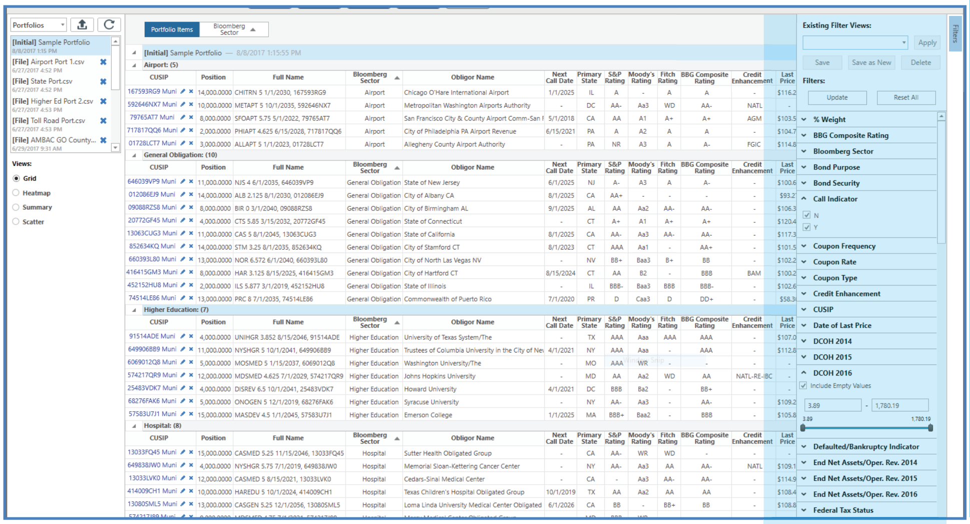
Use smart filters to make your analysis more efficient. The filtering options offer countless ways to slice-and-dice data. They can be found in both the Grid View and Scatter Plot View.

HOW TO USE THIS FEATURE

- In Grid View, click the pop-out Filters menu A to quickly narrow your view to securities that fit specific attributes.

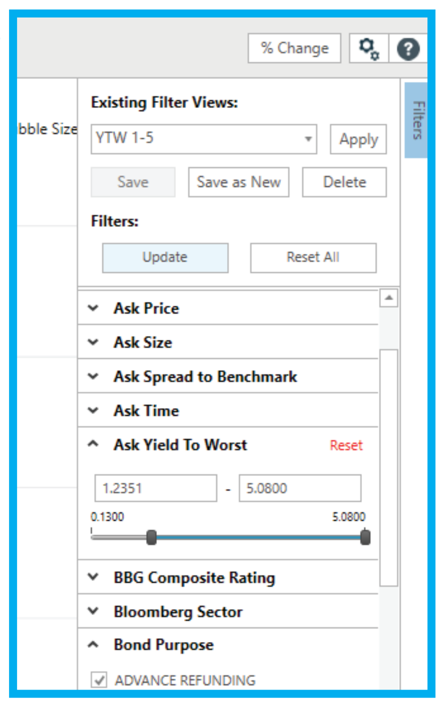
A





- In Scatter Plot View, click the pop-out Filters menu B to quickly isolate and identify attractive offerings or outliers for further research.

B



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PURPOSE

Run a summary report on your portfolio or watch lists (or compare portfolio vs. index) in a variety of formats, including tables, bar charts / histograms and pie charts.

HOW TO USE THIS FEATURE

- From the Grid or Heatmap View, select Summary A to populate the report of the portfolio or bulk security list you are currently running (depicted below by blue bars).
- Select multiple criteria to group by (either via the Summary Views shortcut button or the Settings Menu). B Both the table and the chart will update based on your selections.

Compare your portfolio to another in the form of exposure breakdowns.

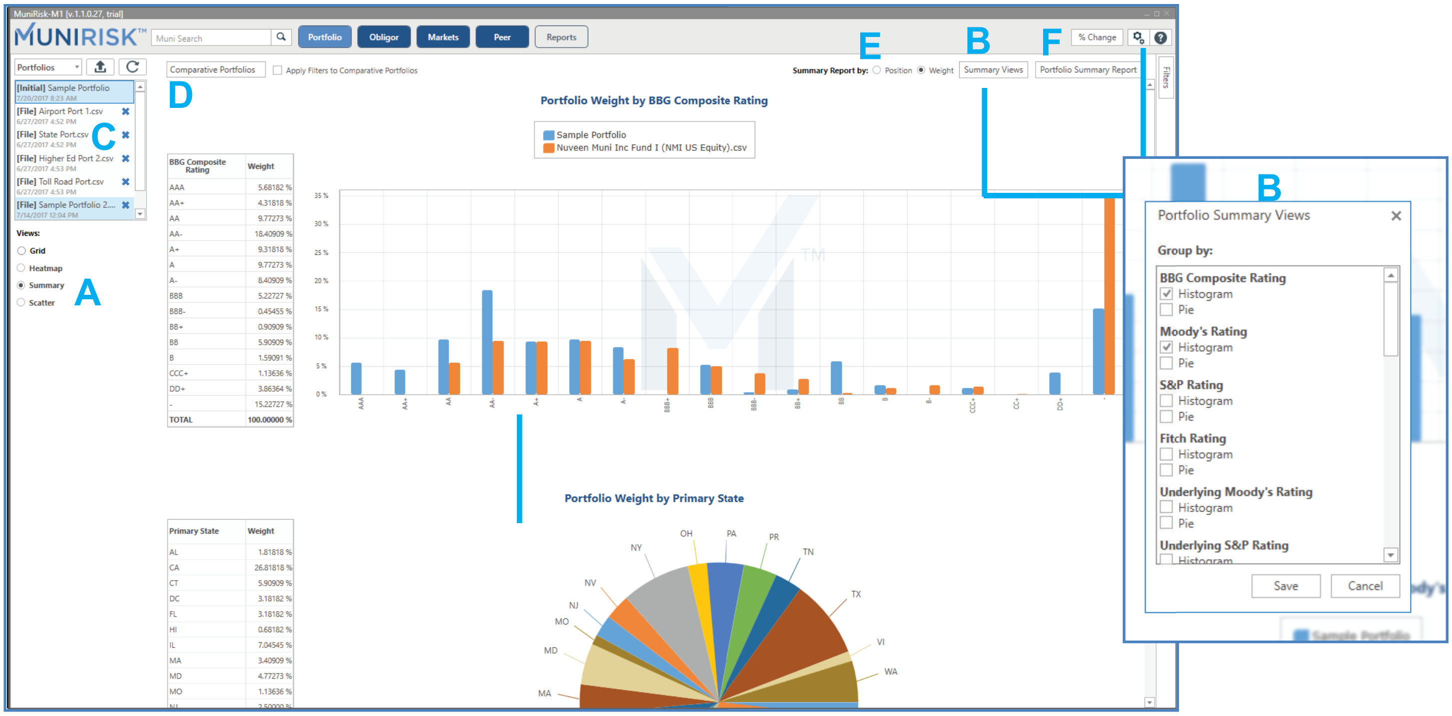
- Note: the comparative portfolio must already be saved to the Portfolios List C. You must run the comparative portolio first before it can appear in the chart.
- Click Comparative Portfolios D to select from your list of portfolios. The second portfolio will appear in the bar chart (depicted below by orange bars). Click Portfolio Summary Report F to download a PDF report.
- Toggle to Grid, Heatmap or Scatter Plot Views for further portfolio-level analysis. A

QUICK TIPS

Compare by Weight
Remember to set comparative portfolios by weight. E

Benchmark Your Portfolio
Upload an index or mutual fund to conduct a quick assessment of your portfolio or target portfolio.

Absolute Value or % Change
Throughout the application, you can elect to view data in absolute value terms or by percentage. Simply click the % Change button on the top right of the screen. Click again to switch back to Absolute Value. F



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PURPOSE

Select the Heatmap View to get a quick and customizable visual assessment of layered risk. A

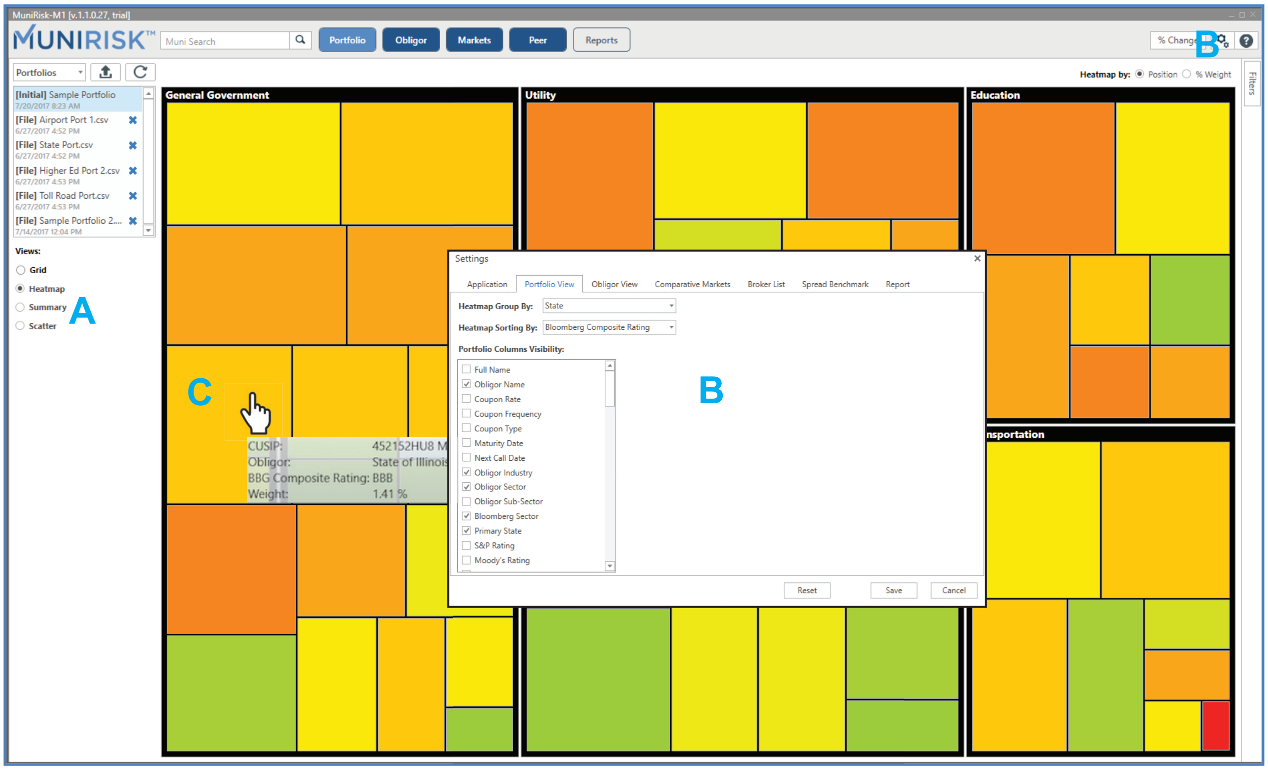
HOW TO USE THIS FEATURE

- Each square represents a position in your portfolio.
- Square size indicates % weight or position size of the portfolio.
- Color-coding functionality lets users visualize risk quickly. Color denotes level of risk: red=high, green=low.
- Customize your view using the Settings Menu. B Group securities by sector, rating, geographic location or other key risk buckets.
- Click on any square to jump to the **Obligor View** and begin deep dive credit analysis. C
- Toggle to Grid, Summary or Scatter Plot Views for further portfolio-level analysis. A

QUICK TIPS

Access Settings Menu to Customize the Heatmap
Click the gear button at the top right of the screen and select the Portfolio View tab. Here, you can select grouping and sorting for the Heatmap. Click OK to apply changes. B

Hover Over Squares for More Info
Mouse over any square for a brief overview of that security. C



USER GUIDE

Portfolio View: Scatter Plot View

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PURPOSE

Select Scatter Plot View to quickly isolate and identify attractive offerings. Conduct relative value analysis on offerings or pinpoint outliers in portfolio holdings to maximize returns. A

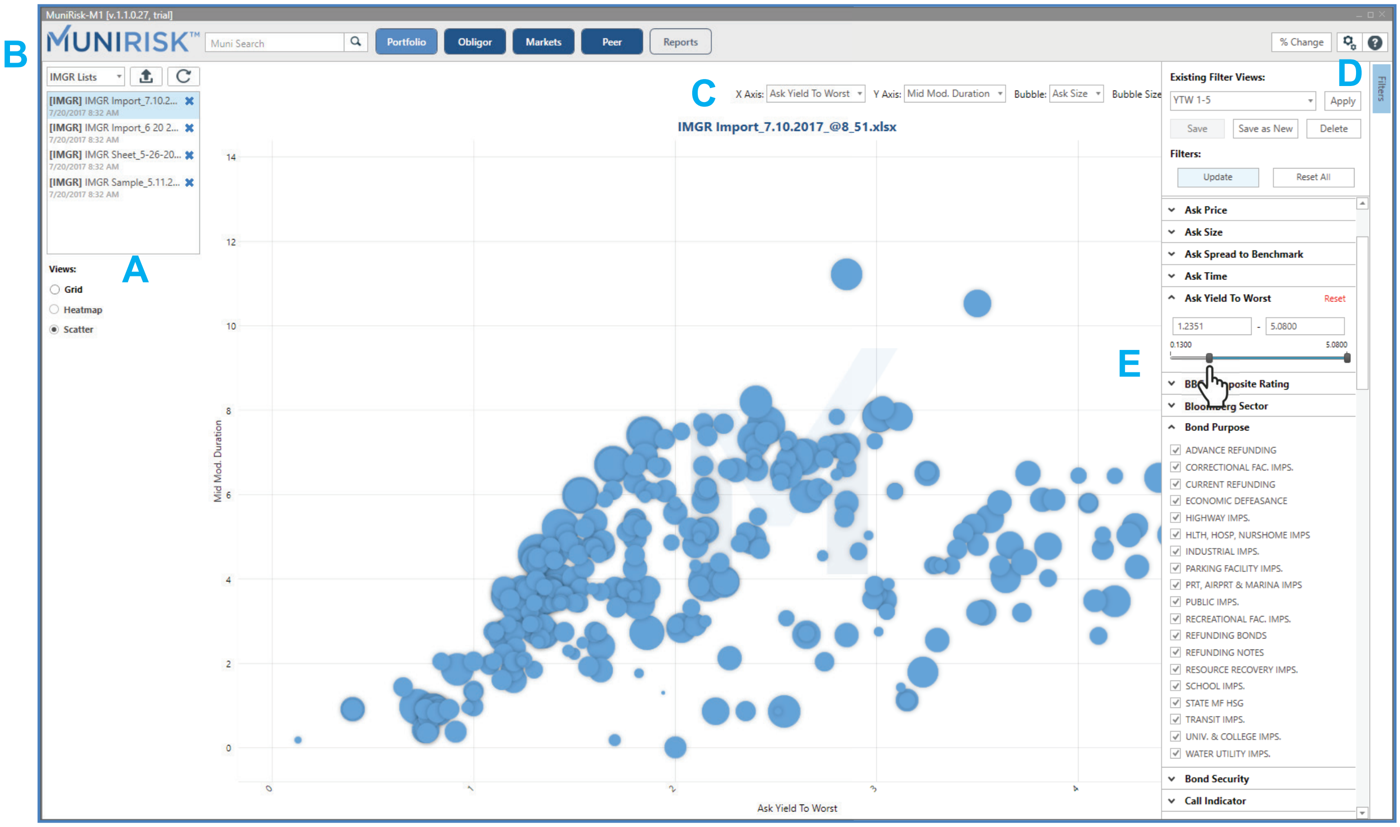
HOW TO USE THIS FEATURE

- Select Portfolio, RUNZ or IMGR Views from the dropdown. Run a list by clicking ⟳ . B
- Select Scatter Plot. A
- Set the X and Y axes. C
- Click the Filters button. D Using the pop-out menu, filter attributes, use the slider to set minimum and maximum for e.g., Ask Yield to Worst. E
- Set bubble size C and adjust your view to your liking using the smart filters. See separate User Guide for Managing Filters.
- Toggle to Grid, Heatmap or Summary Views for further portfolio-level analysis. A

QUICK TIPS

Filters
Smart filters D are also accessible in Grid View. Drill down to the attributes you care about most for extremely efficient analysis.

Assessing an Offer List
You can now upload bid or offering lists as an Excel file (export from IMGR or the RUNZ manager). Click the up-arrow to upload a list and follow the prompts. See the Getting Started - IMGR or Getting Started - RUNZ User Guides for more details.



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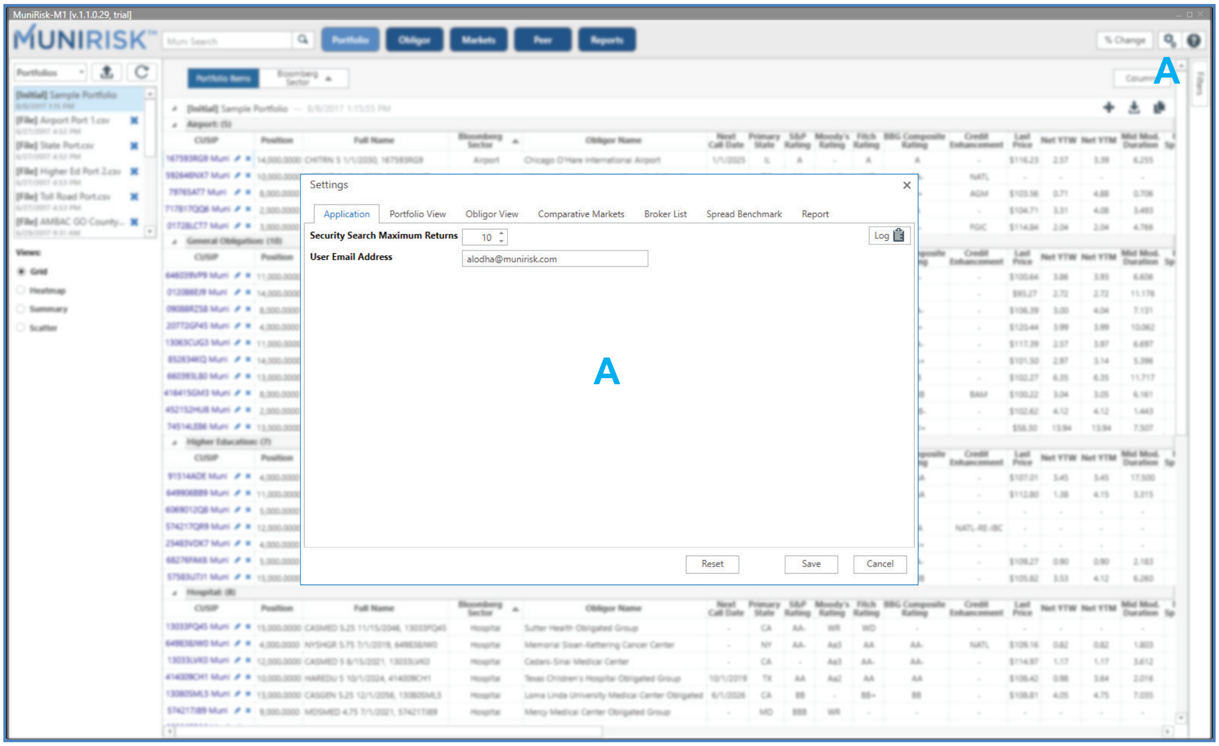
CONFIGURE YOUR WORKSPACE

Click the Settings button A within the application's fixed navigation bar to open the Settings window and make the workspace your own. Adjust your portfolio heatmap or summary views. Select your own benchmarks. Communicate quickly with key contacts by setting up shortcuts to the Terminal®.

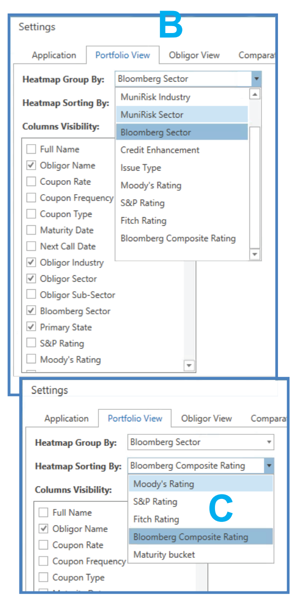


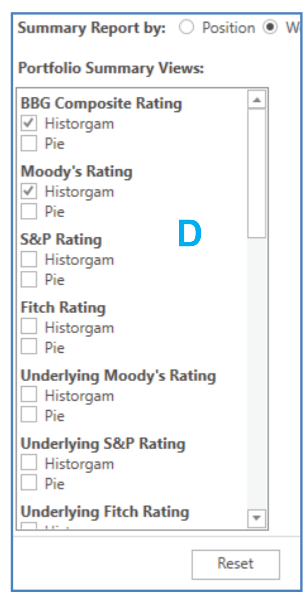
1. General Application Settings

- Search Returns: Set the number of search returns to a smart security search. Maximum is 100.
- Corporate Email Address: While this is optional, to expedite technical support, we recommend all users provide their primary email. *We respect your privacy. Please read our Privacy Policy at www.munirisk.com/privacy-policy/.*

2. Portfolio View Settings for Heatmap: Customize your Heatmap View to assess layered risk. Select the metric to group your portfolio by, B then select the metric you prefer to sort by. C (Note: use the Columns button as a shortcut to this menu.)

3. Portfolio View Settings for Summary: Choose the metrics you would like to view portfolios by and graph format. D (Note: use the Summary Views button as a shortcut to this menu.)





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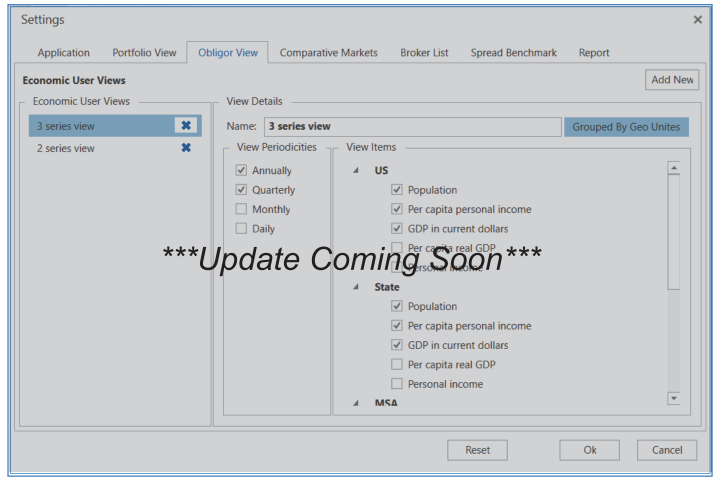
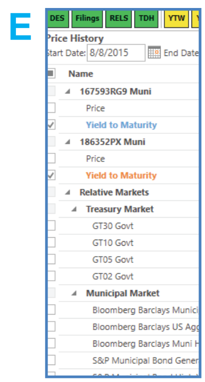
CONFIGURE YOUR WORKSPACE, CONT’D

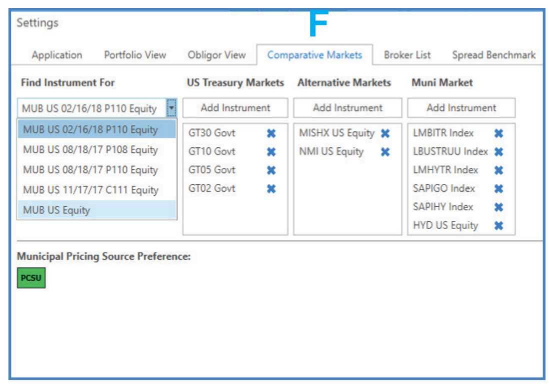
4. Obligor View: *Update coming soon.*



5. Comparative Markets: In **Markets View**, monitor relative market trends across treasuries, municipal indices, ETFs, as well as alternative markets. E

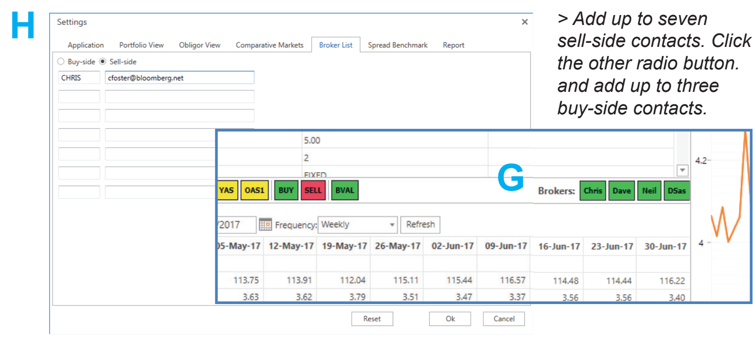
- Set the markets you would like to appear below the bond you are underwriting. F
- Key in a security’s identifier (CUSIP, Equity, Index, ETF, Treasury, etc.) and hit ENTER.
- Select the relevant security from the list of results. Click the Add Instrument button for the relevant section you want to add it to.
- Remove a market with the X. Click OK to save settings.





6. Broker List: Program contact Broker List buttons within **Markets View** to IB them. G

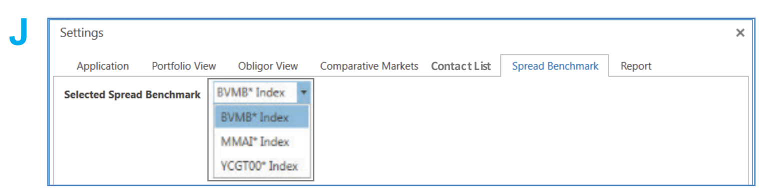
- Enter the button’s label in the first field (e.g., firm initials, contact’s initials) and the corresponding Bloomberg email in the second. H
- Click OK to save.



> Add up to seven sell-side contacts. Click the other radio button. and add up to three buy-side contacts.

7. Spread Benchmark: Under the **Markets View**, you can view a bond’s price, yield and spread (as well as trade activity). Based on your preference, you can set a selected Spread Benchmark J from the following options:

- BVMB* Index (BVAL Municipal AAA benchmark)
- MMAI Index (Municipal Markets Advisors)
- YCGT00* Index (U.S. Treasury Actives Curve)



8. Report *Coming Soon*