

IBM Tivoli Netcool Performance Manager for Wireless 9.2.1

Understanding report types and usage



IBM Tivoli® Netcool® Performance Manager for Wireless 9.2.1:
Understanding report types and usage

Assumptions

- Know how to use IBM Tivoli Netcool Performance Manager for Wireless 9.2.1 software to perform the following tasks:
 - Log in
 - Navigate
- If you cannot perform these tasks, you can learn them by taking a Tivoli Netcool Performance Manager for Wireless user course

Assumptions

Before attempting this module, you should already know how to use IBM Tivoli Netcool Performance Manager for Wireless 9.2.1 software to perform the following tasks:

- Log in
- Navigate

If you cannot perform these tasks, you can learn them by taking a Tivoli Netcool Performance Manager for Wireless user course.

Objectives

- Upon completion of this module, you should be able to:
 - Describe the main report types in IBM Tivoli Netcool Performance Manager for Wireless
 - Define the component guidelines for creating various report types
 - Describe the field combinations that can be used in reports
 - Describe result output for various report types

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Outline

- Reports covered in this module:
- Comprehensive granular
- Summary rollups
- Stored summary
- Stored busy hour reports
- Special reports

In this module, you learn about several types of reports, including comprehensive granular, summary rollup, stored summary, stored busy hour, and special reports.

Comprehensive granular report

- Basic report
- Traffic and entity data
- Most detail (granularity)
- Data type: raw data
- Field types:
 - Peg Counts
 - Primitive Calc (calculations)
 - UDC (user-defined calculation)
 - Attribute (entity identifier)

Comprehensive granular report

The comprehensive granular report is the most basic report type. It contains traffic and entity data for instances of the focal entity type. The traffic data granularity can be selected from the most detailed data available, for example, at 15-minute intervals. Some data might be loaded only every 30 or 60 minutes. The report gets the data from the raw data tables. The raw data tables store data for as long as specified by the owners. The data is typically aggregated by entity attribute and then by time. The data might be aggregated by time first, if required.

Summary rollup report

- Traffic and entity data
- Less detail (granularity)
- Data type: raw data
- Field types:
 - Peg Counts
 - Primitive Calc (calculations)
 - UDC (user-defined calculation)
 - Attribute (entity identifier)

Summary rollup report

The summary rollup report takes the data from a comprehensive report type and aggregates the data into a less granular form. The report contains traffic and entity data for instances of the focal entity type. The traffic data granularity can be rolled up from the most detailed available, such as 15-minute data, to less granular levels such as hourly, daily, weekly, or monthly. The report gets the data from the raw data tables. With Tivoli Netcool Performance Manager for Wireless, you can roll up summary data from the focal entity type to one or more of its ancestor entities. For example, a report on cells can be constructed to give the 15-minute granular data for each cell. The report can roll up the daily aggregations to its parent entity, a Base Station Controller (BSC) and its parent entity, a Mobile Switching Center (MSC). The data and field types for a summary rollup report are the same as a comprehensive granular report.

Stored summary report

- Summary traffic, PEGs, PCalcs, UDCs, Stored busy hour traffic, and Entity data
- Less detail (granularity)
- Data type: stored data
- Field types:
 - Daily, Weekly, Monthly, Summary
 - Daily, Weekly, Monthly, Stored busy hour
 - PEGs
 - PCalcs
 - UDCs
 - Attribute (entity identifier)

Stored summary report

The stored summary report uses traffic data from the daily, weekly, or monthly summary tables for the entities. The summaries are determined overnight after all the traffic data for the day has been received. This report type can only be run on the data from the previous day or older data. However, the stored summary data is typically kept for a longer duration than the raw data.

The report contains summary traffic and entity data for instances of the focal entity type. Like the basic comprehensive report type, the summary data can be rolled up by time or entity. Remember, the minimum granularity for stored summary data is the aggregation for an entire day. The data and field types for a summary rollup report are similar to a comprehensive granular report, but these types can also include stored busy hour fields. Although stored busy hour traffic fields can be selected, they are not typically used in a summary report. You can select an attribute field type to identify an entity to associate with the traffic data.

Stored busy hour report

- Stored busy hour traffic, summary traffic, and entity data
- Less detail (granularity)
- Data type: stored data
- Field types:
 - Daily, Weekly, Monthly, Stored busy hour
 - Daily, Weekly, Monthly, Summary
 - Attribute (entity identifier)

Stored busy hour report

The stored busy hour report uses traffic data from the daily, weekly, or monthly stored busy hour tables for the entities. The busy hours are determined overnight after all of the traffic data for the day has been received. This report type can only be run on the data from the previous day or older data. However, the stored busy hour data is typically kept for a longer duration than the raw data.

The report contains traffic and entity data for instances of the focal entity type. The traffic data granularity is aggregated from the most detailed available, such as 15-minute, to hourly for the determined busy hour. The report gets the data from the stored busy hour tables. Even if the hourly option is not selected in the Group By feature, the busy hour is indicated in the report output.

Although summary traffic fields can be selected, they are not typically used in a stored busy hour report. You cannot use a raw data field such as peg count or UDC in a stored busy hour report. You can select an Attribute field type to identify an entity to associate with the traffic data.

Special reports

- Extended function
 - Busy hour
 - Group by (rollup)
 - Ranking
- Trending: Forecasting

Special reports

There are several special report types that are discussed in the next few slides. They include the Extended Functions of Busy hour, Group by (also called roll up), and Ranking. Trending or Forecasting reports are also special reports.

Extended function: Busy hour

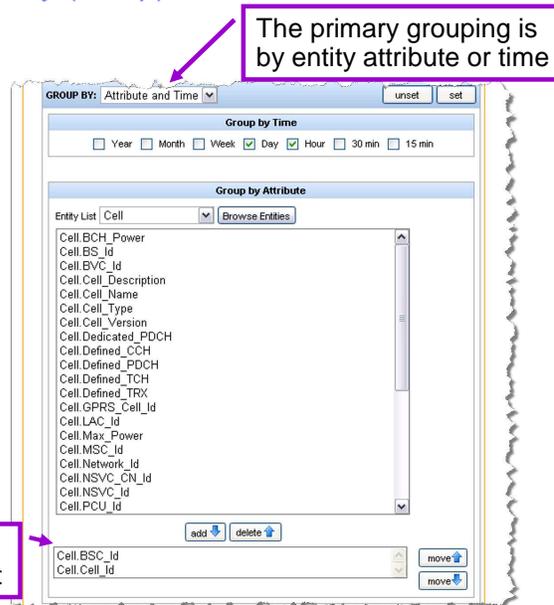
- Nonstored busy hour
- Calculate the busy hour when report is run
- Data type: raw data
- Field types:
 - Peg Counts
 - Primitive Calc (calculations)
 - UDC (user-defined calculation)
 - Attribute (entity identifier)

Extended function: Busy hour

Unlike the stored busy hour report archetype, this report uses nonstored busy hours. The data is pulled from the raw data tables instead of stored busy hour tables. The field types are the same as the types in a comprehensive report. Because the busy hour determiner is part of the report definition, the calculations occur when the report is run. This type of report consumes more processing cycles than any other report type. Any of the raw traffic fields can be used for the busy hour determiner, including primitive calculations and user-defined calculations.

Extended function: Group by (rollup)

- Not an archetype
- Feature of report results
- Aggregation versus total



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Extended function: Group by (rollup)

In each report definition, you can specify the Group By parameters. The default Group By values are the focal entity identifier (id) and day. You can then view the data rolled up to each of the successive groups by parameters. The rolled up data is aggregated according to the traffic or the aggregation type of the entity data. The data is not always summed to make a total. If the aggregation type is maximum, the rollup displays the maximum for that field for the time duration and entity specified. You can read the aggregation type for each field in the field selection step of the report definition. You can set the group by parameters in the Optional: Extended Function portion of the report definition.

Extended function: Ranking

RANKING: [unset] [set]
TOP [v] from 1 to [] Cell.Nokia.Service.int_ho_target_fail [v] by Nothing [v] Group by Week [v]

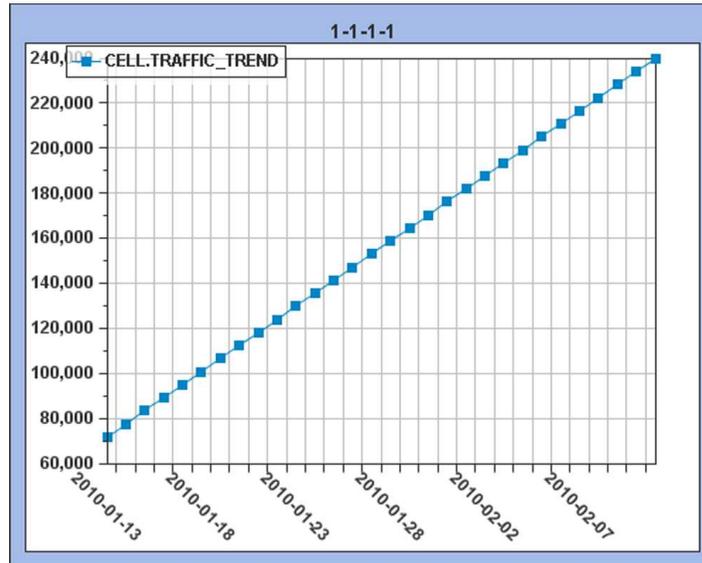
- Add to any preceding report archetype
- Top or bottom values
- From and to
- Selected field
- Group by combinations of attributes and time

Extended function: Ranking

Any preceding report archetype can be made into a ranking report. The data generated is further filtered using the traffic field selected. You must select the ranking field as one of the report fields. You can create a report to identify the number of entities having the largest or smallest value of the selected field. You can also group by each entity and determine the time periods for each entity that contain the largest or smallest value of the selected entity. You can use this feature with a comprehensive, busy hour, or summary report.

Trending: Forecasting

- Forecast
 - Trend
 - Project time
- Trending UDC
- Sample trend graph



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Trending: Forecasting

You can use trending reports to forecast the value of a data metric in the future based upon a historical set of busy hour values. Stored busy hour data is used because complete performance data (raw data) might be kept for only a few months. The system uses historical busy hour values to create a regression line. Using this regression line, future values can be forecasted.

You can perform two kinds of trending analysis.

You can predict what value a data metric might have at a future time using a regression line. This uses a function called trend.

You can project when a data metric might reach a particular limit or threshold. This uses a function called projectTime.

Depending on the data being analyzed, you choose for the software to use linear, logarithmic, or exponential regression for the calculation. The creation of a forecasting UDC is required for this type of report.

The graph displayed in the image is a sample graph of a trend function using linear regression.

Trending: Projection

Sample projection table

The screenshot shows a 'Table View' interface. On the left, there are settings for 'Show all key columns' and a search filter for 'Selected Entities: Search: 6/90'. The main table has three columns: 'CELL.CELL_ID', 'T_DAY', and 'PROJECT_TIME_SUCC_HO'. A purple box highlights the 'PROJECT_TIME_SUCC_HO' column with an arrow pointing to it and the text 'The number of days predicted until reaching the threshold value'.

CELL.CELL_ID	T_DAY	PROJECT_TIME_SUCC_HO
1-1-1-2	12/1/09	4.156
1-1-2-1	12/1/09	47.348
1-2-1-2	12/1/09	30.5
2-3-3-2	12/1/09	143.895
2-4-2-2	12/1/09	72.764
2-4-2-3	12/1/09	28.745

Trending: Projection

When a Project time forecasting UDC is used, the report results return the number of days until the trended field reaches a threshold value. The image is a sample table showing the number of days predicted until the data might reach the threshold value in the forecasting UDC.

Summary

- You should now be able to:
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Summary

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