Power BI Desktop: New Report Authoring Features

# **Summary**

The purpose of this document is to serve as supporting reference to new report authoring and visualization features added to the Power BI Desktop application. Power BI Desktop is a free business intelligence design and development application containing rich capabilities in data connectivity, transformation, modeling, and report/dashboard development. Business intelligence artifacts created within Power BI Desktop such as datasets and reports can be published to the Power BI Service and consumed by Power BI users.

* New features and enhancements related to data connectivity, modeling, transformations, and general Power BI features are outside the scope of this document.
* This document will be updated with future Power BI report authoring updates (e.g. April 2017 Update) and may be enhanced with further details and examples.
  + As of 3/18/17, this document only identifies new report authoring features and improvements since the September 2015 update.

# **Monthly Update Links**

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| --- | --- | --- |
| [Sep-2015](#Sep2015) | [Oct-2015](#Oct2015) | [Nov-2015](#Nov2015) |
| [Dec-2015](#Dec2015) | [Jan-2016](#Jan2016) | [Feb-2016](#Feb2016) |
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# **Feature Updates**

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| --- | --- | --- | --- | --- |
| **#** | **Feature or Improvement** | **Detail** | **Image(s)** | **Update Month** |
| 1 | Report-Level filters | Could only filter report pages and individual visualizations before this update  Can now filter all visualizations in all report pages from single filter |  | Sep-2015 |
| 2 | Drill Up/Down for column and scatter charts | Three new controls   * Drill Up * Drill All to next level   + Will go to city level * Click to turn on Drill Down mode   + When enabled, can click the bar on the chart and drill into the specific items for that given selection   \*Can still cross filter; filter drill down chart by other chart selection |  | Sep-2015 |
| 3 | New Page Size and Page View options | * Page Size:   + 16:9, 4:3, Dynamic, Letter, Custom   + Could have different page sizes within report * Page View * Select Canvas of report page and then formatting option (paint brush under Visualizations)   \*Can expand/collapse panes and use scroll bars to view content with different page views |  | Sep-2015 |
| 4 | Inserting Shapes in the Report canvas | * Can insert and format shapes in the report * Full formatting options of shapes (fill, width, aspect ratio, title, background, title) |  | Sep-2015 |
| 5 | Search box for fields pane | * Can type in ‘customer’ and search will filter and highlight table and columns that match search condition |  | Sep-2015 |
| 6 | Expand/Collapse All in fields pane | * Right-click one of the tables can also Collapse All and Expand All to more easily navigate a data model with many tables and columns |  |  |
| 7 | Field well cardinality support | * Drag-replace for buckets with 1 item   + Chart with field X on legend, can be updated to use field Y without removing existing field X |  |  |
| 8 | Additional Data Label formatting options | * Display in Auto is default but can show values in millions, thousands, etc * Precision (decimal places) |  | Sep-2015 |
| 9 | X-Axis Label Direction | * Charts automatically adjust to (Horizontal/Diagonal) depending on width of members on visual |  | Sep-2015 |
| 10 | Logarithmic & Linear scales for Y Axis | * Formatting pane, Y axis section of formatting pane with chart selected |  | Sep-2015 |
| 11 | Display Text for hyperlinks in textboxes | * Don’t have to show the URL in the link; just show friendly text   + Use flyout menu when configure text box; insert link and type URL |  | Sep-2015 |
| 12 | Improvements to existing visualizations:   * Table, Matrix, Slicer, Scatter Chart, Single Cards, Combo Charts and Gauges | * Table and Matrix   + Resize columns * Tree maps support data labels * Slicers   + Ability to select all or unselect all via single click   + Additional formatting options for slicers (title, font, row, etc) * Scatter chart   + Bubbles color * Single Cards   + Formatting, labels, cat labels, word wrap, title * Combo Charts   + Performance improvement, will render faster * Gauge   + Customize min, max, and target values by using fields from pane |  | Sep-2015 |
| 13 | Color Saturation values in tooltips | * You now see the value of the saturation metric when you hover your mouse over the bar |  | Sep-2015 |
| 14 | Resize images and apply additional formatting options | * More options for formatting shapes and images * Title or not * Background colors and transparencies images |  | Sep-2015 |
| 15 | Custom Visualizations | * Use visuals from PBI Gallery in PBI Desktop * App.powerbi.com/visuals * Browse for .pbiviz file and visualization will have a new icon in visualizations pane in pbi desktop * All other visuals will respect filter selection just like standard provided visuals * Formatting options just like other PBI visuals |  | Oct-2015 |
| 16 | Insert Visual from Ribbon | * Inserts a blank visual, defaults to column chart |  | Oct-2015 |
| 17 | Default Sorting | * Visuals may automatically sort by axis values alphabetically * Descending default sort when choosing to sort by a metric in visuals |  | Oct-2015 |
| 18 | Funnel Chart Formatting | * Tooltips * Data label customizations   + Inside or outside bar |  | Oct-2015 |
| 19 | Slicer Formatting | * Can sort slicer items * Can change font size   + See formatting pane when slicer is selected   + Full control of header and rows |  | Oct-2015 |
| 20 | Gauge Formatting | * Now you can control values from fields (Sept Update) but also use formatting pane to apply hard coded values * Can also customize title and background for gauge |  | Oct-2015 |
| 21 | Data Label Layout | * Prevent labels from overlapping; improved positioning algorithms |  | Oct-2015 |
| 22 | KPI (Preview Feature) | * Exposing as early preview to get feedback only * If there are KPIs configured in SSAS Tabular, with live connection you can use the KPIs * If there were KPIs in Power Pivot for Excel you imported, you can use them too |  | Oct-2015 |
| 23 | Play Axis for Scatter Chart visualization | * Was popular in Power View for Excel; now available in PBI Desktop * Click ‘play’ to see animation render or pause at specific value |  | Nov-2015 |
| 24 | Horizontal Slicers | * Control orientation of slicer items (vert or horizontal) * Default is vertical * With slicer selected, go to formatting pane and change orientation |  | Nov-2015 |
| 25 | Slicer Selection Behavior | * Single Select vs Multi-Select * Select All   + With on, select all member will appear allowing you to quickly remove all filter selections * Single Select   + Can force selection to mutually exclusive or allow for selecting multiple members |  | Nov-2015 |
| 26 | Control Z-order | * Can move images and visuals forward or backward to control formatting when overlaying images |  | Nov-2015 |
| 27 | Background Colors for Slides | * Customize background for each report page * Available in formatting pane * Just click anywhere on canvas of page that’s blank (not a visual or slicer)   + Could have different report pages with different colors and sizes (earlier update) |  | Nov-2015 |
| 28 | Interaction between Visuals | * Can now control which visualizations are cross filtered by a given visualization * Select a given visualization   + Enable edit mode of visual interactions   + Click ‘None’ or allow filtering on icons for other visuals on report pages * Can also toggle between highlighting part of the whole when crossfiltered by other visual or just filter to that specific selection from other visual |  | Nov-2015 |
| 29 | Duplicate Pages | * Save time of building reports with similar layout; use page as template * Right click on the page tab at bottom of app, and click ‘Duplicate Page’ |  | Nov-2015 |
| 30 | KPIs and Images in Tables, Matrices and Cards | * Consume KPIs from SSAS Tabular or Power Pivot * Data Tools - Modeling * If you have URL for image in your data model, PBI Desktop will retrieve image |  | Nov-2015 |
| 31 | Improved tooltips in area and line charts | * Improved logic to avoid tooltips overlapping with data points |  | Nov-2015 |
| 32 | Change Text Size in Cards & Tables/Matrix | * Formatting pane * Available for Cards, Tables, and Matrix only currently |  | Nov-2015 |
| 33 | Tooltips and Labels in Field Well and Formatting | * Explain what the given option does to use; in-product documentation * Avoid user getting lost about how to use formatting option |  | Nov-2015 |
| 34 | View Categories with no data | * Visuals will display categories with no data   + If it’s been filtered out for example |  | Nov-2015 |
| 35 | Improved default sort behavior | * Sort ascending by attribute * Sort descending by measure |  | Nov-2015 |
| 36 | Axis Scale display units | * Y axis section, formatting pane   + Auto is default, millions, billions, etc |  | Nov-2015 |
| 37 | Visuals Refresh Optimizations with basic modeling operations | * Not required to refresh all visualizations for many changes that only impact one or a few visuals or part of model |  | Nov-2015 |
| 38 | Format data labels per category series | * With multiple metrics on a chart such as quantity and sales you can format each metric differently |  | Dec-2015 |
| 39 | Control decimal places in visuals | * Select a visual, go to formatting, change decimals for visual |  | Dec-2015 |
| 40 | Change text sizes in visuals | * Modify size of data labels now |  | Dec-2015 |
| 41 | Control layout and alignment of visuals | * Combination of four different capabilities:   + Alignment   + Distribution   + Size   + Position * Control+click to select the charts   + Use align, distribute, arrange options   + Multiple options for ensuring same space in ht/wt   With combination of all options can make all visuals nicely aligned   * Can also select a visual and from formatting General pane can specify specific properties |  | Dec-2015 |
| 42 | Set styles across visuals via Format Painter | * Select an existing visual that has desired formatting/style (text size, background, color, etc) * Click format painter under home tab (icon on ribbon will then become active) * Click a different visual to apply formatting   + All formatting that ‘makes sense’ will get copied into new visual. Not everything come over |  | Dec-2015 |
| 43 | Optimized ‘Home’ ribbon layout | * Some options have been collapsed under dropdowns or resizez * When you resize your PBI Desktop app the ribbon will resize for how much space is available |  | Dec-2015 |
| 44 | Visual cue for sort state in Table visuals | * When you click on metric or hover over the arrow will advise if sorting * Can single click to change sort of table |  | Dec-2015 |
| 45 | Smart tooltips for Area and Line charts on hover | * Hover over will display values from multiple metrics in tooltip * See exact values of categories |  | Dec-2015 |
| 46 | New Visual: Stacked Area Chart |  |  | Dec-2015 |
| 47 | Reference Lines for Cartesian Visual | * In formatting for chart you can set reference line and then apply detailed formatting to reference line including data label |  | Dec-2015 |
| 48 | Improved data labels for pie and scatter chart | * Optimized labels for these two visuals to make better use of space. Display as much as possible |  | Dec-2015 |
| 49 | R Visuals Integration (preview feature) | * Create visuals based on R Scripts in your reports * Specify R script to reference/evaluate * Combine analysis with other visuals (standard or custom) |  | Dec-2015 |
| 50 | Suggested Table to Table relationships | * When you create a visualization that has no relationship defined between tables involved in visualization * Visualization will error and with ‘fix this’ message will offer Relationship Detection * Could be important for large, complex models and users not familiar with all relationships |  | Dec-2015 |
| 51 | Add borders to a visual | * Select visual * Go to formatting pane, scroll to bottom * Turn on border   + Modify color |  | Jan-2016 |
| 52 | Background images for chart plot area and report pages | * Click page background of a report * Format pane * Click Add Image   + Browse for image   + Set transparency * Can also set a background image for the plot area of chart   + Formatting pane   + Plot area   + Add image   + Set transparency and how image fits |  | Jan-2016 |
| 53 | See Data Behind a Visual | * Can also export data to a CSV file * Select a chart * Select Focus mode icon * Click See Data icon in top right of focus mode * Can switch to vertical layout (data) * Use ellipsis to export data to CSV |  | Feb-2016 |
| 54 | Map Improvements | * Plot map with latitude and longitude only * Previously had to provide lat/long and text field (street name, city name, etc) |  | Feb-2016 |
| 55 | KPI Consumption GA | * Now GA   + Also support for navigation hierarchies SSAS MD models   + Can also see KPI Trend (not just status and value) |  | Feb-2016 |
| 56 | SSAS Exploration Mode | * Display folders in Fields pane |  | Feb-2016 |
| 57 | Contextual Ribbon layout | * Single Home tab is split between contextual report tools and Home   + If no visual is selected, only Home and Modeling tab visible   + If a visual (or multiple is selected,   Keeps Home Tab from being too complex; more focused experience |  | Feb-2016 |
| 55 | New KPI Visual | * Allow you to visualize KPI value and trend; relative to measure or value * KPI Visual will turn green/red/yellow based on value to target * Can also define min and desired target values |  | Feb-2016 |
| 56 | Open to Last viewed page when saved | * When you reopen a report, you will go to the page in report last viewed |  | Feb-2016 |
| 57 | “Edit Query” option in table context menu in fields pane | * Select a table in field pane, go straight to edit query for that table * Click ellipsis or right-click and click Edit Quty * Will bring up Query Editor menu   + Much easier to get to table at |  | Feb-2016 |
| 58 | Duplicate page from Ribbon | * Previously only had a right-click from bottom page tab |  | Feb-2016 |
| 59 | Publish reports to a Group Space in PBI Service | * First publish of a report provides options to choose destination workspace including group workspaces * Published report is immediately available to group workspace members |  | Mar-2016 |
| 60 | Do Not Summarize setting respected from SSAS MD models | * IsAggregatable property set to False in SSAS Multidimensional * PBI now respects this property * This feature only works with live connection setting, not with imported data |  | Mar-2016 |
| 61 | Formatting styles for Table, Matrix, and Multi-Row Card | * Rich formatting control over the grid lines (vertical and horizontal), the headers (column only for table), the values of the table including an alternate row format, and the totals row |  | Apr-2016 |
| 62 | Trend lines on visuals | * For chart visuals that so |  | Apr-2016 |
| 63 | Drill Action – See Records | * View data behind individual data label in chart * Can now control drilling from ribbon as opposed to only within the charts | With See Records Enabled you can single click a bar to drill into the values of that specific data label  You can also right-click a bar and use See Records button | Apr-2016 |
| 64 | Map auto-zoom during drill/filter | * Adding/removing data to map visual automatically adjusts zoom to show data selected |  | Apr-2016 |
| 65 | In-line hierarchy labels (preview) | * Parent data label is appended to child data label when drilled to lower level   \*Not applicable with natural hierarchy |  | Apr-2016 |
| 66 | Customizable tooltips | * Add measures to tooltips to provide more context of single data point * Can also apply an aggregation against the tooltip measure or a Quick Calc |  | May-2016 |
| 67 | Conditional formatting in tables | * Values bucket, dropdown of given measure * Can use values of table or specific number (hard coded #, not parameter or formula)   **Note:** Only available for Tables, not matrices as of May 2016 update |  | May-2016 |
| 68 | Publish to Pyramid Server | File – Publish - Pyramid |  | May-2016 |
| 69 | Scrolling loads more data in charts | More data is loaded to chart as you need it (via scrolling)  Happens automatically if more data than be formatted nicely on chart  Charts supported:   * Line, Bar, Column, Area   \*This works with categorical X axis (not continuous) |  | May-2016 |
| 70 | Keyboard nudging for visuals | Use arrow keys to move visual around the canvas  Use SHIFT + arrow to move in larger increments |  | May-2016 |
| 71 | Quick Calcs - % of grand total | * Dropdown of metric in values bucket * Show values % of grand total (only option)   + Don’t have % of parent, row, column * Can have same metric multiple times   \*area of focus in future |  | May-2016 |
| 72 | New Visual – Shape Map (preview) | * Applies different colors on regions of map based on values of metric   + Doesn’t require geographical data categories * Will be able to use with custom visuals in future month * Currently ship several standard * Note: Must enable the visual in Options of PBIX * Can apply a Legend attribute in addition to the Location attribute |  | June-2016 |
| 73 | Searchable Slicers | * Click ellipsis in top right of slicer * Type in value name, list will narrow down results and click * Similar to search in Excel field list – helpful with many distinct values in slicer |  | June-2016 |
| 74 | Configurable line chart labels | * Can show minimal labels (highs and lows only?) or many data lables |  | June-2016 |
| 75 | New Sign-in entry points | * makes it easier to sign in * top right corner   + can switch account   + configure your account settings |  | June-2016 |
| 76 | Predefined table styles | * tables only, not matrices * can still apply other formatting features |  | July-2016 |
| 77 | ShapeMap can use custom maps | * can now use custom maps such as floor plans or seating charts * Add Map; JSON file * Can see keys used by map for saturation * <https://powerbi.microsoft.com/en-us/documentation/powerbi-desktop-shape-map/> |  | July-2016 |
| 78 | Drill on line chart | * A hierarchy on X axis of line chart supports drilling |  | Aug-2016 |
| 79 | Continuous axis for Date axis | * See the continuous dates despite drilling through through date levels |  | Aug-2016 |
| 80 | GA for Inline Hierarchies | * Currently not an option to turn off * Active when drill down is not enabled (Drill All)   + Double arrow, not single arrow |  | Aug-2016 |
| 81 | Predefined Matrix styles | * Previously only had table styles * Available as Matrix style dropdown in formatting pane for matrix * Can apply additional custom formatting on top of pre-formatted |  | Aug-2016 |
| 82 | Reorder fields in charts and tooltips | * The bars in the visual now respect the order of the fields added in the field well | Applies to both measures and tooltips | Aug-2016 |
| 83 | Color formatting for KPI visual | * Previously only red, yellow, and green. Can now define which colors to use |  | Aug-2016 |
| 84 | Analytics Pane | * Will be home for all analytics features – will appear whenever you have a visual selected |  | Aug-2016 |
| 85 | Dynamic Reference Lines | * Can now have reference lines based on min, max, average, median, and percentile * Trend line moved over * Can create reference lines based on multiple measures but the measure must be on the given visual * Previously only constant line supported |  | Aug-2016 |
| 86 | ArcGIS Maps for Power BI (Preview) | Turn on Preview Feature:   * File * Options and Settings * Options * Preview Features * Check ArcGIS   Provide location attribute and metrics for size  Click In-Focus Edit Mode to view in full screen and apply more formatting such as background, symbol style, and the reference layers to cross-reference against standard datasets (e.g. income by county) |  | Sep-2016 |
| 87 | Mobile Report Layout (Preview) | * Enable in preview settings * From report page click ‘View’ tab click Change Layout |  | Sep-2016 |
| 88 | Updated Drill Behavior | * Option to drill to next level in hierarchy (double arrow on left) or to Expand all down one level in hierarchy   + Expand all maintains parent member lineage per second image |  | Sep-2016 |
| 89 | Forecast Feature Preview | * Enable preview feature * Create base line chart * Go Analytics Pane – Forecast * Configure forecast * Tooltips of upper and lower bound included in forecast line |  | Sep-2016 |
| 90 | Edit R script in external IDE | * With R visual selected, click Edit script in external R IDE from the R script editor window * Can configure with R IDE to use in Options – R Scripting |  | Sept-2016 |
| 91 | Date Slicer | * Have a calendar date picker UI when selecting either start and end dates   + Can also enter dates manually * Can use options in dropdown as well per image   + List is the list of date values in the column |  | Oct-2016 |
| 92 | Report Gridlines | * Snap to Grid (Preview)   + From View tab, choose to see gridlines and whether to snap objects or use free form |  | Oct-2016 |
| 93 | Data label improvements | * Can now control whether data labels are horizontal or vertical and there positioning for the chart |  | Oct-2016 |
| 94 | Map Formatting Options | * Use standard map (not filled map) * Bubbles option now available in formatting pane * Can also control the auto zoom feature of the map |  | Oct-2016 |
| 95 | Improved Date Axis Range Formatting | * With a date/time data type in the axis you can now select a start and end date in the formatting pane   + Can even specify the time portion of the datetime values for the filter |  | Oct-2016 |
| 96 | Grouping |  | Can create groups by selecting multiple members (via ctrl+) and right click or via Data / Drill in toolbar  Group can then be used in other reports  Can de-select include ‘other’ group and all items will be color coded as their own group  Can also create new groups via the field list: | Oct-2016 |
| 97 | Binning | * Analytics Pane   + For numeric column exposed, can group it into bins. (e.g. sales amounts into different bins)   + Could be good for prices, quantities, etcs |  | Oct-2016 |
| 98 | Top N Filter | * Analytics Pane   + Only show values that are in the top or bottom value of a measure   + Just change the filter type of the attribute on the chart to Top N and can choose what to base the Top filter on (measure doesn’t have to be on chart)   + Much easier than creating RankX functions |  | Oct-2016 |
| 99 | Include / Exclude Data Points | * Analytics Pane   + Previously, had to select specific values or exclude item (tedious)   + Right click on item and click to exclude or include   + Can also multi-select items and include or exclude that set of ites |  | Oct-2016 |
| 100 | R Powered Custom Visuals |  |  | Oct-2016 |
| 101 | Dropdown Slicer | * Built into the standard slicer. Can use the list (standard) or dropdown option |  | Nov-2016 |
| 102 | Hierarchical Axis | * When you turn the concatenate label off, you can see the parent grouping of each child |  | Nov-2016 |
| 103 | Column Formatting for Tables and Matrixes |  |  | Nov-2016 |
| 104 | Table and matrix conditional formatting | * Now extended to support matrix visualizations |  | Nov-2016 |
| 105 | Axis label and title color control | * Any chart that has axis can be controlled * Can control title and axis separately |  | Nov-2016 |
| 106 | Phone reports scrolling | * In mobile report view, can scroll to load more visuals into a mobile report view |  | Nov-2016 |
| 107 | Clustering | * Preview Release   + Help find groups of data points in your data * Can use the clusters generated as other visuals such as a slicer in image below | Can click the ellipsis in the visual to access ‘automatically find clusters’ | Nov-2016 |
| 108 | Forecasting in PBI Service | * Previously only available in desktop. Now available in PBI Service. | Same analytics pane in service, can add forecast to line chart | Nov-2016 |
| 109 | Groups on Ribbon | * A more intuitive option entry point than right-clicking |  | Nov-2016 |
| 110 | Table Header Word Wrap | * Option available under formatting pane, Column Headers |  | Jan-2017 |
| 111 | Table & Matrix Cond Formatting Enhancement | * Support for blank formatting in tables and matrix visuals * Just click dropdown of values for conditional formatting and choose to highlight blank values or not format them |  | Jan-2017 |
| 112 | New Aggregations for String and DateTime columns | * Can choose Earliest and Latest for a date data type * Can choose first and last for text/string |  | Jan-2017 |
| 113 | Phone Reports | * Now Generally Available |  | Jan-2017 |
| 114 | Word Wrap on Matrix Row Headers |  |  | Feb-2017 |
| 115 | X and Y axis font size control | * Supported for any axis on any chart type |  | Feb-2017 |
| 116 | Cartesian chart minimum category width | * A way of forcing the data labels to show on the visual by providing enough space for each item |  | Feb-2017 |
| 117 | Line chart thickness and join type control | * From formatting pane, access the Shapes card * Join type is for when the different lines intersect |  | Feb-2017 |
| 118 | New Quick Calcs:  % of Row Total  % of Column Total | * Available in matrix only, not table yet * Click the dropdown in the Values bucket per 2nd image image |  | Feb-2017 |
| 119 | Report Theming Preview | * Can create and import a JSON file that defines what colors to use in the report * Report themes only apply to charts that have the default theme applied to them – the themes do not currently override visuals in which a color has been specified (standard themes or custom) |  | Mar-2017 |
| 120 | New Matrix Visual Preview | * Performance Improvements * Drill down experience similar to charts with multiple * Cross Highlight from individual cell or any header to filter other visuals on report page * Control the indenting of the child levels of the hierarchy   + Can turn off stepped layout to show child attribute as separate column * Any of the headers or individual cells can be selected to cross highlight the other visuals on the report | Can have collapsed or expanded/detailed view of matrix hierarchy    Can use the right-click context | Mar-2017 |
| 121 | Textbox Font Color | * Same color formatting options available to visuals now available to text boxes |  | Mar-2017 |
| 122 | Numeric Range Slicer Preview | * With a column that’s a numeric data type. (column only currently) |  | Mar-2017 |
| 123 | Percent of Total Data Labels for Pie and Donut Charts | * More label options including combinations of category, data value, and % of total |  | Mar-2017 |
| 124 | Cross-Highlight using multiple series | * Can make selections on multiple columns (ctrl+click) within a visual and to crossfilter other visuals | Selection on US, H (7M) and Australia, M (1M) crossfilters other visuals | Mar-2017 |
| 125 | Clustering now GA | * “Automatically find clusters” option available in ellipsis of tables and scatter charts * Creates a field in the field list that can be used and managed |  | Mar-2017 |