

 Microsoft Dynamics 365

Dynamics 365 Business Central

Deepdive and Tips & Tricks

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Agenda

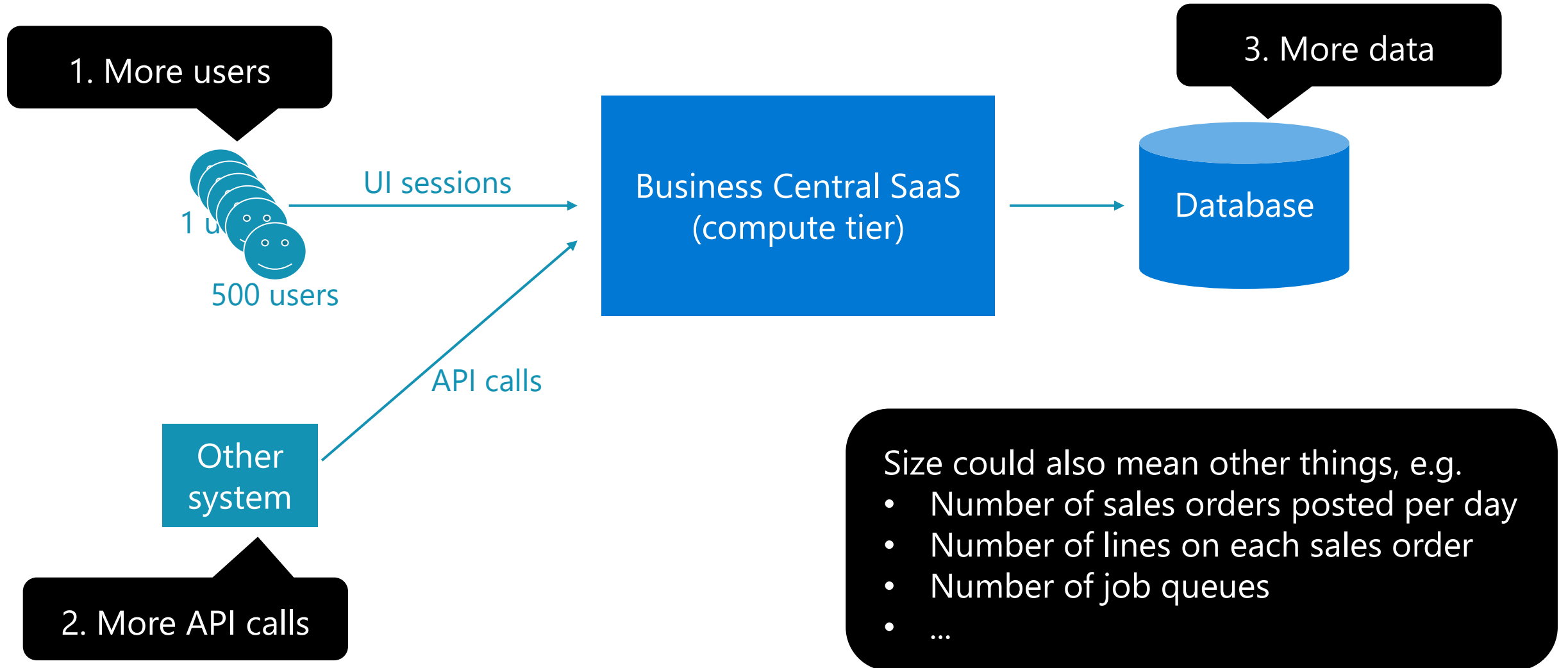
How we manage the engine room
and build for scale and tools for
troubleshooting

Optimize your workspace

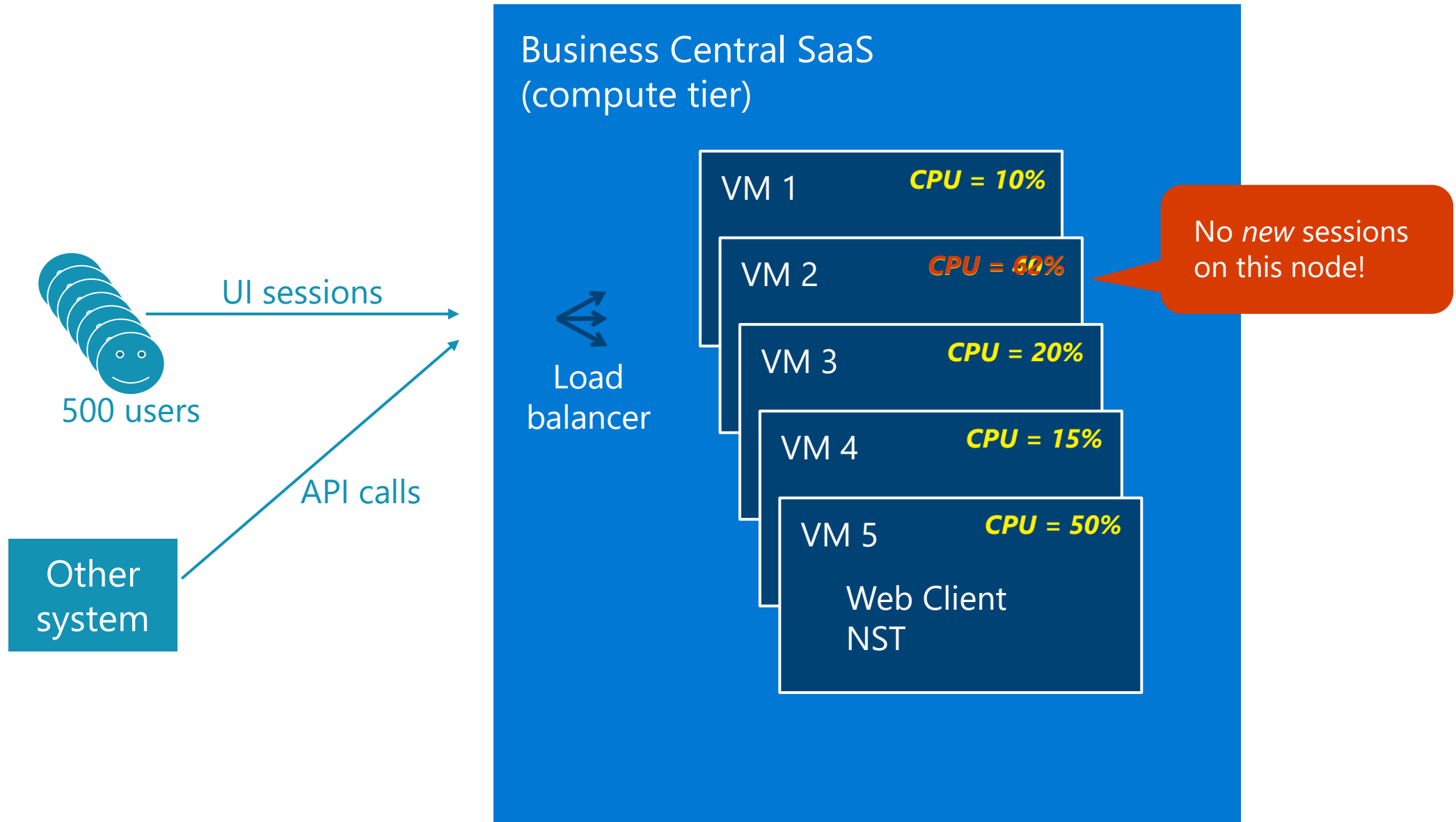
Teams tricks

How we manage the engine room and build for scale
and tools for trouble shooting

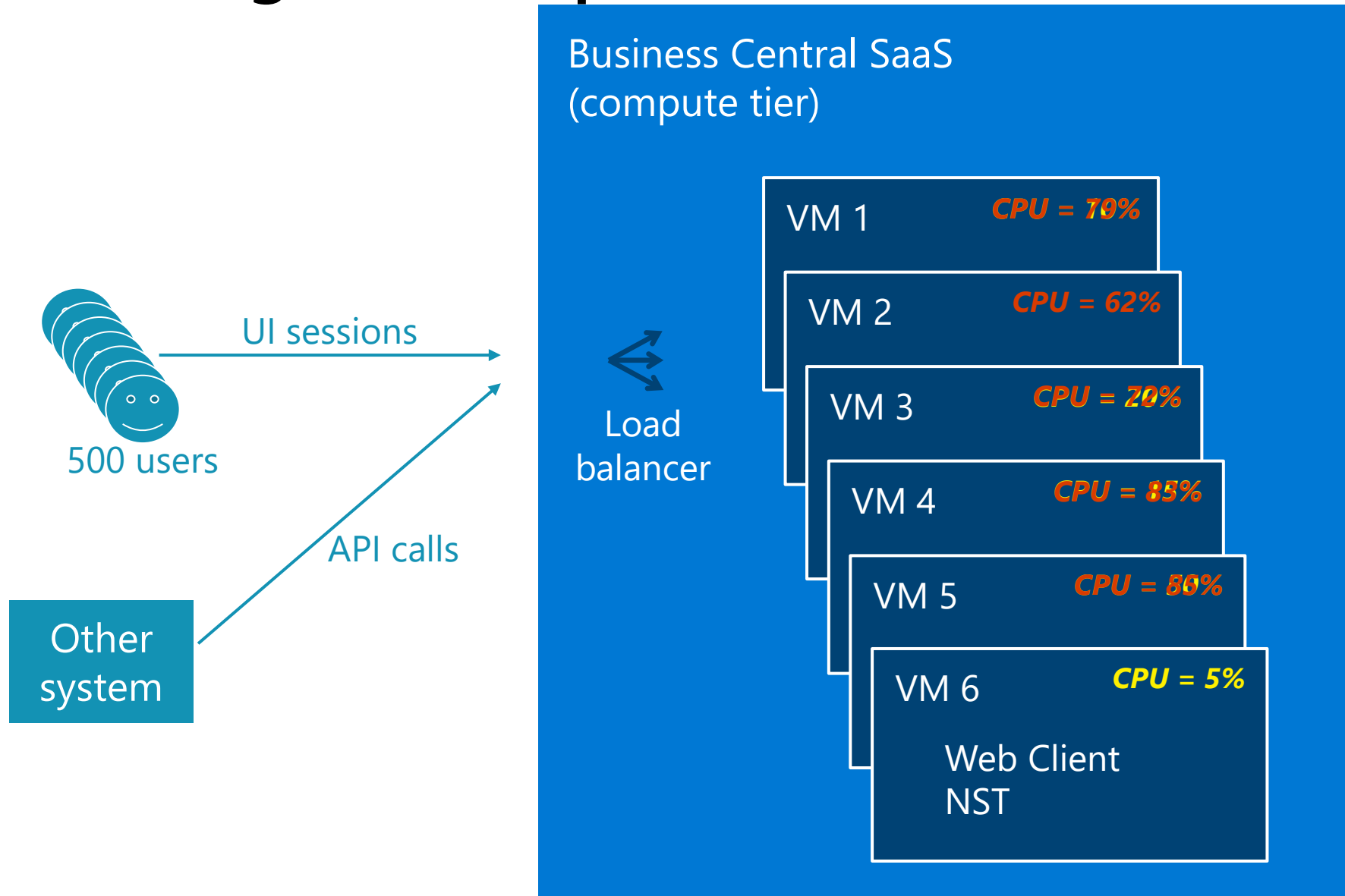
What are we facing – and what causes a larger load on the servers



Handling heavy load in the compute tier



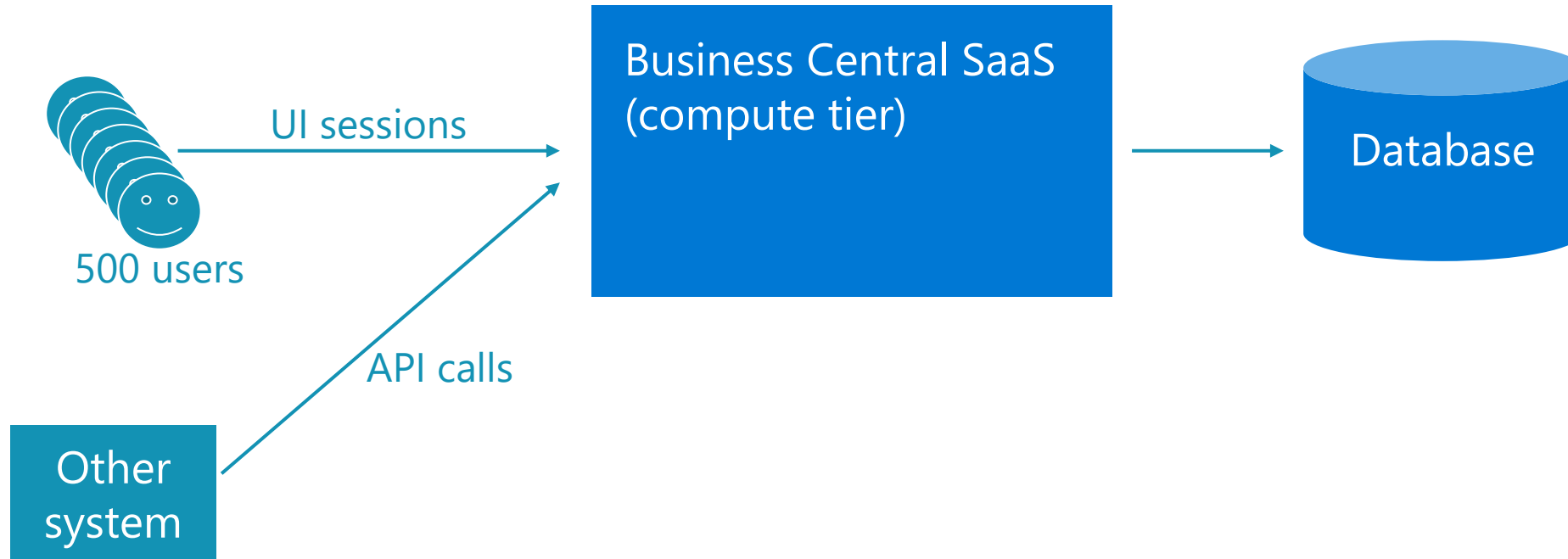
Auto-scaling the compute cluster



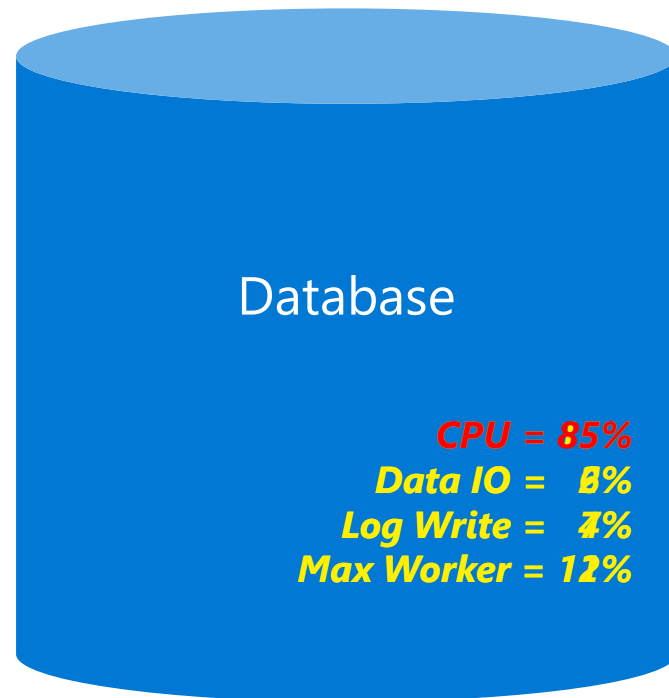
Scalability in compute tier – summary

- BC SaaS is designed to scale
 - Spreads the load across multiple VMs
 - Adds more VMs when needed
- It is Microsoft's responsibility to handle this

Bottlenecks



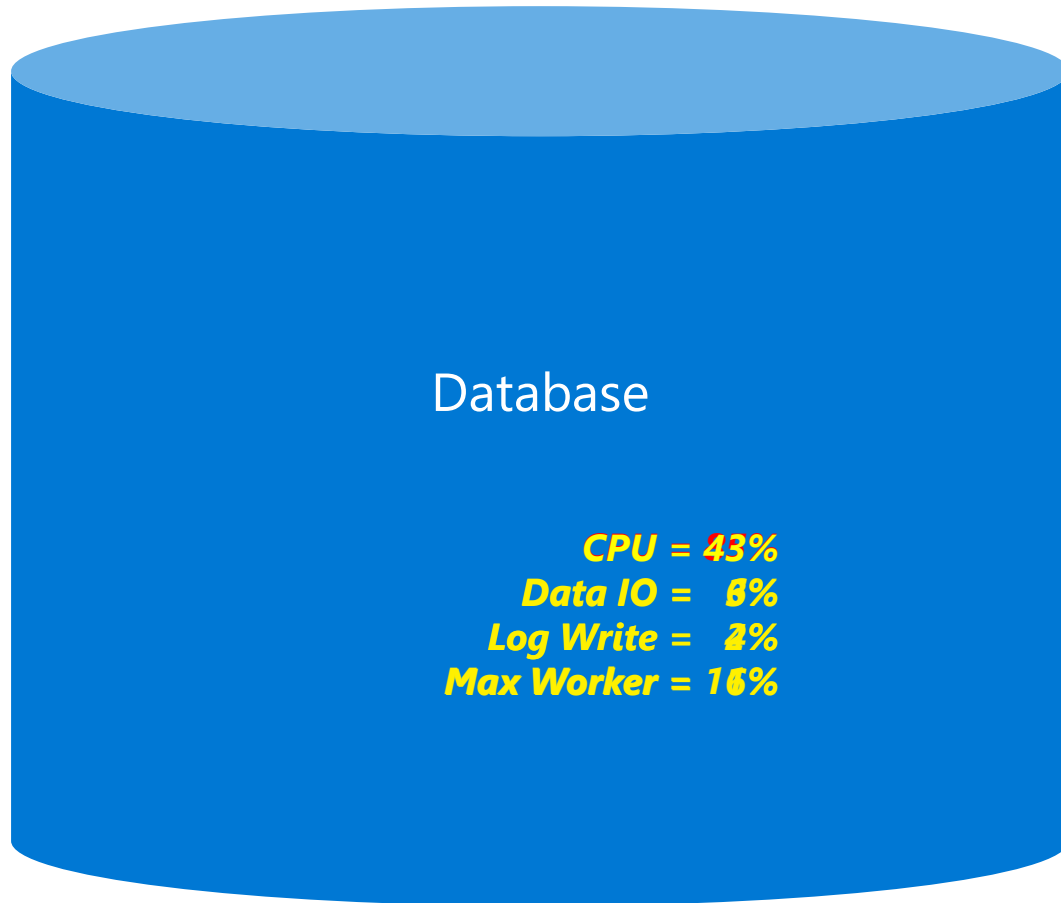
What is the "load" on a database?



We consider a database to be "overloaded" if any one of these is > 80%.

If a database is overloaded too much of the time, we add more capacity to it.

Allocating more capacity to a database

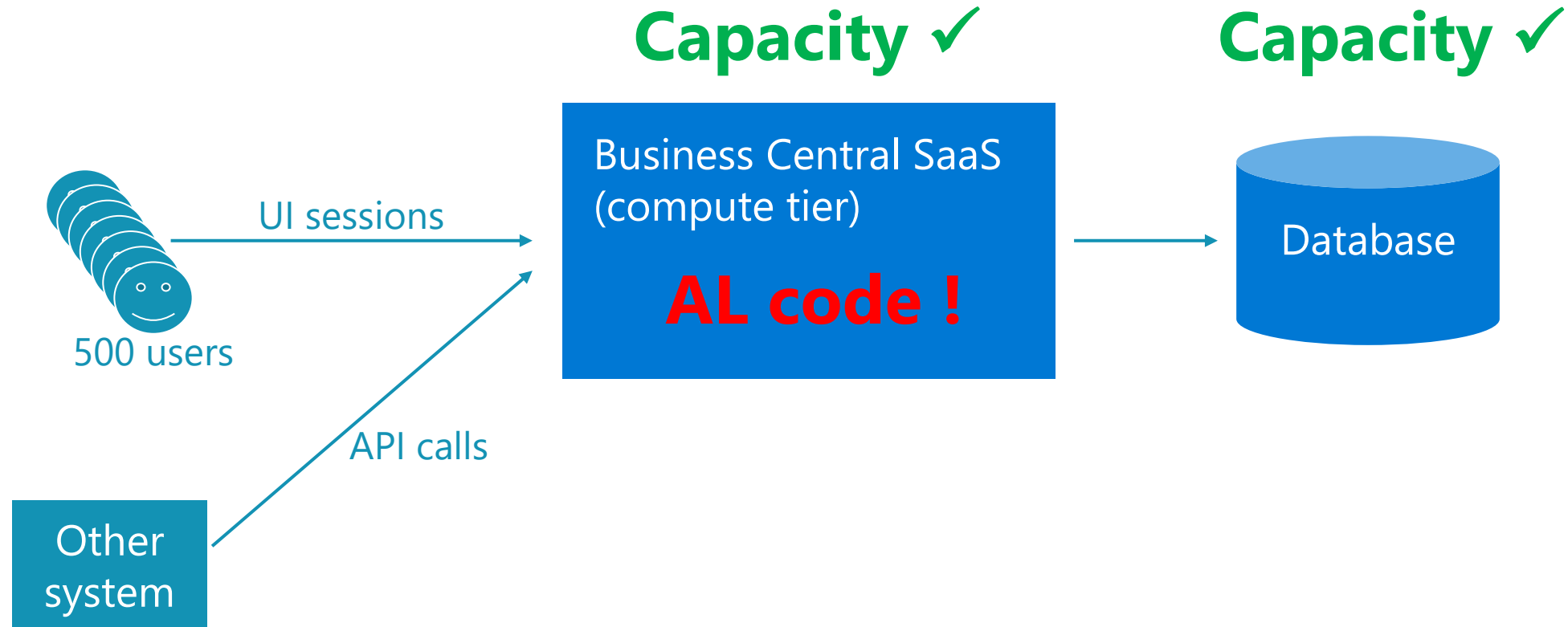


Scalability in database tier – summary

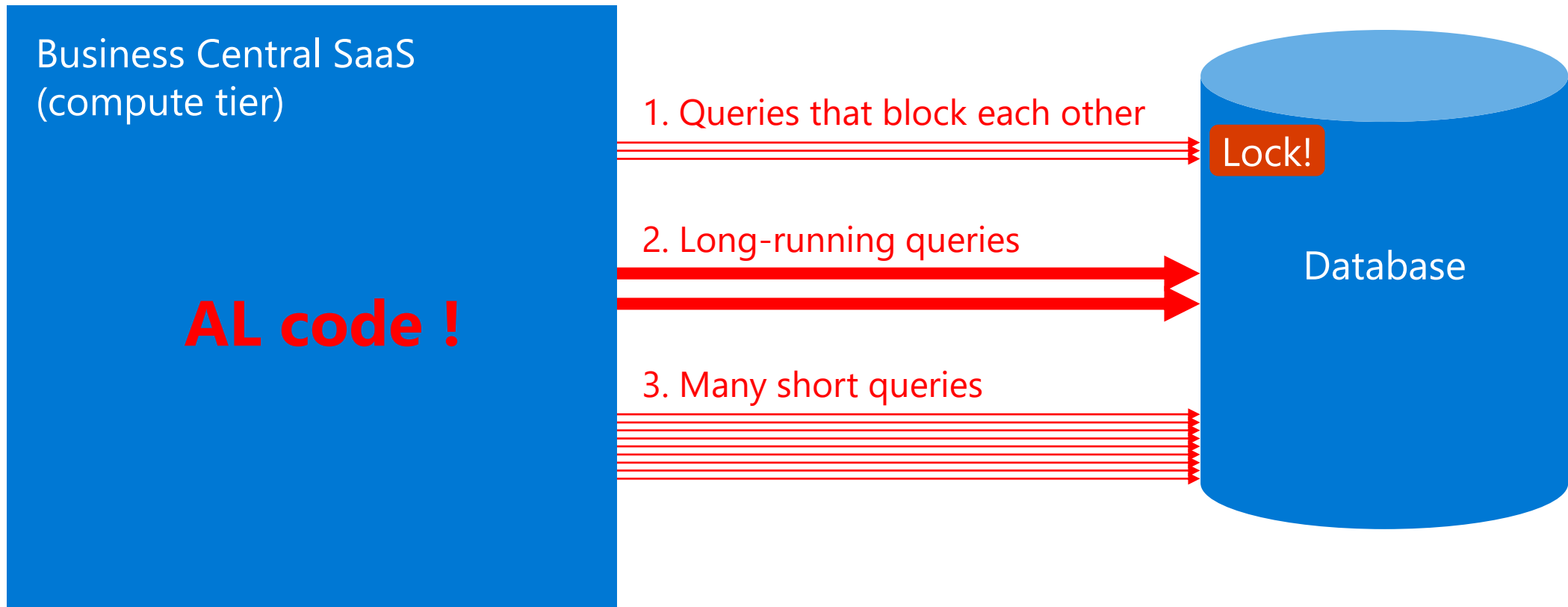
- BC SaaS is designed to scale
 - Adds more database capacity when needed
- It is Microsoft's responsibility to handle this

Where can bottlenecks occur and how to diagnose
Tools of the trade

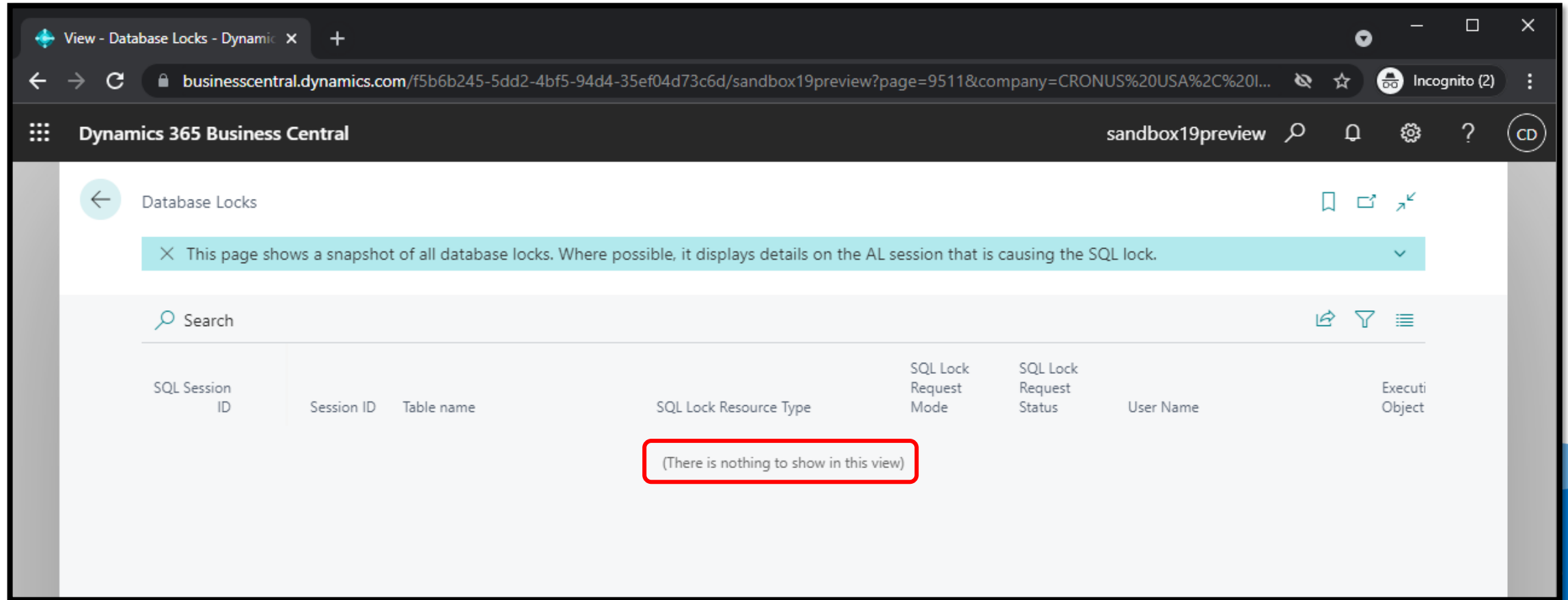
Where is higher scale typically a problem?



AL patterns that get worse with scale



How to troubleshoot database locking issues (1)?

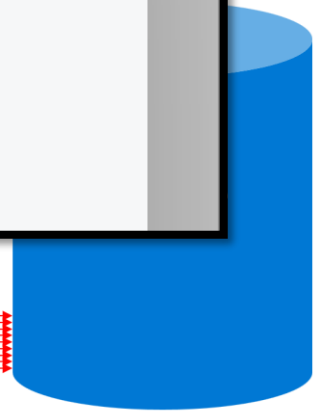


The screenshot shows a web browser window displaying the 'Database Locks' view in Dynamics 365 Business Central. The browser's address bar shows the URL: `businesscentral.dynamics.com/f5b6b245-5dd2-4bf5-94d4-35ef04d73c6d/sandbox19preview?page=9511&company=CRONUS%20USA%2C%20I...`. The page title is 'Database Locks'. A teal notification bar at the top states: 'This page shows a snapshot of all database locks. Where possible, it displays details on the AL session that is causing the SQL lock.' Below this is a search bar and a table with the following columns: 'SQL Session ID', 'Session ID', 'Table name', 'SQL Lock Resource Type', 'SQL Lock Request Mode', 'SQL Lock Request Status', 'User Name', and 'Executi Object'. The table is currently empty, and a red box highlights the text '(There is nothing to show in this view)' centered in the table area.

AL CODE!

3. Many short queries

Worse in SaaS



How to trou

Application Ins

- Long-Running
- Many Short O
- Only when Addit

timestamp [UTC]	message	severityLevel	itemType	customDimensions
10/11/2021, 11:20:11.482 A...	Executed a SQL statement.	0	trace	{"extensionVersion":"19.0.29894.30693","extensi
10/11/2021, 11:20:11.482 A...	Executed a SQL statement.	0	trace	{"extensionVersion":"19.0.29894.30693","extensi
10/11/2021, 11:20:11.467 A...	Executed a SQL statement.	0	trace	{"extensionVersion":"19.0.29894.30693","extensi
timestamp [UTC]	2021-10-11T11:20:11.467Z			
message	Executed a SQL statement.			
severityLevel	0			
itemType	trace			
customDimensions	{"extensionVersion":"19.0.29894.30693","extensionId":"437dbf0e-84ff-417a-965d-ed2bb9650972","extensionPublisher":"Microsoft",			
aadTenantId	f5b6b245-5dd2-4bf5-94d4-35ef04d73c6d			
alObjectId	25			
alObjectName	Customer Ledger Entries			
alObjectType	Page			
alStackTrace	AppObjectType: Page AppObjectId: 25 AL CallStack: "Customer Ledger Entries"(Page 25).OnOpenPage(Trigger) line 6 - Base Application by Microsoft			
clientType	WebClient			
companyName	CRONUS USA, Inc.			
component	Dynamics 365 Business Central Server			
componentVersion	19.0.29480.29534			
environmentName	sandbox19preview			
environmentType	Sandbox			
eventId	RT0009			
executionTime	00:00:00.0040000			
extensionId	437dbf0e-84ff-417a-965d-ed2bb9650972			
extensionName	Base Application			
extensionPublisher	Microsoft			
extensionVersion	19.0.29894.30693			
sqlStatement	SELECT TOP (1) "Cust_Ledger Entry"."timestamp" AS "timestamp","Cust_Ledger Entry"."Entry No_" AS "Entry No_","Cust Le			

How to troubleshoot performance issues in general?

- Two main tools:
 - AL Profiler
 - Application Insights

TROUBLESHOOTING AND DEBUGGING BUSINESS CENTRAL ONLINE (CLOUD)

Date: Friday, October 29, 2021 | From: 11:45:00 to 12:30:00 | Room: AMBER5+6 | Session Owner: Microsoft

In this session we will take you through various tools and processes to investigate, troubleshoot and debug Business Central online (cloud version). We will cover telemetry, normal debugger, snapshots, new source code access control and AL performance profiler.

BOOST YOUR TROUBLESHOOTING ON BUSINESS CENTRAL SAAS USING TELEMETRIES IN REAL LIFE SCENARIOS.

Date: Wednesday, October 27, 2021 | From: 17:00:00 to 17:45:00 | Room: CORAL 2 | Session Owner:

Troubleshooting problems in a cloud environment is not so easy as in the past and using telemetry is a must for every partner. Whether running Business Central online or on-premises, you can set up your tenants to send telemetry data to Azure Application Insights. But how can you use those telemetry data at best? How can you discover problems on your SaaS tenant and react accordingly? What are the common pitfalls that you can have on cloud? This session will go in-depth into Azure Application Insights telemetry showing "real life" common problems (such as extensions lifecycle, OData or report performances and more) and we'll see how to solve those problems by analyzing telemetry data in a proficient way.

If y

• Us

The screenshot shows a web browser window with the URL <https://docs.microsoft.com/en-us/dynamics365/business-central/dev-itpro/developer/devenv-performance-toolkit>. The page header includes the Microsoft logo, navigation links for Docs, Documentation, Learn, Q&A, and Code Samples, a search bar, and a Sign in button. Below the header, there are links for Dynamics 365, Get Dynamics 365, Release plans, Support, Regional availability, Trust Center, and AppSource. The breadcrumb trail reads: Dynamics 365 / Business Central / Developer and Admin / Development / Testing the Application / The Performance Toolkit Extension. On the right side, there are options to Save, Feedback, Edit, and Share. The main content area is partially visible, showing the title "The Performance Toolkit Extension" and a filter box.

HOW TO GAIN CUSTOMER CONFIDENCE USING THE PERFORMANCE TOOLKIT

Date: Thursday, October 28, 2021 | From: 11:00:00 to 11:45:00 | Room: CORAL 4 | Session Owner: Microsoft

Join this session to learn about common concerns around customer's performance moving to the cloud and what can be done to validate these.

• Re

• Id

• C

The screenshot shows the main content of the documentation page. On the left is a navigation menu with the following items: Queries, Interfaces, XMLports, Customizing for User Roles, Profiles, Linking to the Web Client and App, Formatting Data, Translations, Developing for the Business Central Mobile App, and Instrumenting for Telemetry. The main text area contains the following content: "introduce performance regressions as the volume of users grows. To help, the Performance Toolkit lets developers simulate workloads in realistic scenarios to compare performance between builds of their solutions." Below this is a red-bordered box containing the text: "In short, the Performance Toolkit helps answer questions such as, 'Does my solution for Business Central support X number of users doing this, that, and the other thing at the same time?' It doesn't answer questions such as, 'How many orders can Business Central process per hour?'" Below the red box is a blue callout box with an information icon and the text: "Important You can use the toolkit only in sandbox environments and Docker images. You cannot use it in a production tenant." On the right side, there is a table of contents with the following items: Single and Multiple Sessions, Running in the Background and Foreground, Configuring a Suite, Starting the Run from PowerShell, Analyzing Results, Troubleshooting log entries, Example: Evaluate SQL calls and timing in Single Run mode, and To run a test in.

Optimize your workspace

Be more effective

- Notifications
- Save filters
- Bookmark
- Set tab order
- Page Inspection (See field values that are not on the page/list)

Dynamics 365 Business Central

CRONUS USA, Inc. | Finance | Cash Management | Sales | Purchasing

Items: All | Search | + New | Delete | Process | Item | Prices & Discounts | Request Approval | ...

× You can get the sales forecast updated automatically every week. Set Up Scheduled Forecasting | Don't ask again

No. ↑	Description	Type	Quantity on Hand	Substi... Exist	Assem... BOM	Base Unit of Measure	Cost is Adj...	Unit Cost	Unit Price	Vendor No
1896-S	ATHENS Desk	Inventory	4	No	No	PCS	☑	780.70	1,000.80	30000
1900-S	PARIS Guest Chair, black	Inventory	0	No	No	PCS	☑	150.30	192.80	20000
1906-S	ATHENS Mobile Pedestal	Inventory	5	No	No	PCS	☑	338.20	433.60	30000
1908-S	LONDON Swivel Chair, blue	Inventory	3	No	No	PCS	☑	148.10	190.10	30000
1920-S	ANTWERP Conference Table	Inventory	10	No	No	PCS	☑	505.40	647.80	20000
1925-W	Conference Bundle 1-6	Inventory	0	No	Yes	PCS	☑	0.00	188.80	
1928-S	AMSTERDAM Lamp	Inventory	8	No	No	PCS	☑	42.80	54.90	10000
1929-W	Conference Bundle 1-8	Inventory	0	No	Yes	PCS	☑	0.00	233.80	
1936-S	BERLIN Guest Chair, yellow	Inventory	100	No	No	PCS	☑	150.30	192.80	20000
1953-W	Guest Section 1	Inventory	-49	No	Yes	PCS	☑	0.00	125.80	
1960-S	ROME Guest Chair, green	Inventory	2	No	No	PCS	☑	150.30	192.80	20000

Dynamics 365 Business Central

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1928-S	AMSTERDAM Lamp	Inventory	8	No	No	PCS	☑	42.80	54.90	10000
1929-W	Conference Bundle 1-8	Inventory	0	No	Yes	PCS	☑	0.00	233.80	
1936-S	BERLIN Guest Chair, yellow	Inventory	100	No	No	PCS	☑	150.30	192.80	20000
1953-W	Guest Section 1	Inventory	-49	No	Yes	PCS	☑	0.00	125.80	
1960-S	ROME Guest Chair, green	Inventory	2	No	No	PCS	☑	150.30	192.80	20000
1964-S	TOKYO Guest Chair, blue	Inventory	4	No	No	PCS	☑	150.30	192.80	20000
1965-W	Conference Bundle 2-8	Inventory	-81	No	Yes	PCS	☑	0.00	233.80	
1968-S	MEXICO Swivel Chair, black	Inventory	10	Yes	No	PCS	☑	148.10	190.10	30000
1969-W	Conference Package 1	Inventory	-7	No	Yes	PCS	☑	0.00	341.80	

Page Inspection

See information about the page, its different elements, and the source behind the data it displays.

Page

- Item List (31, List)

Table

- Item (27)

View table

Table Fields | Extensions | Page Filters

No. (1, Code, PK)
1896-S
Base Application

No. 2 (2, Code)
(Blank)
Base Application

Description (3, Text)
ATHENS Desk
Base Application

Search Description (4, Code)
ATHENS DESK
Base Application

Description 2 (5, Text)

More possibilities with Teams

Collaborate in Teams

- Share from Teams
- Insert BC data into Teams
- Create lists in Teams

The screenshot shows the Dynamics 365 Business Central interface for 'CRONUS USA, Inc.'. A table lists various chair items. The 'PARIS Guest Chair, black' item (Item No. 1900-S) is selected. A context menu is open over this item, with 'Open in Excel', 'Edit in Excel', and 'Share to Teams' options highlighted. The 'Item Details - Invoicing' pane is visible on the right, showing fields like Item No., Costing Method, and Unit Price.

No.	Description	Type	Quantity on Hand	Substl... Exist	Assem... BOC	Production BOC No.
1900-S	PARIS Guest Chair, black	Inventory	0	No	No	
1908-S	LONDON Swivel Chair, blue	Inventory	3	No	No	
1936-S	BERLIN Guest Chair, yellow	Inventory	100	No	No	
1960-S	ROME Guest Chair, green	Inventory	2	No	No	
1964-S	TOKYO Guest Chair, blue	Inventory	4	No	No	
1968-S	MEXICO Swivel Chair, black	Inventory	10	Yes	No	
1972-S	MUNICH Swivel Chair, yellow	Inventory	0	No	No	
1980-S	MOSCOW Swivel Chair, red	Inventory	0	Yes	No	
1988-S	SEOUL Guest Chair, red	Inventory	0	Yes	No	
2000-S	SYDNEY Swivel Chair, green	Inventory	38	No	No	

The screenshot shows the same Dynamics 365 Business Central interface, but with the 'Share to Microsoft Teams' dialog box open. The dialog box contains a 'Share to' field with 'Contoso All > General' selected, a text area with a message, and a 'Share' button. The background shows the same table of chairs and the 'Item Details - Invoicing' pane.

Share to Microsoft Teams

Share to: Contoso All > General

Say something about this:

I've entered the new chairs and would like to get your input.
Alex Wilber could you also comment on the unit price

<https://businesscentral.dynamics.com/production/US/?company=CRONUS%20USA%2c%20inc.&page=31&filter=Item.Description%20S%20927%40chair%927>

Share

Thank you!



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