

FlexNet Report Designer 15.5 Guide

Cognos Package 15.5 R2

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Legal Information

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Introduction to FlexNet Report Designer (Cognos) Reporting

FlexNet Report Designer is built on the Cognos BI reporting engine, and enables you to gather, collate and report on all of your FlexNet licensing activity. Report Designer includes complete tools for managing, creating, and editing both simple and complex reports.

Report Designer Package 15.5 R2 (FlexNetManagerSuite.zip) provides predefined reports and the reporting model on which FlexNet Report Designer reporting is based. This package also provides the reports that are used as widgets in the Operational Dashboard.

This document provides information about the data model and about the available reports provided with the Report Designer package.

- [Report Designer Reports for Package 15.5 R2](#)—Describes the predefined reports that are available with Package 15.5 R2 when using the Report Designer tab in the FlexNet Manager for Engineering Applications interface.
- [Report Designer Data Model for Package 15.5 R2](#)—Provides detailed information about the data model for Package 15.5 R2.

Cognos Roles

By default, your enterprise is licensed for a limited number of Cognos users, each of whom has permissions based upon the Cognos roles to which they are assigned. To learn more about assigning Cognos roles and about the permissions each role provides, see the topic, “Cognos Roles”, in the FlexNet Manager for Engineering Applications 15.5 Help Library (online help, installed with FlexNet Manager for Engineering Applications) or the FlexNet Manager for Engineering Applications 15.5 User Guide (PDF).

Report Designer Reports for Package 15.5 R2

You access Report Designer reports using the Report Designer tab beneath the Reports tab in the FlexNet Manager for Engineering Applications interface. You can also access the mini-reports that are used as widgets in the Operational Dashboard. (See the section, [Operational Dashboard Widgets](#), for more information.)

- [Feature-Based Reports](#)
- [Product-Based Reports](#)
- [Tier-Based Usage Reports](#)
- [Token-Based Usage Reporting](#)
- [Operational Dashboard Widgets](#)

Accessing Report Designer Reports



Task: *To access the predefined reports for Package 15.5 R2:*

1. In the FlexNet Manager for Engineering Applications user interface, click the **Report Designer** tab, then click the **Custom Reporting** link on the left side of the screen.
2. In the Cognos Connection pane, click the **FlexNet Manager Suite** folder to open it.
3. On the next screen, click the **FlexNet Manager for Engineering Applications Reports** folder.
4. On the next screen, click one of the following:
 - To access feature-based reports, click the **Historical Feature Reports** link.
 - To access product-based reports, click the **Product Reports** link.
 - To access tier-based usage reports, click the **Tier Reports** link.
 - To access token-based usage reports, click the **Token-Capability Reports** link.

- To access Operational Dashboard widgets, click the **Dashboard Widgets** link, then click the **Real Time Reports** link.
5. Click a report name to move to the report's prompt screen.



Note • These predefined reports are available only if you have Report Designer Package 15.5 R2 installed.

Feature-Based Reports

The following predefined feature-based reports are available for Package 15.5 R2:

- [Feature Chargeback Report](#)
- [Feature Usage by Organization Table Report](#)
- [Feature Usage Table Report](#)
- [Feature Peak Usage Trend Report](#)
- [Organization Total Usage Chart Report](#)
- [Peak Usage by Organization Over Time Report](#)
- [Peak Usage by Server Over Time Report](#)
- [Peak Borrowed Licenses by Feature](#)
- [Peak Borrowed Licenses vs. Total Peak Licenses](#)
- [Users with Borrowed Licenses List](#)

To run a basic version of a report, click the report name. You will be shown the parameters you can set via drop-down menus, as well as the option to view a description of the report including explanations of the parameters. For all of the reports, you can choose to run the report using hourly, daily, or monthly data. Your choice will depend on whether you want more data granularity (hourly) or better report performance (monthly).

You can perform a number of other actions on each report, which are shown to the right of the report name. You can select the following:

- Set properties
- Run with options
- Open with Report Studio
- Create a report view of this report
- Schedule

Feature Chargeback Report

The Feature Chargeback report displays a summary of feature usage by organizational unit for a specified time period, along with the organizational unit's total cost of using each feature and the organizational unit's overall total cost for the time period. The report also provides a summary of the total hours used for all specified features and the total cost for all specified features during the time period.

This report requires you to specify an organizational structure. Within the report, you can drill through the hierarchical levels in your organizational structure, eventually arriving at per-user data.

Organization Unit	Feature	COST_FACTOR	Total Used Time (Hours)	Total Cost
Department A	sx_cdslink	250	434.8	108,693.12
	sx_wva	43	635.5	27,325.38
Department A			1,070.2	136,018.50
Department B	sx_cdslink	250	18.1	4,517.29
	sx_wva	43	1,897.4	81,589.18
Department B			1,915.5	86,106.47
Department C	sx_cdslink	250	73.1	18,266.32
	sx_wva	43	3,184.0	136,911.68
Department C			3,257.1	155,178.00
Department D	sx_cdslink	250	394.0	98,503.96
	sx_wva	43	509.0	21,887.93
Department D			903.0	120,391.89
Department E	sx_cdslink	250	0.0	11.87
	sx_wva	43	0.0	2.04
Department E			0.1	13.92
Summary			7,145.9	497,708.78

Figure 2-1: Portion of a Feature Chargeback report.

Feature Usage by Organization Table Report

This report displays the total used time for selected features for users in an organization, and allows for additional filtering by organizational units.

Feature Usage by Organization Table

Start Date: Jun 1, 2007 12:00:00 AM
 End Date: Jul 31, 2007 12:00:00 AM
 Vendor: magma
 Features: BLAST_BUILDER, BLAST_CREATE, BLAST_FUSION_APX, BLAST_PLAN, BLAST_PLANPRO, BLAST_PLANSVP, BLAST_POWER, BLAST_RAIL, BLAST_SI, BLAST_SPEED, BLAST_VIEW, BLAST_WRAP, QUARTZ_TIME

Feature Name	Year	Month	Org Node Name L2	Org Node Name L3	Org Node Name L4	User Name	Total Used Time (hours)	First Name	Last Name	E-mail	Phone Number
BLAST_BUILDER	2007	June	Shanghai	B11	C113	robc	7.22	Rob	Cee	robc@server.com	555-1111
				B12	N/A	sophias	1.64	Sophia	See	sophias@server.com	555-1112
				B13	N/A	alexp	7.74	Alex	Pi	alexp@server.com	555-1113
		July	Shanghai	B12	N/A	sophias	7.53	Sophia	See	sophias@server.com	555-1112
				B13	N/A	alexp	29.83	Alex	Pi	alexp@server.com	555-1113
			Washington DC	B21	B22	lorie	0.03	Lori	Ee	lorie@server.com	555-1116
						tomv	0.69	Tommy	Vee	tomv@server.com	555-1115
BLAST_CREATE	2007	June	Shanghai	B11	C113	robc	0.23	Rob	Cee	robc@server.com	555-1111
				B12	N/A	sophias	0.33	Sophia	See	sophias@server.com	555-1112
				B13	N/A	alexp	8.97	Alex	Pi	alexp@server.com	555-1113
		July	Shanghai	B12	N/A	sophias	0.07	Sophia	See	sophias@server.com	555-1112
				B13	N/A	alexp	13.22	Alex	Pi	alexp@server.com	555-1113
			Washington DC	B21	B22	lorie	0.03	Lori	Ee	lorie@server.com	555-1116
BLAST_FUSION_APX	2007	June	Shanghai	B11	C113	robc	0.01	Rob	Cee	robc@server.com	555-1111
				B13	N/A	alexp	9.27	Alex	Pi	alexp@server.com	555-1113
		July	Shanghai	B12	N/A	sophias	0.46	Sophia	See	sophias@server.com	555-1112
				B13	N/A	alexp	20.51	Alex	Pi	alexp@server.com	555-1113
			Washington DC	B21	B22	lorie	10.15	Lori	Ee	lorie@server.com	555-1116
BLAST_PLAN	2007	June	Shanghai	B13	N/A	alexp	0.16	Alex	Pi	alexp@server.com	555-1113
		July	Shanghai	B13	N/A	alexp	0.14	Alex	Pi	alexp@server.com	555-1113

[Filters\(show/hide\)](#)

Level 2 Org Node:

Level 3 Org Node:

Level 4 Org Node:

Figure 2-2: Feature Usage by Organization Table report

Feature Usage Table Report

This report displays the total used time for selected features, listed by license server. Optionally, peak usage may also be displayed *if* a license server-based organization has been created (prior to aggregation).

Feature Usage Table

Start Date: June 1, 2007
 End Date: July 31, 2007
 Vendor: magma
 Features: BLAST_BUILDER, BLAST_CREATE, BLAST_FUSION_APX, BLAST_PLAN, BLAST_PLANPRO, BLAST_PLANSVP, BLAST_POWER, BLAST_SPEED, BLAST_VIEW

Feature Name	Year	Month	License Server Name	Availability Max Count	Peak Licenses	Available Time (hours)	Total Time Used (hours)	Percentage of Hours Used
BLAST_BUILDER	2007	June	ServerORD	2	2	192	16.61	8.65%
		June				192	16.61	8.65%
		July	ServerORD	2	2	336	38.08	11.33%
		July				336	38.08	11.33%
		2007					528	54.69
BLAST_BUILDER						528	54.69	10.36%
BLAST_CREATE	2007	June	ServerORD	2	2	192	9.54	4.97%
		June				192	9.54	4.97%
		July	ServerORD	2	2	336	13.32	3.96%
		July				336	13.32	3.96%
		2007					528	22.85
BLAST_CREATE						528	22.85	4.33%
BLAST_FUSION_APX	2007	June	ServerORD	2	2	192	9.29	4.84%
		June				192	9.29	4.84%
		July	ServerORD	2	2	336	31.11	9.26%
		July				336	31.11	9.26%
		2007					528	40.40
BLAST_FUSION_APX						528	40.40	7.65%
BLAST_PLAN	2007	June	ServerORD	2	2	192	0.16	0.08%
		June				192	0.16	0.08%
		July	ServerORD	2	1	336	0.17	0.05%
		July				336	0.17	0.05%
		2007					528	0.33
BLAST_PLAN						528	0.33	0.06%
BLAST_PLANPRO	2007	June	ServerORD	2	2	192	0.12	0.06%
		June				192	0.12	0.06%
		July	ServerORD	2	1	336	0.17	0.05%
		July				336	0.17	0.05%
		2007					528	0.29
BLAST_PLANPRO						528	0.29	0.05%

Figure 2-3: Feature Usage Table report

Feature Peak Usage Trend Report

The Feature Peak Usage report shows the peak usage for selected features. It displays a column graph showing peak usage for each day, with a trend line that extends to a date beyond the last date on which usage was reported. This report can help you predict how many licenses your enterprise needs to purchase for a particular feature.

Organization Total Usage Chart Report

This report displays a chart depicting the total used time for selected features by portions of the organization. Drill-through functionality in the report enables you to look into lower levels of the organization.

Organization Total Usage Chart

Start Date: February 1, 2007
 End Date: July 31, 2007
 Vendor: magma
 Features: BLAST_BUILDER, BLAST_CREATE, BLAST_FUSION_APX, BLAST_PLAN, BLAST_PLANPRO, BLAST_PLANSVP, BLAST_POWER, BLAST_SPEED, BLAST_VIEW

Org Node Name L2	Feature Name	Total Used Time (hours)
Shanghai	BLAST_BUILDER	53.97
	BLAST_CREATE	22.83
	BLAST_FUSION_APX	30.25
	BLAST_PLAN	0.30
	BLAST_PLANPRO	0.26
	BLAST_PLANSVP	0.26
	BLAST_POWER	0.03
	BLAST_RAIL	1.57
	BLAST_SI	2.76
	BLAST_SPEED	44.32
	BLAST_VIEW	88.18
Shanghai		244.72
Washington DC	BLAST_BUILDER	0.72
	BLAST_CREATE	0.03
	BLAST_FUSION_APX	10.15
	BLAST_PLAN	0.03
	BLAST_PLANPRO	0.03
	BLAST_PLANSVP	0.03
	BLAST_RAIL	0.02
	BLAST_SI	0.02
	BLAST_SPEED	6.15
	BLAST_VIEW	11.15
	Washington DC	
Summary		273.06

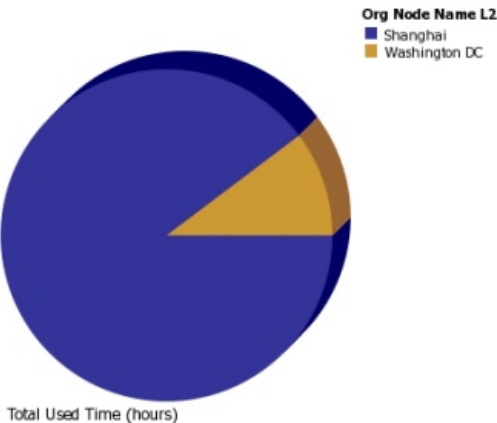


Figure 2-4: Organization Total Usage Chart report

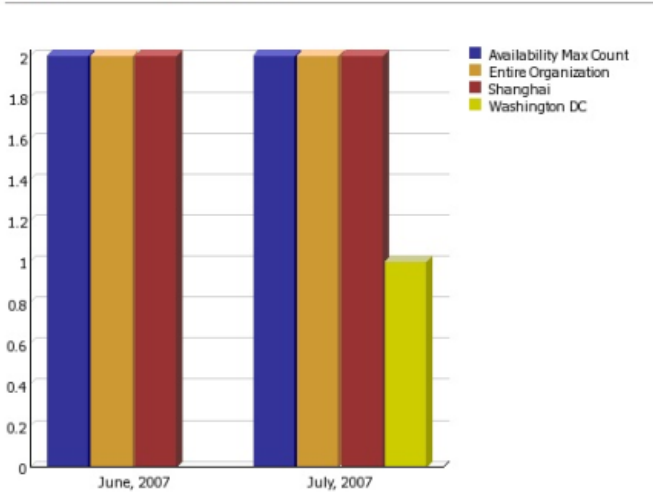
Peak Usage by Organization Over Time Report

This report displays a chart for the Peak Usage of specified features by the entire organization, and by the different nodes within the organization. The report also shows feature availability. A separate chart is produced for each of the specified features.

Because this report requires you to select a server-based organization structure, the report will work only if a license server-based organization was created before aggregation was run. See the Organizational Structures and Report Data Aggregation sections in the FlexNet Manager for Engineering Applications Online Help Library (installed with the product) for relevant information.

Peak Usage by Organization Over Time

Start Date: Jun 1, 2007 12:00:00 AM
 End Date: Jul 31, 2007 12:00:00 AM
 Organization: neworg
 Vendor: magma
 Feature: BLAST_BUILDER



BLAST_BUILDER

Year	Month	Org Node Name	Availability Max Count	Peak Licenses
2007	June	Entire Organization	2	2
		Shanghai	2	2
	July	Entire Organization	2	2
		Shanghai	2	2
		Washington DC	2	1

Figure 2-5: Peak Usage by Organization Over Time report

Peak Usage by Server Over Time Report

This report displays an area chart showing the peak licenses that have been used from each license server, with reference to the total number of available licenses.

To run this report, you must create a license server-based organization prior to running data aggregation (if one does not already exist). One of the required report parameters is Organization, which lists all of the license server-based organizations that are available. If no server-based organizations are available, the report cannot be run.

Peak Usage by Server Over Time

Start Date: Jun 2, 2007
End Date: Jul 25, 2007
Vendor: magma
Features: BLAST_BUILDER

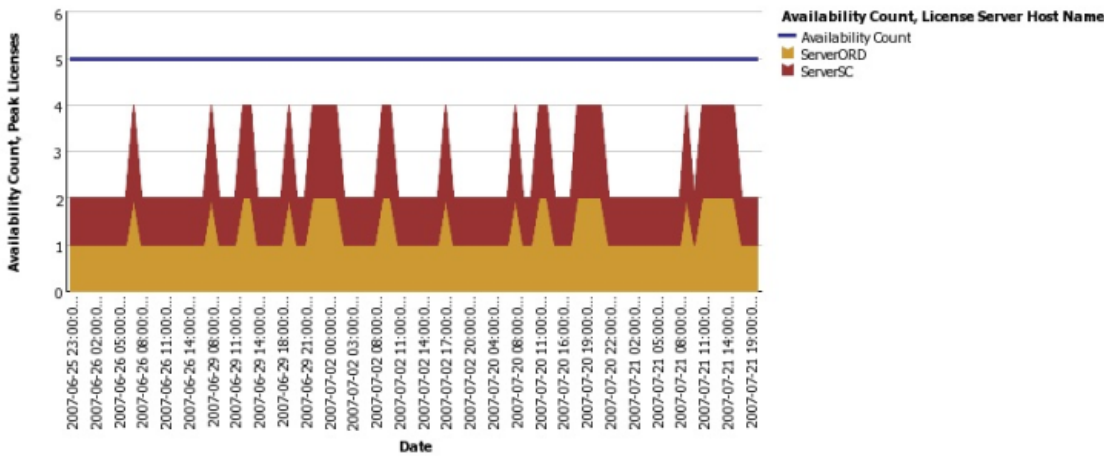


Figure 2-6: Peak Usage by Server Over Time report

Peak Borrowed Licenses by Feature

This report displays a column graph that shows the peak number of borrowed licenses across all features from a selected vendor, for a specified time period. You can drill down to the [Peak Borrowed Licenses vs. Total Peak Licenses](#) report and then to the [Users with Borrowed Licenses List](#).

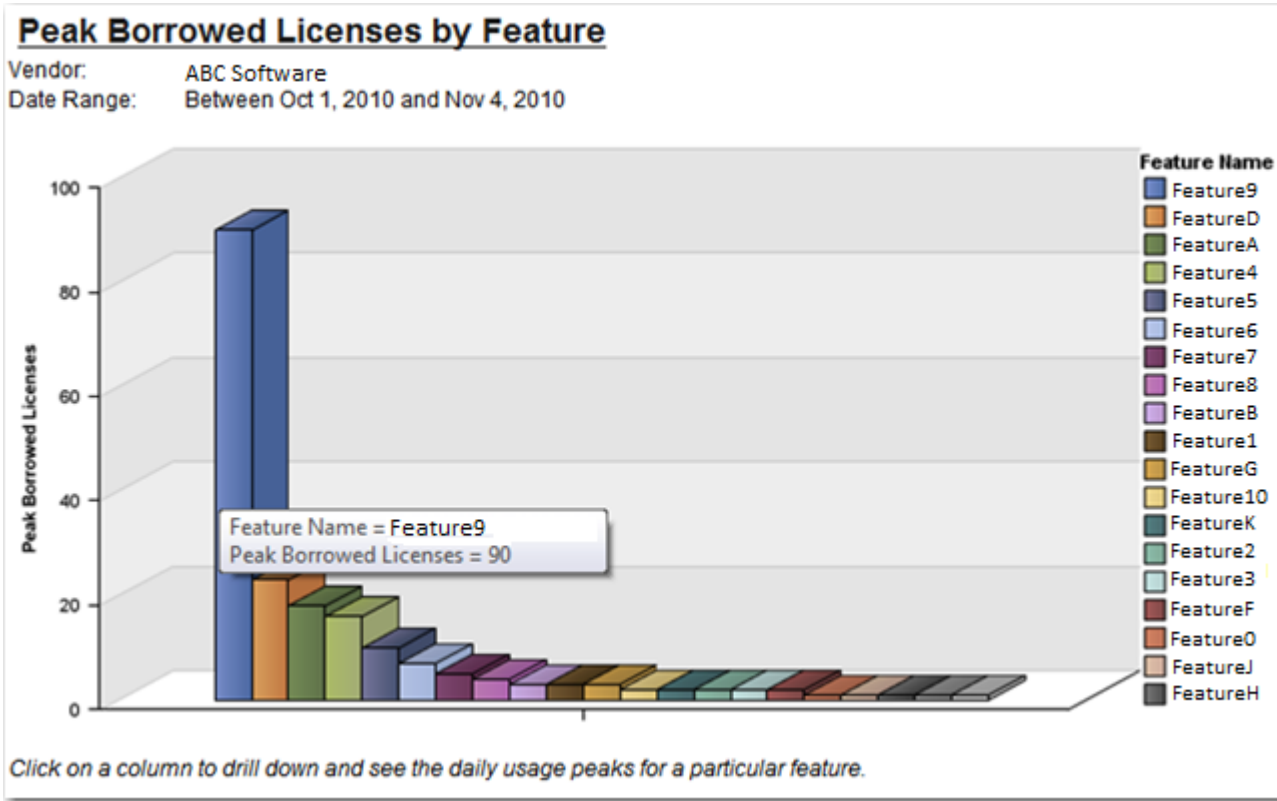


Figure 2-7: Peak Borrowed Licenses by Feature report

Peak Borrowed Licenses vs. Total Peak Licenses

This report displays a column graph comparing the overall peak licenses (including borrowed licenses) and the peak borrowed licenses for a selected vendor and feature, over a specified time period. You can drill down to the [Users with Borrowed Licenses List](#) to see the individual users with borrow license usage for a particular day.

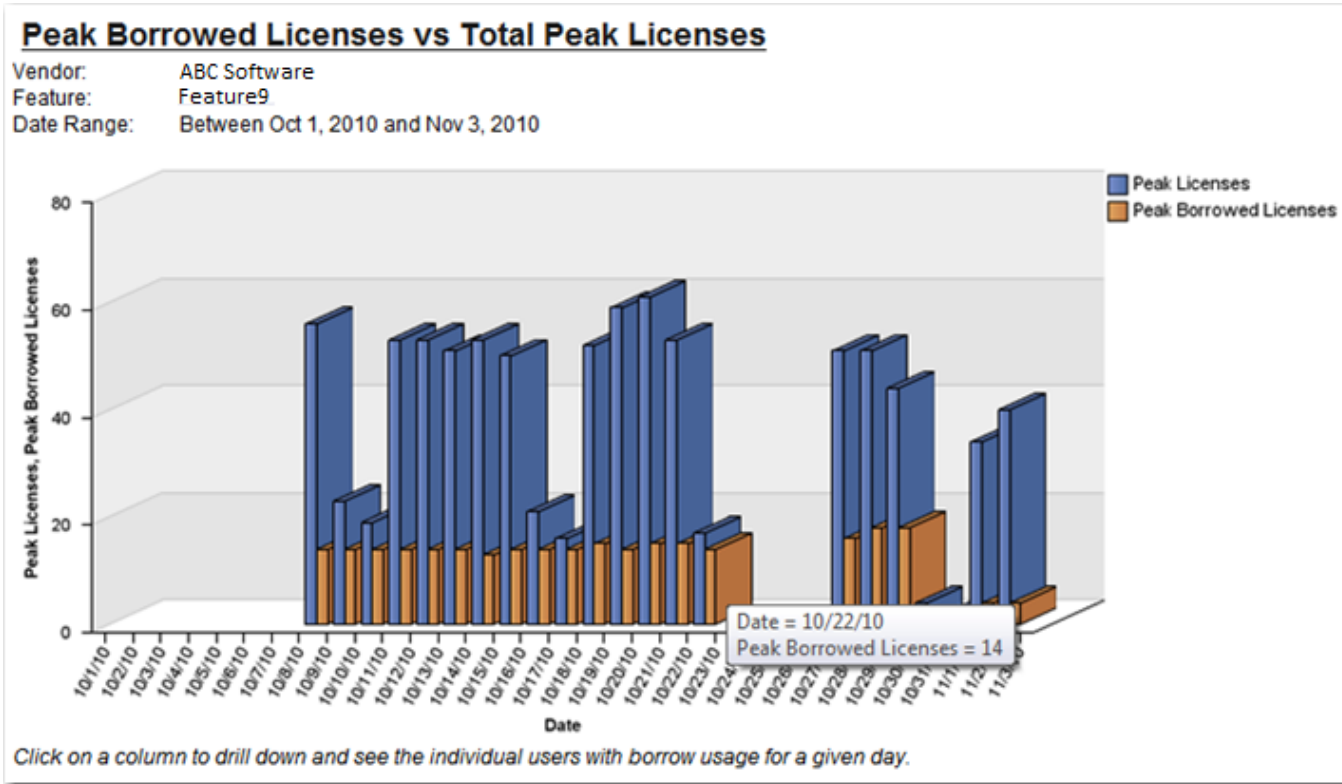


Figure 2-8: Peak Borrowed Licenses vs. Total Peak Licenses report

Users with Borrowed Licenses List

This report lists all users who consumed a borrowed license for a particular feature on a given day. It provides the following information in a table:

- User name
- Peak number of borrowed licenses consumed
- Last name
- First name
- Email address

Product-Based Reports

FlexNet Manager for Engineering Applications offers product-based usage reports for customers who use Investment Planner.

The following product-based reports are available:

- [Product Chargeback Report](#)
- [Product Daily Peak Usage Report](#)
- [Product Peak Usage Occurrences Report](#)
- [Product Peak Usage Report](#)
- [Product Peak Usage Trend \(Remix\) Report](#)

Product Chargeback Report

This report, which is part of FlexNet Manager for Engineering Applications's investment-planning functionality, summarizes the product usage by individual organizational units in your enterprise and calculates a monetary value for that usage.

Product Daily Peak Usage Report

This report, which is part of FlexNet Manager for Engineering Applications's investment-planning functionality, shows the daily peak usage for selected products. You specify the time period for which you want to see usage, and whether the report should display absolute product usage values or product usage as a percentage of available licenses.

Product Peak Usage Occurrences Report

This report, which is part of FlexNet Manager for Engineering Applications's investment-planning functionality, displays a bar chart that indicates the number of occurrences for each peak usage value for a product during a specified time period. This provides a histogram of peak usage values.

Product Peak Usage Report

This report, which is part of FlexNet Manager for Engineering Applications's investment-planning functionality, shows the peak usage for selected products. The first view of the report displays peak usage by year. Drill-through functionality enables you to see peak usage by quarters, months, days, and hours.

Product Peak Usage Trend (Remix) Report

This report, which is part of FlexNet Manager for Engineering Applications's investment-planning functionality, displays peak product usage for each day in a specified time period, and uses that usage to draw a trend line that continues to a specified point in the future. A second trend line, parallel to the first, is drawn, elevated by the number of licenses required to keep the peak usage always beneath the trend line.

The purpose of this report is to accompany a remix, although it can be run independently.

Tier-Based Usage Reports

FlexNet Manager for Engineering Applications provides two tier-based usage reports, specifically for customers who use Autodesk products (which use tier-based licensing). To enable tier-based usage reporting, you must first define tiers by grouping features together.

The following tier-based usage reports are available:

- [Tier Usage Report](#)
- [Tier Usage Hourly Report](#)
- [Tier Borrowed License Usage](#)
- [Tier Usage for Server Pools Daily Report](#)
- [Tier Usage for Server Pools Hourly Report](#)
- [Tier Usage for Server Pools Breakdown Report](#)

Tier Usage Report

The Tier Usage report displays the daily peak usage for a tier, and optionally calculates the cost of the usage (calculated using either the peak or the second-highest peak). This report can be used for billing purposes.

Data is presented in a list that shows costs, followed by a chart and list that shows peak usage for all the days in the specified time period. You can drill through to the hourly report by clicking one of the dates in the lists, which will launch the hourly report for that day, using the same options.

Options for configuring the report include:

- Calculate cost based on peak or second-highest peak, or not at all.
- Interval for the report, either the Previous Month, Previous Quarter, or a custom data range (where you specify start and end dates).
- Select the organization to report on (it is always the top level of the organization that is reported against).
- Select the tier to report on.
- Optionally include breakdown by features—there are three options: Tier data only, Feature data only, or Tier + Feature data.

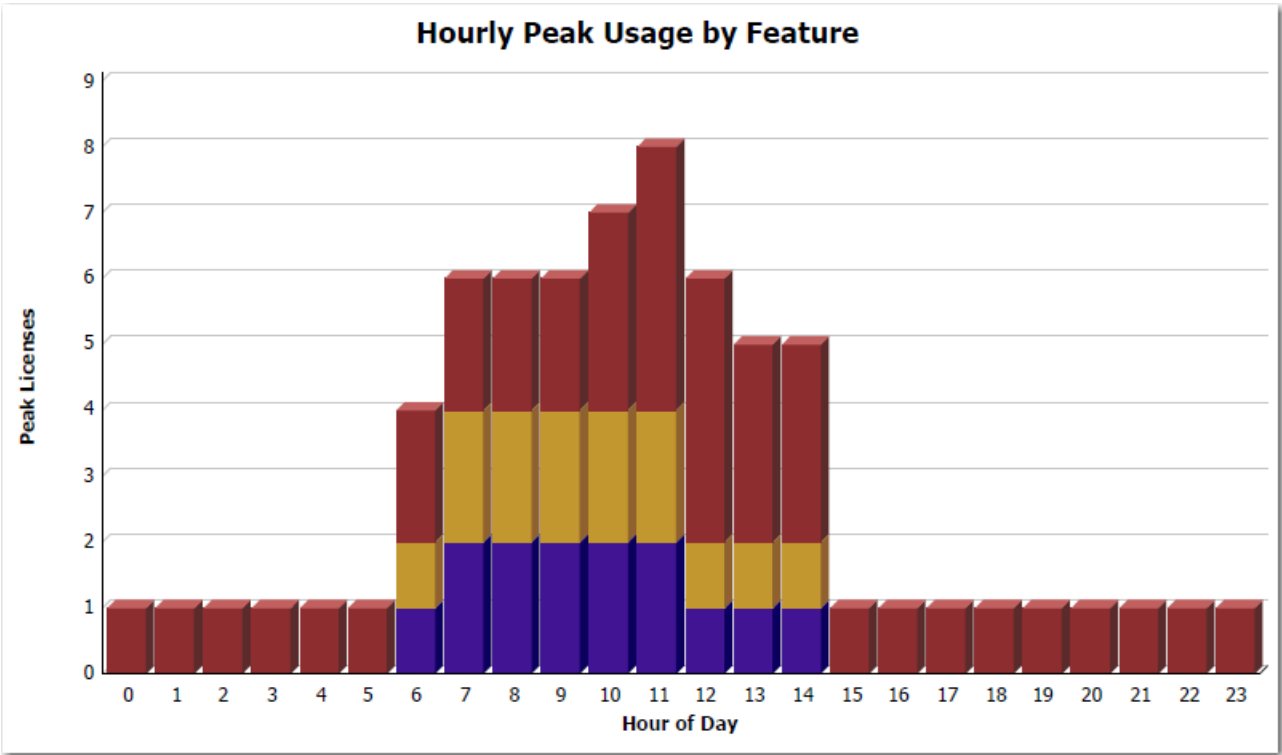


Figure 2-9: Part of the Tier Usage report, showing Hourly Peak Usage by Feature

Tier Usage Hourly Report

The Tier Usage Hourly report is similar to the [Tier Usage Report](#), except that it does not provide the option to calculate costs. To specify the reporting interval, you select start and end dates and times.

<u>Tier Usage Hourly Report</u>							
Date:	Oct 20, 2010						
Tier:	Tier A						
<u>Hourly Tier Usage</u>			<u>Hourly Feature Usage</u>				
Hour of Day	Total Used Time (seconds)	Peak Licenses	Hour of Day	Tier Name	Feature Name	Total Used Time (seconds)	Peak Licenses
0	3,600	1	0	Tier A	48800ACD_2006_OF	3,600	1
1	3,600	1	1	Tier A	48800ACD_2006_OF	3,600	1
2	3,600	1	2	Tier A	48800ACD_2006_OF	3,600	1
3	3,600	1	3	Tier A	48800ACD_2006_OF	3,600	1
4	3,600	1	4	Tier A	48800ACD_2006_OF	3,600	1
5	3,600	1	5	Tier A	48800ACD_2006_OF	3,600	1
6	4,287	4	6	Tier A	44400ADTRPVD_10_1F	313	1
7	14,594	6			44600ADTRPVSR_10_1F	314	1
8	21,600	6			48800ACD_2006_OF	3,660	2
9	21,600	6	7	Tier A	44400ADTRPVD_10_1F	3,808	2
10	23,117	7			44600ADTRPVSR_10_1F	3,810	2
11	20,882	7			48800ACD_2006_OF	6,976	2

Figure 2-10: Part of the Tier Usage Hourly report

Tier Borrowed License Usage

This report displays graphs showing the peak borrowed licenses for each tier, along with a breakdown to show which features had borrowed licenses that contributed to the borrowed licenses for the tier.

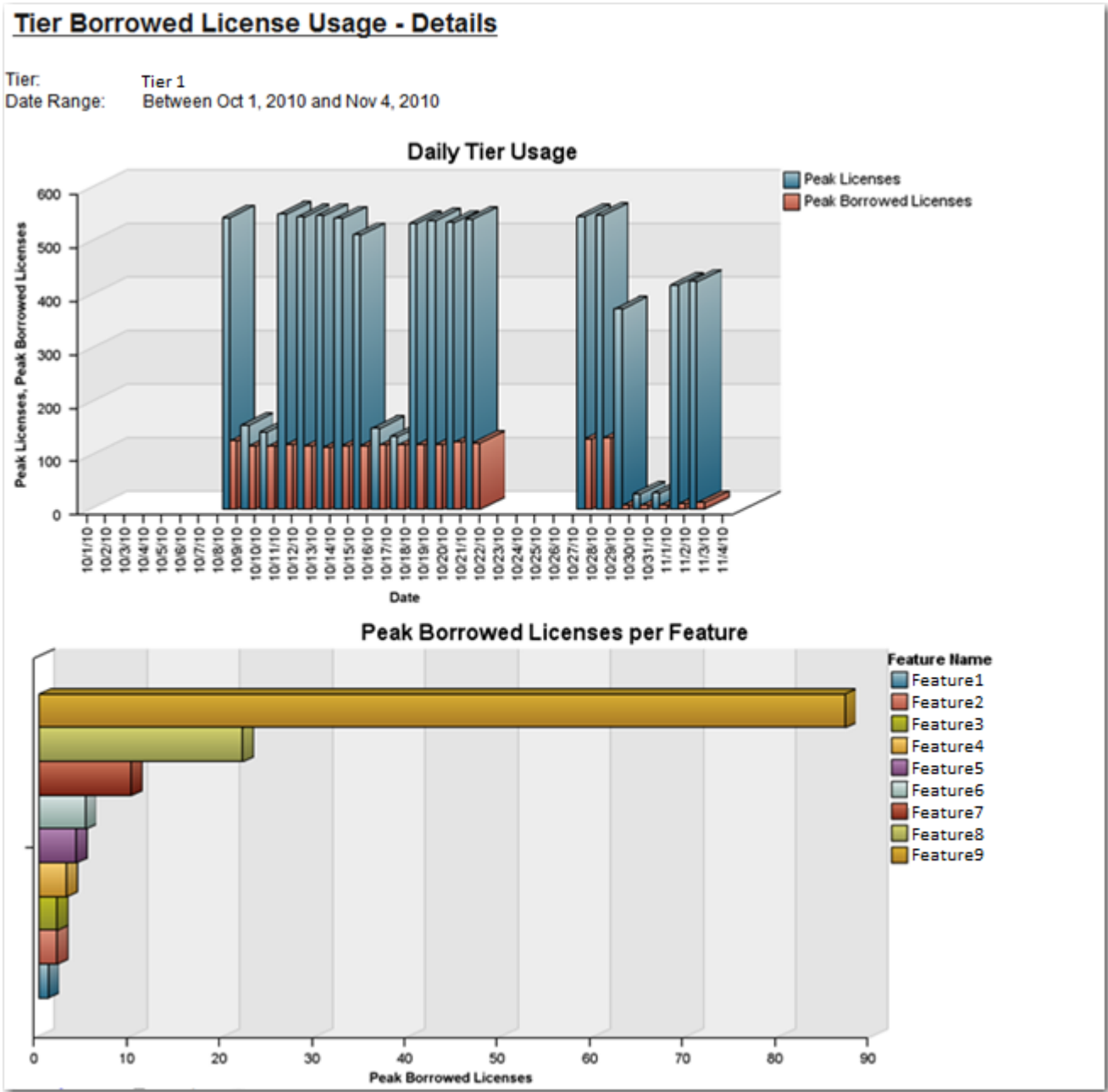


Figure 2-11: Tier Borrowed License Usage report

Tier Usage for Server Pools Daily Report

The Tier Usage for Server Pools Daily report shows, for a specified time period, the peak daily usage for a number of tiers for a specific server pool or for the entire organization. (A server pool is assumed to be an organizational unit on the second level of a license server-based organizational structure.)

This report can be used for billing analysis—specifically for comparing usage from different tiers. For example, a contract may state that licenses from one tier may be used for another tier, if available. Because license sharing may not be applicable to all tiers, you can exclude tiers before running the report.

The report highlights the day (or days) with the highest peak (or second highest peak) usage. The report displays two tables:

- The top table shows daily usage for multiple tiers for the selected server pool.
- The bottom table shows the days with the peak usage (and optionally second highest peak), as well as usage for all server pools on those days.

You can change the server pool, tier, and whether to highlight peak usage or second highest peak directly from the report page. In addition, you can click the date links to view the [Tier Usage for Server Pools Hourly report](#).

Tier Usage for Server Pools Hourly Report

The Tier Usage for Server Pools Hourly report shows, for a specified day, the peak hourly usage for a number of tiers for a specific server pool or for the entire organization. (A server pool is assumed to be an organizational unit on the second level of a license server-based organizational structure.)

This report can be used for billing analysis—specifically for comparing usage from different tiers. For example, a contract may state that licenses from one tier may be used for another tier, if available. Because license sharing may not be applicable to all tiers, you can exclude tiers before running the report.

The report highlights the hour with the highest peak usage. The report displays two tables:

- The top table shows hourly usage for multiple tiers for the selected server pool.
- The bottom table shows the hours with the peak usage, as well as usage for all server pools at that time.

You can change the server pool and tier directly from the report page. You can access this report from the [Tier Usage for Server Pools Daily report](#) by clicking one of the date links.

Tier Usage for Server Pools Breakdown Report

The Tier Usage for Server Pools Breakdown report provides more detail about the usage that contributes to the data shown in the [Tier Usage for Server Pools Daily](#) and the [Tier Usage for Server Pools Hourly](#) reports. It breaks down usage by individual server pools to enable comparison among the server pools and comparison to usage across the entire organization. In addition, it shows the usage of individual features relative to the overall usage in a tier.

This report shows usage only for a single, selected tier. (The [Tier Usage for Server Pools Daily](#) and the [Tier Usage for Server Pools Hourly](#) reports show usage from multiple tiers, to enable comparison.)

This report includes the following elements:

- **Tier Usage by Pools**—A stacked bar graph that shows daily peak usage, with different colors for each server pool, and a line to indicate usage for the entire organization. Because peak usage for separate server pools may not overlap in time with one another, peak usage for the entire organization will be less than or equal to the sum of the peaks for the server pools.

- **Feature Usage by Tier**—A stacked bar graph that shows daily peak usage for the entire organization, with different colors representing the peak usage of the individual features, and a line that shows the tier's peak usage. Because peak usage for different features may not overlap in time with one another, peak usage for the tier will be less than or equal to the sum of the peaks for the individual features.
- **Peak Usage by Pool**—This table displays the same data as the Tier Usage by Pools graph.
- **Peak Usage for Organization by Pool**—This table displays the same data as the Feature Usage by Tier graph.

You can change the server pool and tier directly from the report page.

Token-Based Usage Reporting

FlexNet Manager for Engineering Applications 15.5 provides predefined reports that enable you to report on token-based license usage. These reports are designed for customers who use products from Cadence.

These reports enable you to see more granular information about usage; to see how individual capabilities (sub-features) contribute to the peak usage of their parent *tokenized* features. The following reports are available:

- [Token-Capability Peak Usage Report](#)
- [Token-Capability Peak Percentage Usage Report](#)
- [Token-Capability Day Report](#)
- [Token-Capability User Report](#)
- [Token-Capability Top Usage Report](#)
- [Consumptive Tokens Monthly Summary Report](#)
- [Consumptive Tokens Monthly Summary with Contract Report](#)

Token-Capability Peak Usage Report

This report can be run against hourly, daily, and monthly usage data. It displays a chart and a list, both of which show—over time—the counts of each capability that contribute to the parent tokenized feature's peak for that time period. The sum of these capability counts equals the feature's peak usage. The data can be displayed in two different formats—a horizontal list, suitable for a small number of data points, and a vertical list, which is better for larger amounts of data.

Options for configuring the report include:

- **Time Interval**—Hourly, Daily, or Monthly
- **Organization**—Specify the organization for which you want to display usage data.
- **Feature**—The menu contains only the features that are broken down into capabilities.
- **List format**—Specify how the data should be displayed in the report. You can change this setting from the main page of the report.

Token Capability Peak Usage Report

Date-Time Range: Between Apr 1, 2011 12:00 AM and Apr 2, 2011 11:59 PM
Tokenized Feature: Virtuoso_Multi_mode_Simulation

List Format:

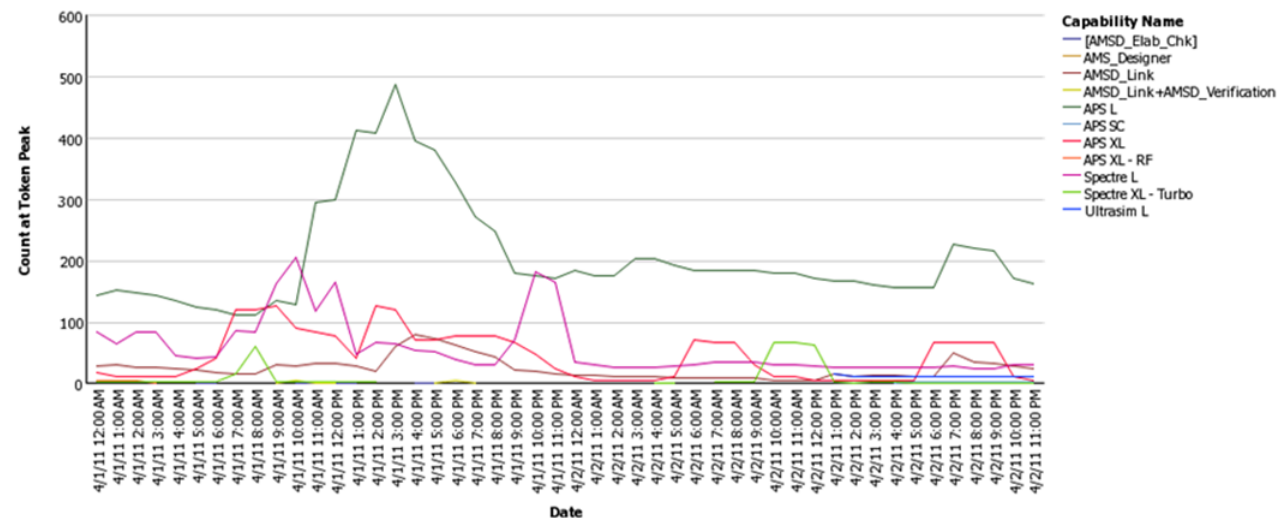


Figure 2-12: Part of a Token-Capability Peak Usage report

Token-Capability Peak Percentage Usage Report

This report is similar to the [Token-Capability Peak Usage Report](#) report, except that instead of showing the actual usage counts for the individual capabilities, it shows them as percentages, either of the feature peak or of availability. The chart can be displayed either as a line chart or a stacked bar chart, which is useful for seeing these values as percentages of the whole.

Options for configuring the report include:

- Time Interval—Hourly, Daily, or Monthly
- Organization—Specify the organization for which you want to display usage data.
- Feature—The menu contains only the features that are broken down into capabilities.
- Measure—Whether usage data should be displayed as a percentage of the feature peak, or of availability. You can change this setting from the main page of the report.
- Format—Whether data should be displayed in a horizontal or vertical list, and whether the chart should be a line chart or a stacked bar chart. You can change this setting from the main page of the report.

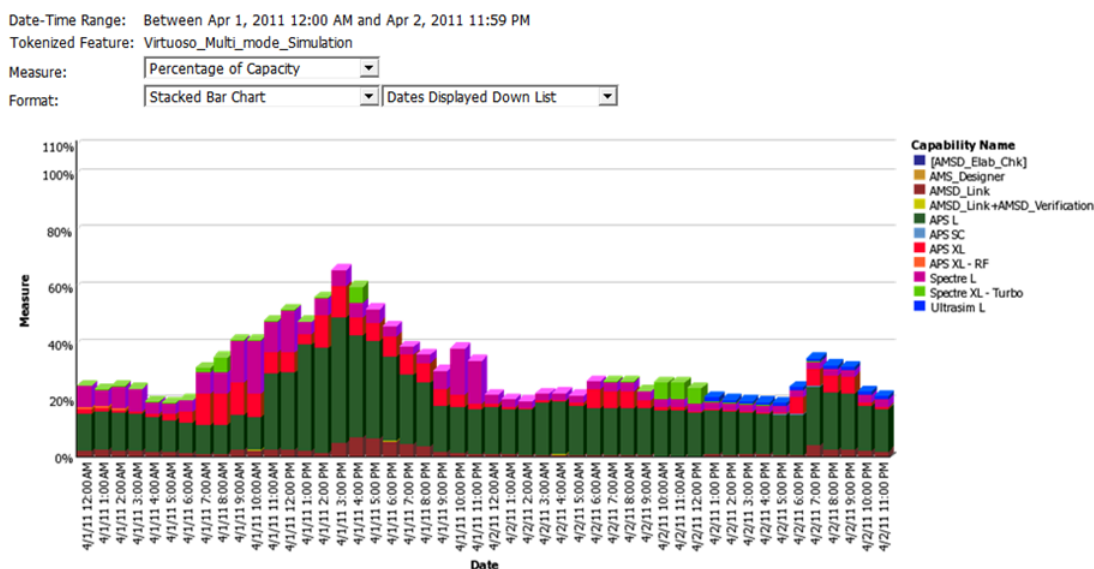


Figure 2-13: Part of a Token-Capability Peak Percentage Usage report

Token-Capability Day Report

The Token-Capability Day report shows—for a specified date and tokenized feature—how much of each capability was used (peak usage and total time), and by which users. This report is typically run for the previous day.

This report contains the following elements:

- **Stacked Capability Count at Token Peak**—Stacked area graph, where the x-axis shows the hours of the day, and the y-axis shows the number of capability licenses in use at Token Peak use. Different colors represent different capabilities. The total area matches Token Peak usage.
- **Capability Peak Usage**—Line graph, where the x-axis shows the hours of the day, and the y-axis shows peak capability. Each line shows a different capability, with different colors representing different capabilities.
- **Peak Licenses**—Table that shows capability usage for the day, including the count at token peak (which corresponds to the Stored Capability Count at Token Peak graph), Peak count (which corresponds to the Capability Peak Usage graph), and total usage time (in hours).
- **Capability Usage by User**—Table that shows capability usage by users, including the count at token peak (which corresponds to the Stored Capability Count at Token Peak graph), Peak count (which corresponds to the Capability Peak Usage graph), and total usage time (in hours).



Note • All counts are the number of tokens. FlexNet Manager for Engineering Applications does not keep track of how many tokens should be used for a given capability. For example, if Capability A requires 5 tokens to check out, and it is checked out twice, the count for that capability will equal 10, not 2.

Token-Capability User Report

The Token-Capability User report shows, for a specific user and tokenized feature, how many tokens have been used—how many for each capability, and how much time for each capability.

This report contains the following elements:

- Bar chart or line chart showing capability peak usage by hour for the selected user. If there are a large number of capabilities, the line chart may show the data more clearly.
- A table showing that lists the capabilities along with usage numbers for the selected user, and a pie graph showing capabilities by total time used.

Token-Capability Top Usage Report

The Token-Capability Top Usage report shows the total hours used for the top 10 capabilities and the total hours of usage for the top 10 capability consumers (users).

This report contains the following elements:

- **Capability Use (by total hours)**—Shows the total number of hours used for each of the top 10 capabilities. Within each capability bar, different colors represent the hours of usage for different users.
- **Top Capability Consumers (by total hours)**—Shows the total number of hours of usage for the top 10 capability consumers (users). Within each consumer bar, different colors represent the hours of usage for different capabilities.

Consumptive Tokens Monthly Summary Report

The Token-Consumption Monthly Summary report provides a tabbed interface that shows token-consumption information for a specified month. Tokens are considered consumed when a user accesses a feature that has a token-cost associated with it. Because tokens are granted per day, continued use of the feature during the same day will not result in additional token consumption; however, use of the feature on a different day will result in the additional token consumption.

Tokens are consumed by product family. If a user checks out one feature from a product family, the tokens that are consumed will enable the user to use any other feature in the same product family without consuming additional tokens.

This report relies on additional feature data (Cost Factor and Software Category) that must be manually imported into FlexNet Manager for Engineering Applications using an XML file. See the section, [Importing Additional Feature Data Using an XML File](#), for information.

The report displays the following information for the specified month:

- Total number of tokens consumed
- Number of unique users
- Breakdown of token usage, both by days and by product families

- Out-of-scope tokens and usage hours (*Out-of-scope* usage refers to usage of tokens that are not part of the enterprise's contract with Autodesk.)

Running the Report

This is an active report. After you run the report, you must save the output file. The output file contains all the data necessary to view the report, so access to the FlexNet Manager for Engineering Applications Reporting server is not required.

This report may take a long time to run. Email delivery of the report is recommended.

Consumptive Tokens Monthly Summary with Contract Report

The Token-Consumption Monthly Summary with Contract report provides a tabbed interface that shows token-consumption information for a specified month. Tokens are considered consumed when a user accesses a feature that has a token-cost associated with it. Because tokens are granted per day, continued use of the feature during the same day will not result in additional token consumption; however, use of the feature on a different day will result in the additional token consumption.

Tokens are consumed by *product family*. If a user checks out one feature from a product family, the tokens that are consumed will enable the user to use any other feature in the same product family without consuming additional tokens.

This report relies on additional feature data (Cost Factor and Software Category) that must be manually imported into FlexNet Manager for Engineering Applications using an XML file. See the section, [Importing Additional Feature Data Using an XML File](#), for information.

The report displays the following information for the specified month:

- Total number of tokens consumed
- Number of unique users
- Breakdown of token usage, both by days and by product families
- Out of scope tokens and usage-hours (*Out-of-scope* usage refers to usage of tokens that are not part of the enterprise's contract with Autodesk.)
- Information about the tokens consumed to date, and the number of tokens consumed in each month during the contract year. This enables enterprises to compare the number of tokens consumed to the number of tokens to which they are entitled.

Running the Report

This is an active report. After you run the report, you must save the output file. The output file contains all the data necessary to view the report, so access to the FlexNet Manager for Engineering Applications Reporting server is not required.

This report may take a long time to run. Email delivery of the report is recommended.

Importing Additional Feature Data Using an XML File

Both the [Token Consumption Monthly Summary](#) and the [Token Consumption Monthly Summary with Contract](#) reports require additional feature data (Cost Factor and Software Category) to run properly. Use the `costFactor` attribute to specify token cost, and the `softwareCategory` attribute to specify product family.

You can import feature data in an XML file, in one of the following ways:

- At the command line, [using the command `importVendorFeatureInfo`](#). The XML file can have any name.
- By [copying an XML file](#) named `vendor_feature.xml` to the directory `<data_dir>\vendorFeatureInfo`. The XML file *must be named* `vendor_feature.xml`.

Importing an XML File at the Command Line

You can import an XML file to provide additional data and to update existing data, using the command `importVendorFeatureInfo`. The XML file should include a list of vendors with features. All existing vendors and features will be replaced with the information contained in the XML file.

If the XML file does not specify a value for some properties, those properties will be set to NULL in the RPTDW table in the database. See [Example XML File and Impact on the Database](#) for more information.

In order for all feature information to be accurately updated, it is recommended that you run the `importVendorFeatureInfo` command after aggregation has occurred. The XML import does not insert new features into the database; it only updates features that already exist in the database. To ensure that all features exist in the database, you must run aggregation prior to importing the XML file.

Command-Line Syntax

```
flexnet importVendorFeatureInfo -u<user> -p<password> -f"<filename_with_path>" [-s<server>]
```

For example:

```
flexnet importVendorFeatureInfo -uadmin -padmin -f"c:\vendorFeatureInfo.xml"
```

A sample XML file can be found in the following directory:

`<reporting_server_installation_dir>\site\sample\VendorFeatureInfoSample.xml`

Table 2-1 • importVendorFeatureInfo Parameters

Parameter	Description
-u <user>	Specifies the user to run this command. The user must be assigned a role with the “View And Manage Investment Planner” permission in FlexNet Manager for Engineering Applications. If no such users are configured, the user “admin” can be specified.
-p <password>	Specifies the password for the user.
-f <filename_with_path>	Specifies an XML file containing the vendors and features to be imported. If the path name contains spaces, the value must be enclosed in double quotation marks.
-s <server>	Specifies the URL for the FLEXnet Manager Admin server. For example: <code>http://localhost:8888/flexnet</code> This is an optional argument. If no argument is specified, then the server URL is assumed to be: <code>http://127.0.0.1:8888/flexnet</code>

Importing an XML File by Copying the File to a Directory

You can use an XML file named `vendor_feature.xml` to provide and update information about cost factor, software category, and display name (for both vendor and feature). FlexNet Manager for Engineering Applications will automatically import the information at the end of the aggregation process.

The properties specified in the XML file (`costFactor`, `softwareCategory`, and/or `displayName`) will be updated in the RPTDW tables. Properties that are not specified in the XML file will be set to NULL in the database. This way, the XML file provides the most current information about what information is in the database. For more information, see [Example XML File and Impact on the Database](#).



Task: *To import feature data using an XML file:*

1. Ensure that the XML file is named `vendor_feature.xml`. (Rename the file if necessary.)
2. Create the following directory in the shared data directory:

`<data_dir>\vendorFeatureInfo\`
3. Copy the file `vendor_feature.xml` into the directory: `<data_dir>\vendorFeatureInfo\`

When aggregation is run, the file `vendor_feature.xml` will be imported and the RPTDW tables will be updated with the information contained in the file. If the XML file does not specify a property, the unspecified property will be set to NULL in the database.

Example XML File and Impact on the Database

```
<AllVendors>
  <vendor name="vendor1">
    <feature name="f1" displayName="feature1" softwareCategory="sc1" costFactor="32" />
    <feature name="f2" softwareCategory="sc1" costFactor="31" />
    <feature name="f3" />
  </vendor>
</AllVendors>
```

In the previous example, the following updates would be made to the database:

- For vendor **vendor1**, the displayName property will be set to NULL because it is not specified.
- For feature **f1**, all properties (displayName, softwareCategory, and costFactor) will be updated because they are all specified.
- For feature **f2**, the softwareCategory and costFactor properties will be updated, while the displayName property will be set to NULL because it is not specified.
- For feature **f3**, all properties (displayName, softwareCategory, and costFactor) will be set to NULL because they are not specified.

Operational Dashboard Widgets

Report Designer Package 15.5 R2 also provides the reports that are used as *widgets* in the Operational Dashboard. These are small, self-contained reports that you can move around the dashboard space. By default, the following report widgets are displayed.

- **Feature Usage**—An area graph that shows feature usage for a specified time period. The red line at the top of the graph represents total availability for the feature. Use the menus in the upper-left corner of the widget to filter usage data by time period and feature name (by selecting the vendor name first, then specifying the feature name for which you want to see usage data). The time period you specify for the Feature Usage report widget is the time period that is used for the Features by Peak Usage report widget. Changing the time period for either report updates the data displayed in the other report.
- **Features by Peak Usage**—A table showing the 100 features with the highest peak usage for a given time period. The table provides the vendor name, feature name, type of license (whether FlexNet or LUM), the peak percentage used within the time period, and a small area graph showing usage for the time period. (The red line represents total availability for the feature during the specified time period.) Selecting All Data for the time period shows data for a rolling two-week period. The time period you specify for the Features by Peak Usage report widget is the time period that is used for the Feature Usage report widget. Changing the time period for either report updates the data displayed in the other report.
- **Excessive Users (by time)**—A table that shows the users who have the highest feature usage (measured by time of usage and the number of licenses). Use the menu at the top to specify whether you want to see excessive usage across all features or only for a specific feature.
- **Feature Denials**—A bar graph that shows license denials for a rolling two-week period. Use the menu at the top of the widget to show all denials during the time period or only capacity-based denials, where a feature is denied because it is being used up to its current capacity. Viewing capacity-based denials can help you determine whether you need to free up some licenses or perhaps purchase some additional licenses for a specific feature.

- License Server Status**—A table showing the status of the license servers in your environment. The Type column identifies whether the server is a FlexNet license server (FLEX) or a LUM license server (LUM).



Figure 2-14: Operational Dashboard in FlexNet Manager for Engineering Applications

You can create your own reports and add them as report widgets to the dashboard.

See the *FlexNet Manager for Engineering Applications 15.5 Help Library* or the *FlexNet Manager for Engineering Applications 15.5 User Guide* for more information about the Operational Dashboard.

Report Designer Data Model for Package 15.5 R2

The Report Designer Package 15.5 R2 data model comprises several discrete models that contain all of the related information that would be required to generate a report on a specific topic. After you select which model to use, each piece of data will be correctly related to every other piece of data, provided you include only items from that selected model. To select which model to use, first you should make some decisions about what content your report will include. This will dictate which model you should use.

Note that the first three models—Feature-Org OLAP, Feature-Leaf OLAP, and Product-Org OLAP—are used for reporting on historical usage data (from report logs), while the Operational Data model is the current usage data collected directly from the license servers.

The models included are:

- **Feature-Org OLAP**—Set of models for online analytical processing for feature-license usage by an organization over time. Uses historical usage data (from report logs). Data are available hourly, daily, or monthly.
- **Feature-Leaf OLAP**—Set of models for online analytical processing for feature-license usage by a user, from a license server host, and/or for a project, over time. Uses historical usage data (from report logs). Data are available hourly, daily, or monthly.
- **Product-Org OLAP**—Set of models for online analytical processing for product-license usage by an organization over time. Uses historical usage data (from report logs). Data are available hourly, daily, or monthly.
- **Operational Data**—Set of models for online analytical processing for feature usage from a single license server or from all license servers. This model enables processing of usage for both FlexNet and LUM license servers and serves as the basis for the report widgets available to the Operational Dashboard. Uses current usage data collected directly from your enterprise's license servers.
- **Tier-Feature-Org OLAP**—Set of models for online analytical processing for tier-based license usage by an organization over time. Uses historical usage data (from report logs). This model is for use by Autodesk customers.

- **Cadence-Token-Feature-Org OLAP**—Set of models for online analytical processing for token-based license usage by an organization over time. Uses historical usage data (from report logs). This model is for use by Cadence customers.

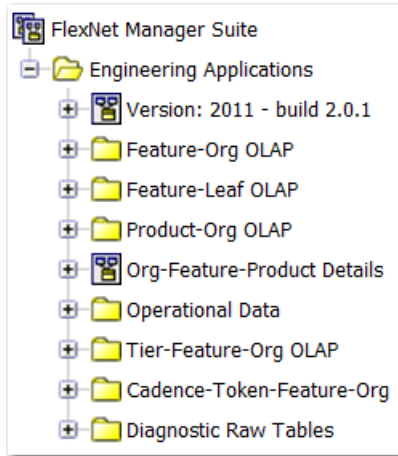


Figure 3-1: Folder structure in Query Studio (Cognos)

Within each historical data model, you can choose to use hourly, daily, or monthly data for your report. Hourly data provides more granularity; however, monthly data results in faster report performance. For the models that use organization structures (Feature-Org OLAP and Product-Org OLAP), multiple levels are available. Your choice of level depends on what data you want to see and the depth of your enterprise's hierarchy.

Determining Which Model To Use

Before creating a report, answer the following questions:

- Will the report deal with historical data (data from report logs) or with operational (current) data? (The [following example](#) focuses on building a report that uses historical data.)
- Will the report deal with product usage or feature usage?
- If it is Feature Usage, will it use an organizational structure? All Product Usage reports must use an organizational structure.
- Do you need to report on tier-based (Autodesk) or token-based (Cadence) usage?
- Will the report rely on hourly, daily, or monthly data? Monthly data is desirable for faster report performance, although monthly is not available for Operational data.
- Is there a specific level of the organization that should be reported on?

Each of these questions is closely related to the path that should be taken down the data model hierarchy (in Query Studio or Report Studio), to determine from which model you should pull items to create a report.

Using Historical Or Operational (Real-Time) Data

Historical data is more accurate because it comes from report logs. Because of this, however, the data is not available immediately. Report logs must first be imported (rotated), which typically happens daily, and then the imported report-log data must be aggregated before it is available for reports.

Operational data is more readily available because it is collected more often, but it is less accurate due to incomplete processing (for example, no special processing of duplicate-grouped events). Operational data is available for a period of only two weeks. In addition, operational data does not take into account any organizational structures that might exist.

Example: Determining Which Model To Use



Note • This example focuses on building a report that uses historical data (data from report logs) rather than operational (current) data.

Consider the following example: Assume aggregation has been completed and there is already in place an organizational structure with the following levels below the top level: Business Unit, Cost Center, and User. To create a report that displayed quarterly feature usage by business unit, you would find your model as follows:

1. First, open the 'Feature-Org OLAP' folder because you are interested in Feature usage (not product), and would like to use your Organizational Structure instead of leaf data.
2. Second, select the 'Feature Monthly' subfolder. Because this is a quarterly report, Monthly data contains enough granularity, and would yield better performance than Daily or Hourly data
3. Finally, you would choose the model F-M Level2. In the previous assumptions, Business Unit occupies the second level of the organization (underneath the top level), so the Level2 model is the correct choice.

With that choice made, any data available from F-M Level2 can be added to our report with assurances that it will be correctly linked to the rest of the data in our report, as long as everything was taken from this same model.

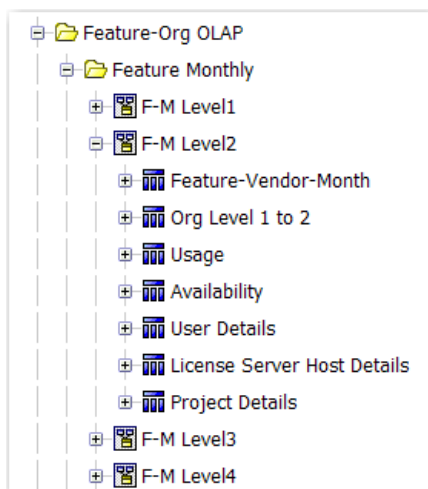


Figure 3-2: Feature-Org OLAP folder expanded for F-M Level2

Data Model Descriptions

Feature-Org OLAP

Feature-Org OLAP provides a set of models for online analytical processing for feature-license usage by an organization over time. In Cognos, the Feature-Org OLAP folder contains three subfolders:

- Feature Monthly—Report will use monthly data.
- Feature Daily—Report will use daily data.
- Feature Hourly—Report will use hourly data.

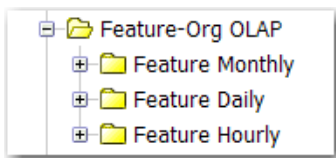


Figure 3-3: Feature-Org OLAP folder in Report Studio (Cognos)

Within each of the Feature-Org OLAP subfolders, there are five levels (namespaces), each of which represents a level in your organizational structure, with Level1 representing the top level. The level you select depends upon which level in your enterprise's organizational structure you are reporting on.

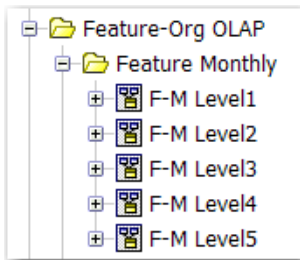


Figure 3-4: Feature Monthly folder expanded to show the levels

Within each level namespace are query subjects, some of which vary from one level to the next. When you choose a level to report on, you must work only with the query subjects in that level. For example, the following figure shows the query subjects that are available to work with when reporting on feature license usage using monthly data for Level3 of your organization.

The Feature Daily and the Feature Hourly folders are structured same way as the Feature Monthly folder. The difference is that this model is built on daily and hourly aggregation data, respectively. For the Feature Daily model, the data granularity is one day and, for the Feature Hourly model, the data granularity is one hour.

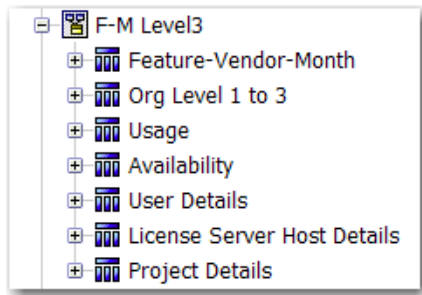


Figure 3-5: F-M Level3 namespace expanded to show query subjects.

F-M/D/H Level1

The Level1 namespace contains the following query subjects. Click the link to go to a description of the query subject.

Level1 namespaces do not have User Details, License Server Host Details, or Project Details query subjects because leaf-level objects cannot be Level1 organizational units.

- [Feature-Vendor-Month/Day/Hour](#)
- [Org Level 1](#)
- [Usage \(Organization Structure-Based\)](#)
- [Availability](#)
- [Tier](#)

F-M/D/H Level2

The F-M Level2 namespace contains the following query subjects. Click the link to go to a description of the query subject.

- [Feature-Vendor-Month/Day/Hour](#)
- [Org Level 1 to 2](#)
- [Usage \(Organization Structure-Based\)](#)
- [Availability](#)
- [User Details](#)
- [License Server Host Details](#)
- [Project Details](#)
- [Tier](#)

F-M/D/H Level3

F-M Level3 namespace contains the following query subjects. Click the link to go to a description of the query subject.

- [Feature-Vendor-Month/Day/Hour](#)
- [Org Level 1 to 3](#)
- [Usage \(Organization Structure-Based\)](#)
- [Availability](#)
- [User Details](#)
- [License Server Host Details](#)
- [Project Details](#)
- [Tier](#)

F-M/D/H Level4

The F-M Level4 namespace contains the following query subjects. Click the link to go to a description of the query subject.

- [Feature-Vendor-Month/Day/Hour](#)
- [Org Level 1 to 4](#)
- [Usage \(Organization Structure-Based\)](#)
- [Availability](#)
- [User Details](#)
- [License Server Host Details](#)
- [Project Details](#)
- [Tier](#)

F-M/D/H Level5

The F-M Level5 namespace contains the following query subjects. Click the link to go to a description of the query subject.

- [Feature-Vendor-Month/Day/Hour](#)
- [Org Level 1 to 5](#)
- [Usage \(Organization Structure-Based\)](#)
- [Availability](#)

- [User Details](#)
- [License Server Host Details](#)
- [Project Details](#)
- [Tier](#)

Tier-Feature-Vendor

The Tier-Feature-Vendor namespace enables you to create a report that shows the relationship among Tiers, Features, and Vendors. It contains the following query subjects. Click the link to go to a description of the query subject.

- [Vendor of Feature](#)
- [Tier of Features](#)
- [Feature of a Tier](#)

Feature-Leaf OLAP

Feature-Leaf OLAP provides a set of models for online analytical processing for feature-license usage by a user, from a license server host, and/or for a project, over time. In Cognos, the Feature-Leaf OLAP folder contains three namespaces:

- Monthly—Report will use monthly data.
- Daily—Report will use daily data.
- Hourly—Report will use hourly data.

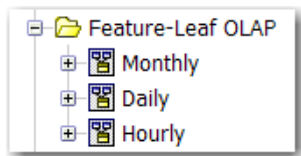


Figure 3-6: Feature-Leaf OLAP folder in Report Studio (Cognos).

Within each namespace are query subjects, which are the same for all of the namespaces. The only difference is the data on which the model is built. For example, the Monthly model is built on the monthly aggregation data (data granularity of one month), the Daily model is built on daily aggregation data (data granularity of one day), and the Hourly model is built on hourly aggregation data (data granularity of one hour).

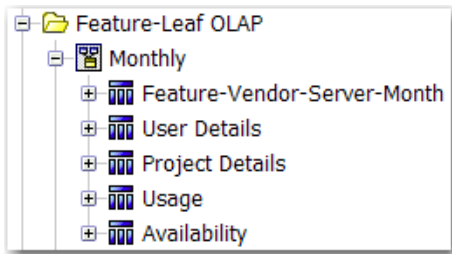


Figure 3-7: Feature-Leaf OLAP model with Monthly namespace expanded to show query subjects.

Monthly/Daily/Hourly

The namespaces in the Feature-Leaf OLAP model contain the following query subjects. Click the link to go to a description of the query subject.

- [Feature-Vendor-Month/Day/Hour](#) (contains some additional, self-explanatory properties that pertain to license server host)
- [User Details](#)
- [Project Details](#)
- [Usage \(Leaf Level-Based\)](#)
- [Availability](#)

Product-Org OLAP

Product-Org OLAP provides a set of models for online analytical processing for product-license usage by an organization over time. In Cognos, the Product-Org OLAP folder contains three subfolders:

- Product Monthly—Report will use monthly data.
- Product Daily—Report will use daily data.
- Product Hourly—Report will use hourly data.

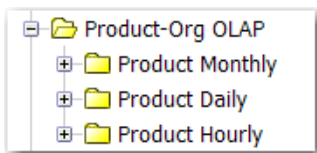


Figure 3-8: Product-Org OLAP folder in Report Studio (Cognos).

Within each of the Product-Org OLAP subfolders, there are five levels (namespaces), each of which represents a level in your organizational structure, with Level1 representing the top level. The level you select depends upon which level in your enterprise's organizational structure you are reporting on.

Both the Feature Daily and the Feature Hourly folders are structured same way as the Feature Monthly folder. The difference is that this model is built on daily and hourly aggregation data, respectively. For the Feature Daily model, the data granularity is one day and, for the Feature Hourly model, the data granularity is one hour.

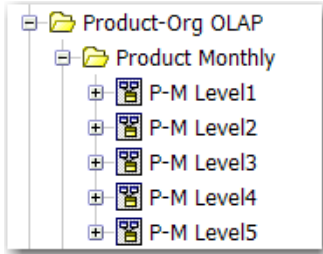


Figure 3-9: Product Monthly folder expanded to show the levels (namespaces).

Within each level namespace are query subjects, some of which vary from one level to the next. When you choose a level to report on, you must work only with the query subjects in that level. For example, the following figure shows the query subjects that are available to work with when reporting on feature license usage using monthly data for Level3 of your organization.

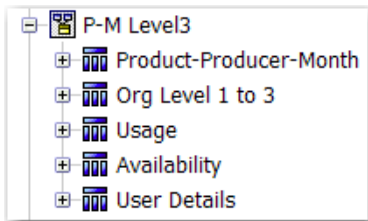


Figure 3-10: P-M Level3 namespace expanded to show query subjects

P-M/D/H Level1

The Level1 namespace contains the following query subjects. Click the link to go to a description of the query subject.

Level1 namespaces do not have User Details, License Server Host Details, or Project Details query subjects because leaf-level objects cannot be Level1 organizational units.

- [Product-Producer-Month/Day/Hour](#)
- [Org Level 1](#)
- [Usage \(Organization Structure-Based\)](#)
- [Availability](#)

P-M/D/H Level2

The Level2 namespace contains the following query subjects. Click the link to go to a description of the query subject.

- [Product-Producer-Month/Day/Hour](#)
- [Org Level 1 to 2](#)
- [Usage \(Organization Structure-Based\)](#)
- [Availability](#)
- [User Details](#)

P-M/D/H Level3

The Level3 namespace contains the following query subjects. Click the link to go to a description of the query subject.

- [Product-Producer-Month/Day/Hour](#)
- [Org Level 1 to 3](#)
- [Usage \(Organization Structure-Based\)](#)
- [Availability](#)
- [User Details](#)

P-M/D/H Level4

The Level4 namespace contains the following query subjects. Click the link to go to a description of the query subject.

- [Product-Producer-Month/Day/Hour](#)
- [Org Level 1 to 4](#)
- [Usage \(Organization Structure-Based\)](#)
- [Availability](#)
- [User Details](#)

P-M/D/H Level5

The Level5 namespace contains the following query subjects. Click the link to go to a description of the query subject.

- [Product-Producer-Month/Day/Hour](#)
- [Org Level 1 to 5](#)
- [Usage \(Organization Structure-Based\)](#)
- [Availability](#)
- [User Details](#)

Org-Feature-Product Details (Namespace)

The Org-Feature-Product Details namespace contains the following query subjects: Org Type, Feature, Vendor, Product, Software Producer. All these query subjects are standalone and do not have any underlying relationships. These query subject are useful for pre-populating prompts in the reports.

Tier-Feature-Org OLAP

The Tier-Feature-Org OLAP provides a set of models for online analytical processing for tier-based license usage by an organization over time. This is for use by enterprises who use Autodesk products.

In Cognos, the Tier-Feature-Org OLAP folder contains three subfolders:

- Tier-Feature Monthly—Report will use monthly data.
- Tier-Feature Daily—Report will use daily data.
- Tier-Feature Hourly—Report will use hourly data.

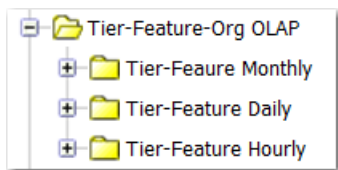


Figure 3-11: Tier-Feature-Org OLAP folder in Report Studio (Cognos)

Within each of the Tier-Feature-Org OLAP subfolders, there are five levels (namespaces), each of which represents a level in your organizational structure, with Level1 representing the top level. The level you select depends upon which level in your enterprise's organizational structure you are reporting on.

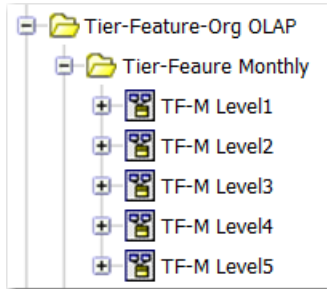


Figure 3-12: Tier Feature Monthly folder expanded to show the levels

Within each level namespace are query subjects, some of which vary from one level to the next. When you choose a level to report on, you must work only with the query subjects in that level. For example, the following figure shows the query subjects that are available to work with when reporting on feature license usage using monthly data for Level3 of your organization.

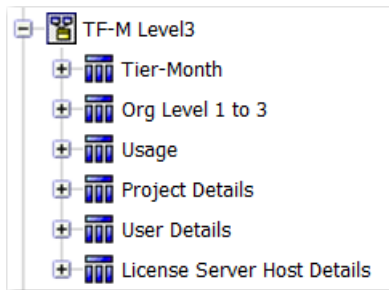


Figure 3-13: TF-M Level3 namespace expanded to show query subjects.

The Tier-Feature Daily and the Tier-Feature Hourly folders are structured same way as the Tier-Feature Monthly folder. The difference is that this model is built on daily and hourly aggregation data, respectively. For the Tier-Feature Daily model, the data granularity is one day and, for the Tier-Feature Hourly model, the data granularity is one hour.

TF-M/D/H Level1

The Level1 namespace contains the following query subjects. Click the link to go to a description of the query subject.

- [Tier-Month/Day/Hour](#)
- [Org Level 1](#)
- [Usage \(Organization Structure-Based\)](#)

TF-M/D/H Level2

The TF-M Level2 namespace contains the following query subjects. Click the link to go to a description of the query subject.

- [Tier-Month/Day/Hour](#)
- [Org Level 1 to 2](#)
- [Usage \(Organization Structure-Based\)](#)
- [Project Details](#)
- [User Details](#)
- [License Server Host Details](#)

TF-M/D/H Level3

The TF-M Level3 namespace contains the following query subjects. Click the link to go to a description of the query subject.

- [Tier-Month/Day/Hour](#)
- [Org Level 1 to 3](#)
- [Usage \(Organization Structure-Based\)](#)
- [Project Details](#)
- [User Details](#)
- [License Server Host Details](#)

TF-M/D/H Level4

The TF-M Level4 namespace contains the following query subjects. Click the link to go to a description of the query subject.

- [Tier-Month/Day/Hour](#)
- [Org Level 1 to 4](#)
- [Usage \(Organization Structure-Based\)](#)
- [Project Details](#)
- [User Details](#)
- [License Server Host Details](#)

TF-M/D/H Level5

The TF-M Level5 namespace contains the following query subjects. Click the link to go to a description of the query subject.

- [Tier-Month/Day/Hour](#)
- [Org Level 1 to 5](#)
- [Usage \(Organization Structure-Based\)](#)
- [Project Details](#)
- [User Details](#)
- [License Server Host Details](#)

Cadence-Token-Feature-Org OLAP

The Cadence-Token-Feature-Org OLAP provides a set of models for online analytical processing for token-based license usage by an organization over time. This is for use by enterprises who use Cadence products.

In Cognos, the Cadence-Token-Feature-Org OLAP folder contains three subfolders:

- Capability of Feature Monthly—Report will use monthly data.
- Capability of Feature Daily—Report will use daily data.
- Capability of Feature Hourly—Report will use hourly data.

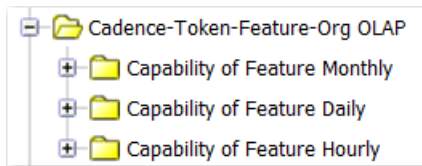


Figure 3-14: Cadence-Token-Feature-Org OLAP folder in Report Studio (Cognos)

Within each of the Cadence-Token-Feature-Org OLAP subfolders, there are five levels (namespaces), each of which represents a level in your organizational structure, with Level1 representing the top level. The level you select depends upon which level in your enterprise's organizational structure you are reporting on.

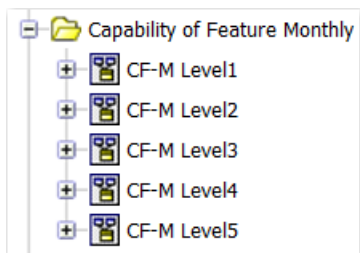


Figure 3-15: Capability of Feature Monthly folder expanded to show the levels

Within each level namespace are query subjects, some of which vary from one level to the next. When you choose a level to report on, you must work only with the query subjects in that level. For example, the following figure shows the query subjects that are available to work with when reporting on feature license usage using monthly data for Level3 of your organization.

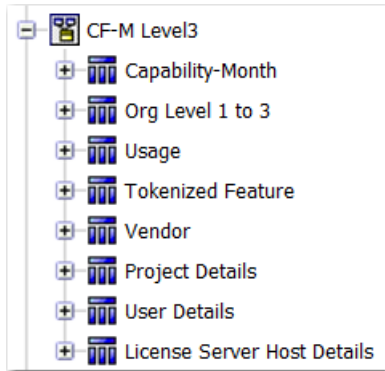


Figure 3-16: CF-M Level3 namespace expanded to show query subjects.

The Capability of Feature Daily and the Capability of Feature Hourly folders are structured same way as the Capability of Feature Monthly folder. The difference is that this model is built on daily and hourly aggregation data, respectively. For the Capability of Feature Daily model, the data granularity is one day and, for the Capability of Feature Hourly model, the data granularity is one hour.

CF-M/D/H Level1

The Level1 namespace contains the following query subjects. Click the link to go to a description of the query subject.

- [Capability-Month/Day/Hour](#)
- [Org Level 1](#)
- [Usage \(Organization Structure-Based\)](#)
- [Tokenized Feature](#)
- [Vendor](#)

CF-M/D/H Level2

The Level2 namespace contains the following query subjects. Click the link to go to a description of the query subject.

- [Capability-Month/Day/Hour](#)
- [Org Level 1 to 2](#)
- [Usage \(Organization Structure-Based\)](#)
- [Tokenized Feature](#)

- [Vendor](#)
- [Project Details](#)
- [User Details](#)
- [License Server Host Details](#)

CF-M/D/H Level3

The Level3 namespace contains the following query subjects. Click the link to go to a description of the query subject.

- [Capability-Month/Day/Hour](#)
- [Org Level 1 to 3](#)
- [Usage \(Organization Structure-Based\)](#)
- [Tokenized Feature](#)
- [Vendor](#)
- [Project Details](#)
- [User Details](#)
- [License Server Host Details](#)

CF-M/D/H Level4

The Level4 namespace contains the following query subjects. Click the link to go to a description of the query subject.

- [Capability-Month/Day/Hour](#)
- [Org Level 1 to 4](#)
- [Usage \(Organization Structure-Based\)](#)
- [Tokenized Feature](#)
- [Vendor](#)
- [Project Details](#)
- [User Details](#)
- [License Server Host Details](#)

CF-M/D/H Level5

The Level5 namespace contains the following query subjects. Click the link to go to a description of the query subject.

- [Capability-Month/Day/Hour](#)
- [Org Level 1 to 5](#)
- [Usage \(Organization Structure-Based\)](#)
- [Tokenized Feature](#)
- [Vendor](#)
- [Project Details](#)
- [User Details](#)
- [License Server Host Details](#)

Query Subjects

Feature-Vendor-Month/Day/Hour

Describes all the given Features with their Vendors known for each month/day/hour on the Time line. Feature/Vendor information comes from entitlement regardless of the usage. The properties available will vary depending on the namespace.

Table 3-1 • Feature-Vendor-Month/Day/Hour properties

Property	Description
Vendor Name	Vendor name.
Feature Name	Feature name.
Year	Year.
Month	Month name. For example, December.
Month Num	Month number. For December, this would be 12.
Quarter	Quarter number.
Quarter Name	Quarter name.
Date (1st of Month)	First date of a month.
Month of Quarter	Whether the month is the first, second, or third in a given quarter.

Table 3-1 • Feature-Vendor-Month/Day/Hour properties

Property	Description
Feature Software Category	Feature software category.
Cost Factor	Feature cost factor.
License System	License system.
Feature Display Name	Feature display name.
Vendor Display Name	Vendor display name.
Time ID	Reference to the first day of a month in the Time Dimension query subject.
Feature ID	Reference to a Feature.
Vendor ID	Reference to a Vendor Daemon.
Software Producer ID	Reference to a Software Producer of a Feature.

Org Level 1

This query subject contains the list of top organization units for different organization structure types.

Table 3-2 • Org Level 1 Properties

Property	Description
Org Node Name L1	Organization structure Level 1 node name.
Org Type Name	Organization structure type name.
Org Node ID L1	The organization node ID that is referenced from the Usage query subject.

Usage (Organization Structure–Based)

This query subject describes feature license utilization on the top level of organization structures.

Some of the query subject properties will vary, depending on which model you are working with.

Table 3-3 • Usage Properties

Property	Description
Usage Events	Number of licenses in use at the time referenced by TIME_ID.
Ultimate Denials	Total number of “true” denials during 1 month beginning at the time point referenced by TIME_ID. A true denial is an ultimate denial or folded denial, based on the configured false denials interval.
Peak Licenses	Peak number of licenses in use during one month beginning at the time point referenced by TIME_ID.
Count at Token Peak	Actual count for a given capability at the time where the tokenized feature peak occurred. It is not necessarily that tokenized feature (sum of all capabilities) peak would coincide in time with any individual capability peak.
Total Used Time (hours)	Calculated cumulative time a license has been used during this month in hours. For example, 2 licenses in use during 1 hour would result in 2 hours of total use time.
Total Used Time (seconds)	Calculated cumulative time a license has been used during this month in seconds. For example, 2 licenses in use during 1 hour would result in 2 hours of total use time.
Borrowed Usage Events	The number of licenses that have been borrowed during the hour (or day/month) referenced by TIME_ID.
Peak Borrowed Licenses	Peak number of borrowed licenses in use during one month, beginning at the time referenced by TIME_ID.
Elapsed Time at Peak (hours)	The amount of time that was spent with the peak number of licenses checked out. For example, if there was one license checked out for an eight-hour day, and then a second license was checked out just for three hours during that day, the peak would be 2, and the Elapsed Time at Peak would be 3 hours. Applies to Product-Org OLAP only.
Elapsed Time at Peak (seconds)	The amount of time that was spent with the peak number of licenses checked out. For example, if there was one license checked out for the entire hour, and then a second license was checked out just for three minutes during that hour, the peak would be 2, and the Elapsed Time at Peak would be 180 seconds (3 minutes). Applies to Product-Org OLAP only.

Table 3-3 • Usage Properties

Property	Description
Duration at Capacity (hours)	<p>The amount of time spent when the number of checked-out licenses was equal to (or greater) than the number of licenses available. For the example provided in the Elapsed Time at Peak (hours) description, if there were three licenses available, the Duration at Capacity would be zero, but if it there were only two licenses available, the Duration at Capacity would be the same as the Elapsed Time at Peak: 3 hours.</p> <p>Applies to Product-Org OLAP only.</p>
Duration at Capacity (seconds)	<p>The amount of time spent when the number of checked-out licenses was equal to (or greater) than the number of licenses available. For the example provided in the Elapsed Time at Peak (seconds) description, if there were three licenses available, the Duration at Capacity would be zero, but if it there were only two licenses available, the Duration at Capacity would be the same as the Elapsed Time at Peak: 180 seconds.</p> <p>Applies to Product-Org OLAP only.</p>
Org Node ID	<p>Reference to Organization Unit.</p>
Time ID	<p>Reference to Time.</p>
Feature ID	<p>Reference to Feature.</p> <p>Applies to Feature-Org OLAP only.</p>
Product ID	<p>Reference to Product.</p> <p>Applies to Product-Org OLAP only.</p>
Tier ID	<p>Reference to Tier.</p> <p>Applies to Tier-Feature-Org OLAP only.</p>
Capability ID	<p>Reference to Capability.</p> <p>Applies to Cadence-Token-Feature-Org OLAP only.</p>

Availability

This query subject describes a feature availability. This is global availability across an organization structure.

Some of the query subject properties will vary, depending on whether you are working with the Feature-Org OLAP or the Product-Org OLAP model

Table 3-4 • Availability Properties

Property	Description
Availability Max Count	Maximum available count of a feature's or product's licenses within a given month.
Available Time (hours)	Calculated cumulative time a license has been available during this month in hours. For example, 2 licenses were available during 24 hours would result in 48 hours of total available time.
Available Time (seconds)	Calculated cumulative time a license has been available during this month in seconds. For example, 2 licenses were available during 24 hours would result in 172,800 seconds of total available time.
Average List Price	Average list price to purchase a perpetual license for this product (before discounts). Applies to Product-Org OLAP only.
Average Net Price	Average net price to purchase a perpetual license for this product (after discounts). Applies to Product-Org OLAP only.
Average Net Cost	Average net price paid for a license (time-based or perpetual) for this product. Applies to Product-Org OLAP only.
Average Annual Fee	Average access fee (time-based licenses) or maintenance fee (perpetual licenses) for this product. Applies to Product-Org OLAP only.
Time ID	Reference to Time.
Feature ID	Reference to Feature. Applies to Feature-Org OLAP only.
Product ID	Reference to Product. Applies to Product-Org OLAP only.

Org Level 1 to 2

This query subject describes an organization as a flat structure with two levels of an organization structure hierarchy.

Table 3-5 • Org Level 1 to 2 Properties

Property	Description
Org Node Name L1	Organization structure Level 1 Node name
Org Node Name L2	Organization structure Level 2 Node name. (Usage is defined for this level node.)
Org Type Name	Organization structure Type Name.
Org Node ID L1	The organization node ID on Level 1.
Start Date L2-1	The Effective start date (inclusive) of the hierarchy relationship between L2 node and L1 node.
End Date L2-1	The Effective end date (exclusive) of the hierarchy relationship between L2 node and L1 node.
Time ID Start L2-1	Reference to the Effective start date (inclusive) of the hierarchy relationship between L2 node and L1 node.
Time ID End L2-1	Reference to the Effective end date (exclusive) of the hierarchy relationship between L2 node and L1 node.
Org Node ID L2	The org. node ID that is referenced from the Usage query subject.
User ID L2	Reference to a User. It is not null when a node is a leaf level User node. If a node is an intermediate node with children, it is always null.
Project ID L2	Reference to a Project. It is not null when a node is a leaf level Project node. If a node is an intermediate node with children, it is always null.
License Server Host ID L2	Reference to a License Server Host. It is not null when a node is a leaf level License Server Host node. If a node is an intermediate node with children, it is always null.

User Details

This query subject describes user detail information.

Table 3-6 • User Details Properties

Property	Description
User ID	Primary key.
User Name	User login ID.
First Name	Custom property populated by Organization Structure XML import.
Last Name	Custom property populated by Organization Structure XML import.
E-mail	Custom property populated by Organization Structure XML import.
Phone Number	Custom property populated by Organization Structure XML import.
Mobile Number	Custom property populated by Organization Structure XML import.
Address 1	Custom property populated by Organization Structure XML import.
Address 2	Custom property populated by Organization Structure XML import.
City	Custom property populated by Organization Structure XML import.
Postal Code	Custom property populated by Organization Structure XML import.
State/Province	Custom property populated by Organization Structure XML import.
Country	Custom property populated by Organization Structure XML import.
Department	Custom property populated by Organization Structure XML import.
Status	Custom property populated by Organization Structure XML import.

License Server Host Details

This query subject describes license server host details.

Table 3-7 • License Server Host Details Properties

Property	Description
License Server Host ID	Primary key.
License Server Host Name	License server host name.
License Server Host Display Name	License server host display name.

Project Details

This query subject describes project details.

Table 3-8 • Project Details Properties

Property	Description
Project ID	Primary key.
Project Name	Project name.
Project Display Name	Project display name.

Org Level 1 to 3

This query subject describes an organization as a flat structure with three levels of an organization structure hierarchy.

Table 3-9 • Org Level 1 to 3 Properties

Property	Description
Org Node Name L1	Organization structure Level 1 Node name.
Org Node Name L2	Organization structure Level 2 Node name.
Org Node Name L3	Organization structure Level 3 Node name. (Usage is defined for this level node.)
Org Type Name	Organization structure Type Name.

Table 3-9 • Org Level 1 to 3 Properties

Property	Description
Org Node ID L1	The organization node ID on Level 1.
Start Date L2-1	The Effective start date (inclusive) of the hierarchy relationship between L2 node and L1 node.
End Date L2-1	The Effective end date (exclusive) of the hierarchy relationship between L2 node and L1 node.
Time ID Start L2-1	Reference to the Effective start date (inclusive) of the hierarchy relationship between L2 node and L1 node.
Time ID End L2-1	Reference to the Effective end date (exclusive) of the hierarchy relationship between L2 node and L1 node.
Org Node ID L2	The org. node ID on Level 2.
Start Date L3-2	The Effective start date (inclusive) of the hierarchy relationship between L3 node and L2 node.
End Date L3-2	The Effective end date (exclusive) of the hierarchy relationship between L3 node and L2 node.
Time ID Start L3-2	Reference to the Effective start date (inclusive) of the hierarchy relationship between L3 node and L2 node.
Time ID End L3-2	Reference to the Effective end date (exclusive) of the hierarchy relationship between L3 node and L2 node.
Org Node ID L3	The org. node ID that is referenced from the Usage query subject.
User ID L3	Reference to a User. It is not null when a node is a leaf level User node. If a node is an intermediate node with children, it is always null.
Project ID L3	Reference to a Project. It is not null when a node is a leaf level Project node. If a node is an intermediate node with children, it is always null.
License Server Host ID L3	Reference to a License Server Host. It is not null when a node is a leaf level License Server Host node. If a node is an intermediate node with children, it is always null.

Org Level 1 to 4

This query subject describes an organization as a flat structure with four levels of an organization structure hierarchy.

Table 3-10 • Org Level 1 to 4 Properties

Property	Description
Org Node Name L1	Organization structure Level 1 Node name.
Org Node Name L2	Organization structure Level 2 Node name.
Org Node Name L3	Organization structure Level 3 Node name.
Org Node Name L4	Organization structure Level 4 Node name. (Usage is defined for this level node.)
Org Type Name	Organization structure Type Name.
Org Node ID L1	The organization node ID on Level 1.
Start Date L2-1	The Effective start date (inclusive) of the hierarchy relationship between L2 node and L1 node.
End Date L2-1	The Effective end date (exclusive) of the hierarchy relationship between L2 node and L1 node.
Time ID Start L2-1	Reference to the Effective start date (inclusive) of the hierarchy relationship between L2 node and L1 node.
Time ID End L2-1	Reference to the Effective end date (exclusive) of the hierarchy relationship between L2 node and L1 node.
Org Node ID L2	The org. node ID on Level 2.
Start Date L3-2	The Effective start date (inclusive) of the hierarchy relationship between L3 node and L2 node.
End Date L3-2	The Effective end date (exclusive) of the hierarchy relationship between L3 node and L2 node.
Time ID Start L3-2	Reference to the Effective start date (inclusive) of the hierarchy relationship between L3 node and L2 node.
Time ID End L3-2	Reference to the Effective end date (exclusive) of the hierarchy relationship between L3 node and L2 node.
Org Node ID L3	The org. node ID that is referenced from the Usage query subject.

Table 3-10 • Org Level 1 to 4 Properties

Property	Description
Start Date L4-3	The Effective start date (inclusive) of the hierarchy relationship between L4 node and L3 node.
End Date L4-3	The Effective end date (exclusive) of the hierarchy relationship between L4 node and L3 node.
Time ID Start L4-3	Reference to the Effective start date (inclusive) of the hierarchy relationship between L4 node and L3 node.
Time ID End L4-3	Reference to the Effective end date (exclusive) of the hierarchy relationship between L4 node and L3 node.
Org Node ID L4	The organization node ID that is referenced from the Usage query subject.
User ID L4	Reference to a User. It is not null when a node is a leaf level User node. If a node is an intermediate node with children, it is always null.
Project ID L4	Reference to a Project. It is not null when a node is a leaf level Project node. If a node is an intermediate node with children, it is always null.
License Server Host ID L4	Reference to a License Server Host. It is not null when a node is a leaf level License Server Host node. If a node is an intermediate node with children, it is always null.

Org Level 1 to 5

This query subject describes an organization as a flat structure with four levels of an organization structure hierarchy.

Table 3-11 • Org Level 1 to 5 Properties

Property	Description
Org Node Name L1	Organization structure Level 1 Node name.
Org Node Name L2	Organization structure Level 2 Node name.
Org Node Name L3	Organization structure Level 3 Node name.
Org Node Name L4	Organization structure Level 4 Node name.
Org Node Name L5	Organization structure Level 5 Node name. (Usage is defined for this level node.)
Org Type Name	Organization structure Type Name.

Table 3-11 • Org Level 1 to 5 Properties

Property	Description
Org Node ID L1	The organization node ID on Level 1.
Start Date L2-1	The Effective start date (inclusive) of the hierarchy relationship between L2 node and L1 node.
End Date L2-1	The Effective end date (exclusive) of the hierarchy relationship between L2 node and L1 node.
Time ID Start L2-1	Reference to the Effective start date (inclusive) of the hierarchy relationship between L2 node and L1 node.
Time ID End L2-1	Reference to the Effective end date (exclusive) of the hierarchy relationship between L2 node and L1 node.
Org Node ID L2	The org. node ID on Level 2.
Start Date L3-2	The Effective start date (inclusive) of the hierarchy relationship between L3 node and L2 node.
End Date L3-2	The Effective end date (exclusive) of the hierarchy relationship between L3 node and L2 node.
Time ID Start L3-2	Reference to the Effective start date (inclusive) of the hierarchy relationship between L3 node and L2 node.
Time ID End L3-2	Reference to the Effective end date (exclusive) of the hierarchy relationship between L3 node and L2 node.
Org Node ID L3	The org. node ID that is referenced from the Usage query subject.
Start Date L4-3	The Effective start date (inclusive) of the hierarchy relationship between L4 node and L3 node.
End Date L4-3	The Effective end date (exclusive) of the hierarchy relationship between L4 node and L3 node.
Time ID Start L4-3	Reference to the Effective start date (inclusive) of the hierarchy relationship between L4 node and L3 node.
Time ID End L4-3	Reference to the Effective end date (exclusive) of the hierarchy relationship between L4 node and L3 node.
Org Node ID L4	The organization node ID that is referenced from the Usage query subject.

Table 3-11 • Org Level 1 to 5 Properties

Property	Description
Start Date L5-4	The Effective start date (inclusive) of the hierarchy relationship between L5 node and L4 node.
End Date L5-4	The Effective end date (exclusive) of the hierarchy relationship between L5 node and L4 node.
Time ID Start L5-4	Reference to the Effective start date (inclusive) of the hierarchy relationship between L5 node and L4 node.
Time ID End L5-4	Reference to the Effective end date (exclusive) of the hierarchy relationship between L5 node and L4 node.
Org Node ID L5	The organization node ID that is referenced from the Usage query subject.
User ID L5	Reference to a User. It is not null when a node is a leaf level User node. If a node is an intermediate node with children, it is always null.
Project ID L5	Reference to a Project. It is not null when a node is a leaf level Project node. If a node is an intermediate node with children, it is always null.
License Server Host ID L5	Reference to a License Server Host. It is not null when a node is a leaf level License Server Host node. If a node is an intermediate node with children, it is always null.

Usage (Leaf Level–Based)

This query subject describes usage facts on the leaf level (not organization structure based).

Table 3-12 • Usage Properties

Property	Description
Usage Events	Number of licenses in use at the time referenced by TIME_ID.
Ultimate Denials	Total number of "true" denials during 1 month beginning at the time point referenced by TIME_ID. A true denial is an ultimate denial or folded denial, based on the configured false denials interval.
Peak Licenses	Peak number of licenses in use during one month beginning at the time point referenced by TIME_ID.
Total Time Used (hours)	Calculated cumulative time a license has been used during this month in hours. For example, 2 licenses in use during 1 hour would result in 2 hours of total use time.

Table 3-12 • Usage Properties

Property	Description
Total Time Used (seconds)	Calculated cumulative time a license has been used during this month in seconds. For example 2 licenses in use during 1 hour would result in 172,800 seconds of total use time.
User ID	Reference to User.
Project ID	Reference to Project.
Feature ID	Reference to Feature.
License Server Host ID	Reference to License Server Host.
Time ID	Reference to Time.

Product-Producer-Month/Day/Hour

Describes all the given Products with their Producers known for each month on the Time line. The properties available will vary depending on the query subject.

Table 3-13 • Feature-Vendor-Month properties

Property	Description
Producer	Producer name.
Product Name	Product name.
Product Version	Product version.
Product Number	Product number.
Year	Year.
Month Num	Month number. For December, this would be 12.
Month	Month name. For example, December.
Time ID	Reference to the first day of a month in the Time Dimension query subject.
Product ID	Reference to a Product.
Software Producer ID	Reference to a Software Producer of a Feature.

Table 3-13 • Feature-Vendor-Month properties

Property	Description
Product Category	Product category.
Product Family	Product family.
Product Notes	Product notes.
Software Producer Category	Software producer category.
Software Producer Notes	Software producer notes.
Quarter	Quarter number.
Quarter Name	Quarter name.
Date (1st of Month)	First date of a month.
Month of Quarter	Whether the month is the first, second, or third in a given quarter.

Tier

This query subject describes any tier association that the feature has.

Table 3-14 • Tier Properties

Property	Description
Tier ID	Primary key.
Tier Name	Tier name.
Tier Cost	Cost (expressed as an integer) associated with the tier.

Vendor of Feature

This query subject describes the feature vendor.

Table 3-15 • Vendor of Feature Properties

Property	Description
Vendor Name	Name of the feature vendor.
Vendor License System	Vendor License System (1 = FLEX, 2 = LUM, 3 = SENTINEL, 4 = Elan, 5 = MathLM, 6 = Bentley, 7 = Reprise, 8 = LM-X License Manager, 9 = SPLM).
Vendor ID	ID associated with the feature vendor.
Vendor Display Name	Custom property.

Tier of Features

This query subject describes a tier containing features.

Table 3-16 • Tier of Features Properties

Property	Description
Tier Name	Name of the tier.
Tier ID	Primary key.
Tier Cost	Cost associated with the tier.

Feature of a Tier

This query subject describes the feature that is part of a tier.

Table 3-17 • Feature of a Tier Properties

Property	Description
Feature Name	Name of the feature.
Feature Software Category	Custom property.
Feature Cost Factor	Custom property.
Feature ID	ID associated with the feature.

Table 3-17 • Feature of a Tier Properties

Property	Description
Vendor ID	ID associated with the feature vendor.
Feature Display Name	Custom property.

Operational Data

The Operational Data query subjects are divided into two namespaces, [Feature Real Time \(by Server\)](#), and [Feature Real Time \(Servers Combined\)](#), which provides the usage data from the first namespace aggregated slightly so that usage from multiple license servers has been combined, which is necessary to get accurate peak usage numbers for features that are served by more than one license server.

Both namespaces have data by the minute, which is the most granular data as collected by the agent, and then aggregated into hourly and daily values.

The Servers Combined namespace also includes a folder with query subjects that represent lists of top features used, by their utilization percentage. The same values could be derived by the other existing query subjects, but accessing them through these lists provides better performance, which is desirable for the Operational Dashboard.

Unlike the familiar aggregation of historical data, the aggregation for the Servers Combined hourly and daily data, and for combining usage from multiple servers, is done implicitly as part of the data connection; no extra step is necessary.

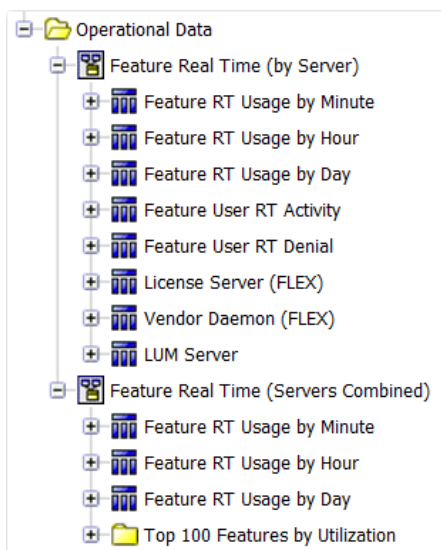


Figure 3-17: Operational Data folders expanded to show the levels and query subjects (in Query Studio)

Feature Real Time (by Server)

This namespace contains data that reflects all of the current usage data as it is collected from the individual license servers. It contains the following query subjects:

- [Feature RT Usage by Minute](#)—This is the feature usage data retrieved by the agent in its most raw form. Usage levels for each feature are recorded by the minute.
- [Feature RT Usage by Hour](#)—Same as Feature RT Usage by Minute, except that the data has been aggregated so that a single record represents all usage for a given feature (from one license server) during one hour.
- [Feature RT Usage by Day](#)—Same as Feature RT Usage by Hour, except that the data has been aggregated so that a single record represents all usage for a given feature (from one license server) during one entire day.
- [Feature User RT Activity](#)—Represents all the users that had any feature checked out at the last time data was gathered. This can be used to identify which users are currently using a feature, and determine how long they have had these licenses checked out.
- [Feature User RT Denial](#)—Represents denials to license checkout requests, and which users received them.
- [License Server \(FLEX\)](#)—Status information about individual FlexNet license servers.
- [Vendor Daemon \(FLEX\)](#)—Status information about individual FlexNet vendor daemons.
- [LUM Server](#)—Status information about individual LUM servers.

Feature Real Time (Servers Combined)

This namespace provides the usage data from the first namespace—[Feature Real Time \(by Server\)](#)—aggregated slightly so that usage from multiple license servers has been combined. This is necessary to get accurate peak usage numbers for features that are served by more than one license server. It contains the following query subjects:

- [Feature RT Usage by Minute](#)—Usage levels for each feature are recorded by the minute, combined across all license servers.
- [Feature RT Usage by Hour](#)—Same as Feature RT Usage by Minute, except that the data has been aggregated so that a single record represents all usage for a given feature (from all license servers) during one hour.
- [Feature RT Usage by Day](#)—Same as Feature RT Usage by Hour, except that the data has been aggregated so that a single record represents all usage for a given feature (from all license servers) during one entire day.

Top 100 Features by Utilization

The query subjects in this folder represent the top 100 features, in terms of their utilization percentage (maximum licenses used / available licenses). The following query subjects are available:

- Top Feature Usage (Last 30 Minutes)
- Top Feature Usage (Last Hour)
- Top Feature Usage (Last 2 Hours)
- Top Feature Usage (Last Day)
- Top Feature Usage (Last 3 Days)
- Top Feature Usage (Overall)

Operational Data Query Subjects

The query subjects described in this section apply only to the Operational Data folder.

Feature RT Usage by Minute/Hour/Day

The properties apply to the Feature RT Usage by Minute/Hour/Day query subjects found in both Feature Real Time (by Server) and Feature Real Time (Servers Combined). The data presented for Feature Real Time (Servers Combined) represents the combined usage from all license servers that serve the feature.

Table 3-18 • Feature RT Usage by Minute/Hour/Day Properties


Property	Description
Date	<ul style="list-style-type: none"> • by Minute—Timestamp indicating when the data was collected. • by Hour—Timestamp representing the start of the hour represented (ex. 4/5/2012 13:00:00 indicates this record is representing usage from 1:00 p.m. to 1:59 p.m. on April 5). • by Day—Timestamp representing the start of the day (midnight) represented.
Feature Name	Name of the feature.
License Server Host	Name of the host of the license server that served this feature.  Note • This property is not part of the Feature RT Usage by Minute/Hour/Day query subject that is in Feature Real Time (Servers Combined).
Vendor Name	Name of the vendor for this feature.
Licensing System	Licensing system used to serve this feature: FLEX or LUM.

Table 3-18 • Feature RT Usage by Minute/Hour/Day Properties

Property	Description
Licenses in Use	<ul style="list-style-type: none"> • by Minute—The number of licenses that were in use (checked out) for this feature at the time the data was collected (Date). • by Hour—Not applicable. • by Day—Not applicable.
Maximum Licenses in Use	<ul style="list-style-type: none"> • by Minute—Not applicable. • by Hour—The maximum or peak number of licenses that were in use simultaneously during this hour, for this feature. • by Day—The maximum or peak number of licenses that were in use simultaneously during this day, for this feature.
Licenses Available	<ul style="list-style-type: none"> • by Minute—Number of licenses available at the time when the data was collected (Date). • by Hour—The maximum number of licenses available simultaneously during this hour. • by Day—The maximum number of licenses available simultaneously during this day.

Feature User RT Activity

Table 3-19 • Feature User RT Activity Properties

Property	Description
Date	The timestamp indicating when this data was collected, meaning that at this time, the user had the feature checked out. There should never be more than one record per combination user, user host, vendor, feature, version, and license server host.
Feature Name	Name of the feature.
Feature Version	Version of the feature in use.
License Server Host	Name of the host of the license server that served this feature.
Vendor Name	Name of the vendor for this feature.
Licensing System	Licensing system used to serve this feature: FLEX or LUM.
User Name	The user that is currently using this feature.
User Host	Name of the host machine from which the user is accessing this feature.
Licenses in Use	The number of licenses the user currently has checked out for this feature.
Elapsed Time	The time elapsed since the user first checked out the licenses for this feature. This field can be used to identify users that may have checked out features for an unexpectedly long time, and perhaps should be able to check in and free up these licenses.

Feature User RT Denial

Table 3-20 • Feature User RT Denial Properties

Property	Description
Date	The timestamp indicating when this data was collected.
Feature Name	Name of the feature.
Feature Version	Version of the feature in use.
License Server Host	Name of the host of the license server that received the feature use request and issued the denial.
Vendor Name	Name of the vendor for this feature.

Table 3-20 • Feature User RT Denial Properties

Property	Description
Licensing System	Licensing system used to serve this feature: FLEX or LUM.
User Name	The user that requested the feature and received the denial.
User Host	Name of the host machine from which the user was attempting to access the feature.
Denial Count	Number of licenses requested.
Reason Code	Code indicating the reason for the denial. A value of -4 indicates that all available licenses are already in use.

License Server (FLEX)

Table 3-21 • License Server (FLEX) Properties

Property	Description
ID	An identifier number.
Name	Name of the FlexNet license server.
Server Host Name	Name of the host where the FlexNet license server is running.
Status	Value indicating the status of the license server. <ul style="list-style-type: none"> • 180 = Up • 170 = Manageable and Up • 160 = Rereading • 150 = Starting • 140 = Stopping • 130 = Unknown • 100 = Down
Last Update Date	Timestamp indicating when this data was collected.

Vendor Daemon (FLEX)

Table 3-22 • Vendor Daemon (FLEX) Properties

Property	Description
Name	Name of the vendor daemon.
Status	Value indicating the status of the vendor daemon. <ul style="list-style-type: none"> • 180 = Up • 170 = Manageable and Up • 160 = Rereading • 150 = Starting • 140 = Stopping • 130 = Unknown • 100 = Down
ID	An identifier number.
License Server ID	ID of the FlexNet license server. This maps to the ID field of License Server (FLEX).
Last Update Date	Timestamp indicating when this data was collected.

LUM Server

Table 3-23 • LUM Server Properties

Property	Description
ID	An identifier number.
Name	Name of the LUM server.
Server Host Name	Name of the host where the LUM server is running.
Vendor	Name of the vendor for this LUM server.

Table 3-23 • LUM Server Properties

Property	Description
Status	Value indicating the status of the LUM server. <ul style="list-style-type: none"> • 180 = Up • 170 = Manageable and Up • 160 = Rereading • 150 = Starting • 140 = Stopping • 130 = Unknown • 100 = Down
Last Update Date	Timestamp indicating when this data was collected.
Creation Date	Timestamp indicating when this LUM server was added to FlexNet Manager for Engineering Applications

Top Feature Usage (*time period*)

The Top 100 Features by Utilization folder contains multiple Top Feature Usage query subjects, each of which applies to a different time period (for example, Last 2 Hours). The properties described in the following table apply to all of the Top Feature Usage query subjects.

Table 3-24 • Top Feature Usage (*time period*) Properties

Property	Description
Feature Name	Name of the feature.
Vendor Name	Name of the vendor.
Licensing System	Licensing system used to serve this feature: FLEX or LUM.
Maximum Utilization	Maximum percentage of licenses used for the given time period: licenses in use / availability

Tier-Month/Day/Hour

Describes all the given tiers known for each month/day/hour on the Time line. The properties available will vary depending on the namespace.

Table 3-25 • Tier-Month/Day/Hour properties

Property	Description
Tier Name	Tier name.
Year	Year.
Month	Month name. For example, December.
Month Num	Month number. For December, this would be 12.
Day of Month	Number, day of month.
Hour of Day	Number, hour of day.
Date	Full date.
Time ID	Reference to the first day of a month in the Time Dimension query subject.
Date (seconds)	Unix representation of date in seconds starting from 01/01/1970.
Quarter	Quarter number.
Quarter Name	Quarter name.
Month of Quarter	Whether the month is the first, second, or third in a given quarter.
Week	Number, week of month.
Date (1st of Month)	First date of a month.
Day of Year	Number of the day in the year.
Day of Quarter	Number of the day in the quarter.
Day of Week Num	Number, day of week.
Day of Week	Name of day of week.
Weekday Flag	1 for week day, 0 for weekend.
Tier ID	Reference to a tier.

Table 3-25 • Tier-Month/Day/Hour properties

Property	Description
Tier Cost	Cost associated with the tier.

Capability-Month/Day/Hour

Describes all the given capabilities known for each month/day/hour on the Time line. The properties available will vary depending on the namespace.

Table 3-26 • Capability-Month/Day/Hour properties

Property	Description
Capability Name	Capability name.
Year	Year.
Month	Month name. For example, December.
Month Num	Month number. For December, this would be 12.
Day of Month	Number, day of month.
Hour of Day	Number, hour of day.
Date	Full date.
Time ID	Reference to the first day of a month in the Time Dimension query subject.
Date (seconds)	Unix representation of date in seconds starting from 01/01/1970.
Quarter	Quarter number.
Quarter Name	Quarter name.
Month of Quarter	Whether the month is the first, second, or third in a given quarter.
Week	Number, week of month.
Date (1st of Month)	First date of a month.
Day of Year	Number of the day in the year.
Day of Quarter	Number of the day in the quarter.
Day of Week Num	Number, day of week.

Table 3-26 • Capability-Month/Day/Hour properties

Property	Description
Day of Week	Name of day of week.
Weekday Flag	1 for week day, 0 for weekend.
Capability ID	Reference to a Capability of the Cadence Token Based License.
Feature ID	Reference to a Tokenized feature name (provided in a license file).
Capability Display Name	Custom property.

Tokenized Feature

Table 3-27 • Tokenized Feature Properties

Property	Description
Feature Name	Name of the feature.
Feature ID	ID associated with the feature.
Vendor ID	ID associated with the feature vendor.
Feature Display Name	Custom property.
Feature Software Category	Custom property.
Feature Cost Factor	Custom property.

Vendor

Table 3-28 • Vendor Properties

Property	Description
Vendor Name	Name of the software vendor.
Vendor ID	ID associated with the feature vendor.
Vendor Display Name	Custom property.

Table 3-28 • Vendor Properties

Property	Description
Vendor License System	Vendor License System (1 = FLEX, 2 = LUM, 3 = SENTINEL, 4 = Elan, 5 = MathLM, 6 = Bentley, 7 = Reprise, 8 = LM-X License Manager, 9 = SPLM).

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