**What's new in Dynamics 365 Business Central telemetry - December 2022**

It is December and it has been a month since the last newsletter (and we had a massive telemetry feast at Directions EMEA...). As always, the bleeding edge news on Dynamics 365 Business Central telemetry happens on Twitter, so if you want to keep up with the latest and greatest (and the beta versions of the Power BI telemetry apps) then follow me there (@kennienp). The intention of these monthly newsletters is to try to gather everything that I know in this area and present it here. Let’s go…

**Impressions from Directions 2022**

The Directions EMEA 2022 this year had a huge theme on telemetry and the insights that customers and partners can gain from this technology. I counted 8 sessions and workshops on the topics which is insane considering that the schedule normally only has a few sessions. I was so happy to see community speakers and sponsors present on both technical aspects and more strategic ones. I was busy with presentations and partner discussions so I was not able to attend all of them, but here are my impressions

* On the second day keynote, engineering manager for the Business Central platform and Microsoft partner Aida Seifi Labrosse spend 10 minutes demoing the Power BI Usage app and talked about different usage scenarios that can help partners get more data-driven. It was fantastic to see the app being presented for 2800 people in that room. She ended the presentation by announcing that the Power BI Usage app for ISVs was now Generally Available (GA) (read more below). Nice!
* Thursday, I did a session on how partners can do (sales) follow-ups using the Power BI Usage app (read more below). On stage with me I had Paul Cartwright and Tom Bevan from theNAVPeople. Their role was to interrupt and comment on things in the presentation that related to their experiences and in my opinion, that worked very well. I got some good perspectives on things, and I also hope that participants related more to the topic by having real-life input right there on stage.
* During the conference, I had numerous discussion with partners on how they can use the Power BI Usage app to be more data-driven in their partner practice. I got feedback on the app (that have now been implemented in the December update) and many partners told me that now is the time for them to go back home and really get started on this journey. I think this will be a good investment (read more below on the business case for telemetry).
* Friday morning after the party, we had gathered some Microsoft experts and some community experts to do a workshop on telemetry. The idea was to help workshop participants get more data-driven on exactly the areas where they struggled and help them get to the next step for them. Feedback was great from participants, and I would love to de a repeat of this at other conferences.
* On the last session slot on Friday, we had Joost and XXX presenting practical ways to use telemetry in a partner practice. Joost focused on alerting and the new Logic app template apps his team developed and put on docs (read more below). Petras took the audience through a tour-de-force presentation on all things and tools in telemetry. Great presentation.

**The Telemetry Business Case**

In July 2022, I wrote about the business case for telemetry. Instead of just repeating that content here, go check it out here

https://www.linkedin.com/pulse/what-business-case-telemetry-kennie-nybo-pontoppidan/

Implementing and using telemetry is an investment that initially will take some time. So why now and not later (we are super busy)? I would like to quote my friend and partner-in-crime from the Business Central Server Runtime team (we develop and maintain the server, AL runtime, database, reporting capabilities, web services stack, and a few more things) Jens Møller-Pedersen:

“In an engineering improvement pays off within a year (and then keeps on saving time for the team), then just do it.”

This is his standard answer if a team member asks if he/she can fix something in our build system/tests/dev processes/development environment/…

The same way, I would like to challenge our partners when hesitant on how/when to operationalize telemetry. Enabling telemetry and installing the Power BI app on a single customer environment takes at most 30 minutes (I am aware that there might be waiting time to get Azure resources created, permissions sorted out, …). Going back to the article linked above (go read it, it takes 2 minutes), don’t you think that you will save more than 30 minutes the next year by having insights into usage, performance, and stability for that customer?

**The data-driven follow up meeting**

As mentioned above when reflecting on Directions EMEA, we did a session about telemetry usage for non-technical people, directed at sales people.

To make it easy to get started, I added a Powerpoint deck with four scenarios that I hope can make a follow-up meeting with a customer worth their time (and yours)

1. Health check
2. Out of the box features
3. Customers can do self-service reporting with Excel layouts
4. Customers do automation (with PowerAutomate/Flow?)
5. Customers can use Teams/mobile/tablet clients

Get the deck here

https://github.com/microsoft/BCTech/tree/master/samples/AppInsights/Presentations#what-power-point-presentations-are-available

and let me know what you think.

**Workshop + deck**

At Directions EMEA 2022, we did a workshop to help people get unblocked on different areas in telemetry

* Initial look at telemetry through the Power BI app(s)
  + get help with insights
* Getting cost under control
  + look at cost data and telemetry usage and see my options
* Get started with alerting
  + set up Logic app from docs samples and look at the alerting scenarios
* Learning KQL on real data

If you are a trainer and would like to do a similar workshop, the deck we used for the introduction (including links to learning resources) is now available. As with everything on the BCTech repository, the workshop and deck is open source (MIT license), so feel free to copy and adapt to your needs.

Get the deck here

https://github.com/microsoft/BCTech/tree/master/samples/AppInsights/Presentations#what-power-point-presentations-are-available

and let me know what you think.

**Alerting on telemetry**

If something happens in your environment or app that you need to act on, you can set up a system that sends you an alert. Since last month, we worked on making the documentation on alerting better, see

https://learn.microsoft.com/en-us/dynamics365/business-central/dev-itpro/administration/telemetry-alert

We also added and documented many new alerting scenarios and KQL queries for alerting, see

https://github.com/microsoft/BCTech/tree/master/samples/AppInsights/Alerts#alerting-condition-kql-samples

And our Control Plane team (who owns the tenant administration experience) added a new sample Logic app that enables you to post an adaptive card in Teams for each available environment update (and lets you take an action). This is pretty cool because it takes telemetry from being reactive (what happed) to proactive (here is something that is about to happen) and even to actionable (do you want to change the course of action.

Go check out the sample apps that the team added to docs, I hope this will inspire you to get started on alerting. They have added sample apps for these four scenarios

* Grouped notification for available updates (in an email)
* Notification for deleted environment (in Teams channel)
* Take action on failed environment updates (add your favourite action/channel)
* Post adaptive cards in Teams for each available environment update

Learn more here:

https://learn.microsoft.com/en-us/dynamics365/business-central/dev-itpro/administration/tenant-admin-center-notifications#customize-notifications-and-automation

**Power BI Usage apps**

As mentioned above, the Power BI app on app usage (aka the ISV app) is now GA on Appsource.

Get it here:

aka.ms/bctelemetry-isv-app

We also updated the docs for Power Apps on telemetry to include the new app:

https://learn.microsoft.com/en-us/dynamics365/business-central/dev-itpro/administration/telemetry-power-bi-app

For the first time ever, we have two European countries that have 100+ MAU on the Power BI usage apps:

Way to go, Germany and the Netherlands.

Also, the combined MAU for the two apps is now exceeding 1000. This was a personal milestone for me to reach in this quarter, so I am very happy to see this happening.

The December update for the apps have a lot of new features and improvements. Here as some highlights (consider this an early Christmas present, even if you do not celebrate. Everyone deserves presents no matter what… 😊):

On all four reports in both apps

* turned on ability to download underlaying data from all visuals. This allows you to analyze the data presented in any visual in Excel.
* turned on ability to analyze further with KQL on all pages. You can now copy the KQL query that the app use to load data for a page in case the way information is shown in the app is not doing exactly what you want. If you setup extra parameters in the app, you can also open the KQL query directly in the Azure Application Insights portal.
* tuned all KQL queries in the dataset. Impact is up to 5x faster refresh time.

Environment Usage app

On the Usage report

* On page 'Application area', added new visual 'Application area usage by Environments'. This allows partners to see usage of base app features across customers.
* On pages 'Page views', 'Reports', and 'Feature Usage', Added new visuals 'X by Publisher' and 'X by Extension Version'. This makes it easier to see usage patterns across Business Central apps/extensions.

On the Performance report

* On page 'Long running SQL', added visual with info on aad tenants impacted. This makes it easier to see impact across customers.
* New page added: Performance events. This makes it easier to use telemetry event statistics to spot main root cause of a performance, especially if you are dealing with a starvation issue (too many sessions, job queues, web service calls, …)
* New page added: Environment updates. See how fast (or slow) updates are across environments. If update time is getting close to the update window size, consider tuning app updates.

On the Error report

* On page 'Error dialogs', added visuals with info on top/bottom line of the stack trace. Makes it easier to spot the root cause of errors and also to see where a specific error surface
* On page 'Job Queue Errors', added visual with detailed info (including job id and task id) for further troubleshooting. Makes it easier to analyze further in Excel or to go directly to the job queue error log page in Business Central.

On the Administration report

* On Configuration page, changed order of parameter visuals, added EnvironmentDim visual, added visuals for analyze in KQL. Use the configuration page to check if the way you setup parameters for the app match the filters you expect when loading data.

See the full change log here:

https://github.com/microsoft/BCTech/blob/master/samples/AppInsights/PowerBI/Reports/AppSource/environment-app-pbix/changelog.txt

App Usage app

On the Usage report

* On pages 'Page views', 'Reports', and 'Feature Usage', Added new visuals 'X by Publisher' and 'X by Extension Version'. This makes it easier to see usage patterns across Business Central apps/extensions.
* On pages 'Clients', 'Locations', 'Reports', 'Feature Usage', 'Integrations', 'Keyvault' added new visuals 'X by app'. This makes it easier to see usage patterns across Business Central apps/extensions.

On the Error report

* On page 'Error dialogs', added visuals with info on top/bottom line of the stack trace. Makes it easier to spot the root cause of errors and also to see where a specific error surface

On the Performance report

* on the Long Running SQL page, added 'number of columns' and 'Take locks' fields to SQL statements visual. Makes it easier to troubleshoot SQL performance.
* Added ability to do version-to-version comparisons on 'Updates' page

On the Administration report

* on Inventory page, added domain to 'Apps by environment' visual (GitHub issue #146)
* on AppsourceValidations page, added date filter and 'requests by date' visual (GitHub issue #162)
* on the Configuration page, changed order of parameter visuals, added EnvironmentDim visual, added visuals for analyze in KQL. Use the configuration page to check if the way you setup parameters for the app match the filters you expect when loading data.
* Added hierarchy, message details, and feature telemetry dimension for events on telemetry event statistics page. Use this page to understand telemetry data ingestion patterns and maybe use this to fine-tune your telemetry cost.

See the full change log here:

https://github.com/microsoft/BCTech/blob/master/samples/AppInsights/PowerBI/Reports/AppSource/isv-app-pbix/changelog-isv-app.txt

**New signal/updates**

As of version 21.0, page view data from the client is also available for on-premises environments.

In version 21.1, we added event LC0056. This is sent during extension synchronization when an extension was already synchronized on the tenant. Before, the extension failure telemetry included this event, which would clutter the picture for when real errors occurred.

Coming soon/in the works

* AL stack trace will be added to job queue error signal
* Error message in English will be added to error dialog signal

**Documentation improvements**

We recently moved a lot of guidance content from BCTech into docs.

How to control telemetry cost (now also includes guidance on the Data Collection Rules feature)

<https://learn.microsoft.com/en-us/dynamics365/business-central/dev-itpro/administration/telemetry-control-cost>

Where can I learn more about KQL?

<https://learn.microsoft.com/en-us/dynamics365/business-central/dev-itpro/administration/telemetry-analyze-with-kql#where-can-i-learn-more-about-kql>

Which tools can I use (KQL editors and clients)?

<https://learn.microsoft.com/en-us/dynamics365/business-central/dev-itpro/administration/telemetry-analyze-with-kql#which-tools-can-i-use-kql-editors-and-clients>

How do I use Kusto Explorer/Azure Data Explorer with Azure Application Insights?

<https://learn.microsoft.com/en-us/azure/data-explorer/query-monitor-data#add-a-log-analyticsapplication-insights-workspace-to-azure-data-explorer-client-tools>

**Tips and Tricks**

If you use Kusto Explorer/Azure Data Explorer to query telemetry,

then you can specify https://ade.applicationinsights.io/subscriptions/<subscription-id> to see all databases in the subscription

(We made the Azure Monitor team add this to their docs, see

<https://learn.microsoft.com/en-us/azure/data-explorer/query-monitor-data#add-a-log-analyticsapplication-insights-workspace-to-azure-data-explorer-client-tools>

)

Here is a KQL performance tuning trick: When doing queries like this

traces

| where customDimensions.eventId == 'XXXX'

change to this style

traces

| where customDimensions has 'XXXX'

| where customDimensions.eventId == 'XXXX'

The reason for this is that the customDimensions column is of type dynamic (a text field that is also a json structure). The customDimensions column can be searched with the has operator without the need to parse the json. This allows the Kusto query engine to filter away rows that would not fit anyway. Then when you filter on customDimensions.eventId (which will need json parsing), the number of rows where this operation is needed is much lower.

I learned this trick from the KQL performance guide, see

https://learn.microsoft.com/en-us/azure/data-explorer/kusto/query/best-practices#:~:text=Lookup%20for%20rare,of%20the%20rest.