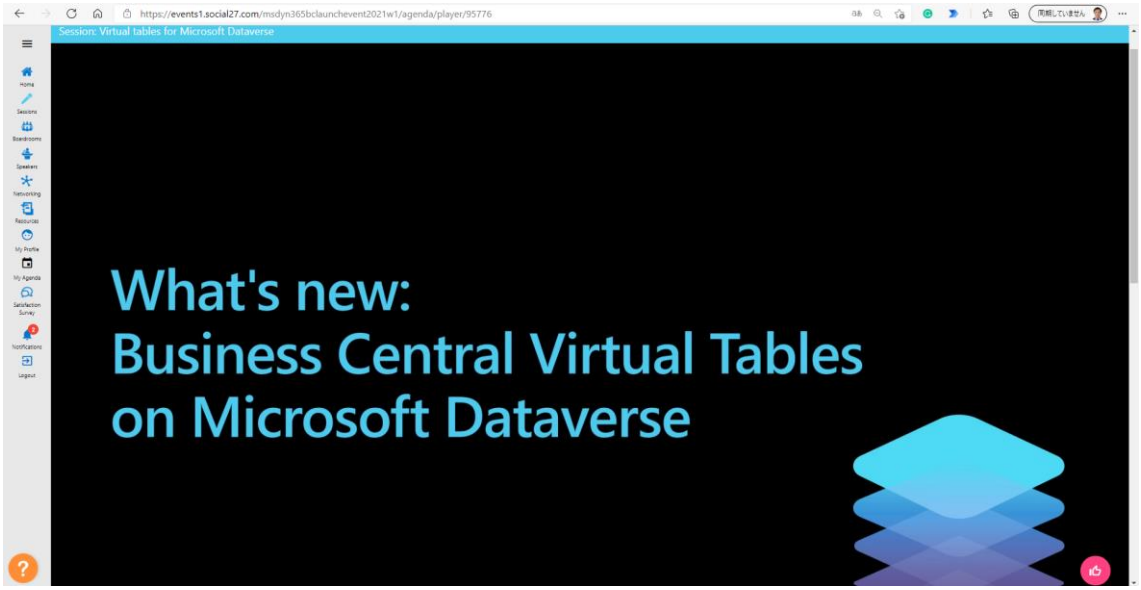
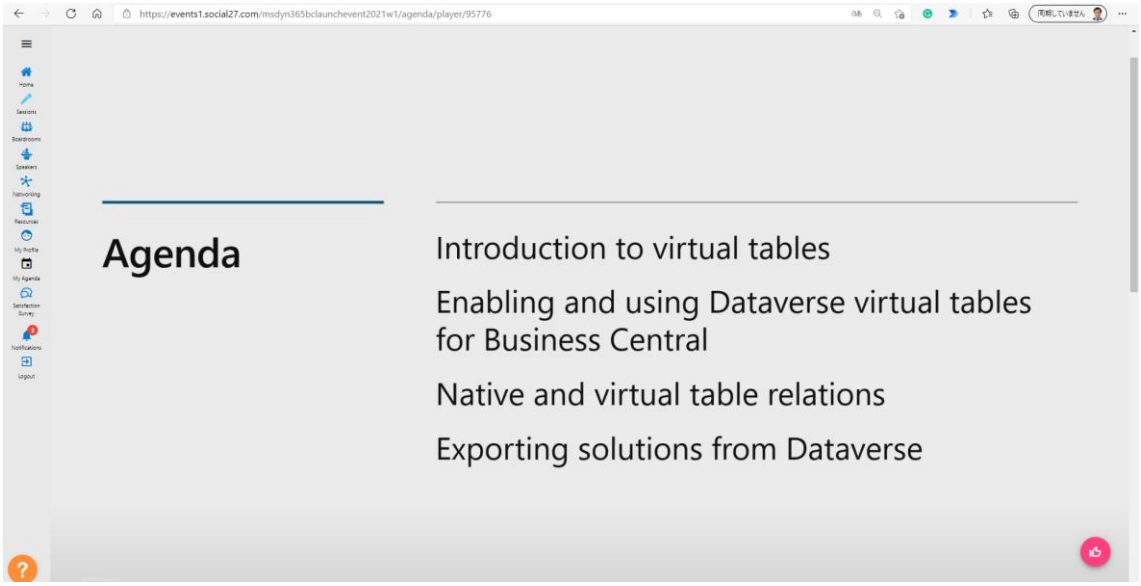
Virtual tables for Microsoft Dataverse



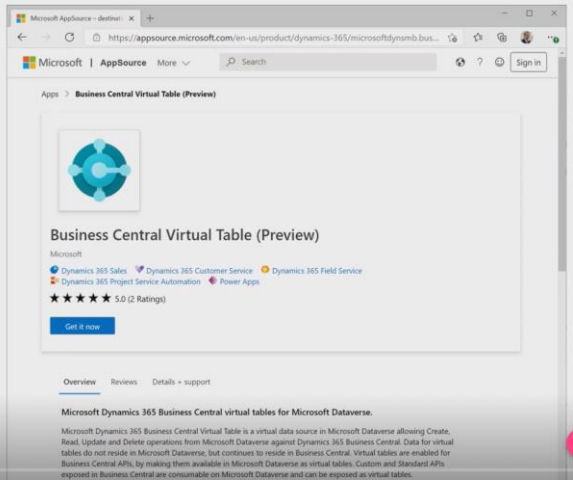


Business Central Virtual tables

- Business Central Virtual tables is a virtual data provider on Dataverse
- Supports create, read, update and delete on Business Central tables
- No data will be synchronized to Microsoft Dataverse
- Business Central API metadata and entityDefinition API are used to generate virtual tables
- Custom APIs can be used for virtual tables, enabling partners to create specialized virtual tables

Setting up connection to Business Central

- Install Business Central Virtual table preview from Appsource
- First grant access to Dataverse on “Azure Active Directory Applications” page in Business Central
- Setup connection on Dataverse
  - “Business Central Virtual Data Source Configuration” table
  - or “Virtual Table Data Sources” settings
- Choose environment and save
- Once saved, Business Central synchronizes companies. Choose a company



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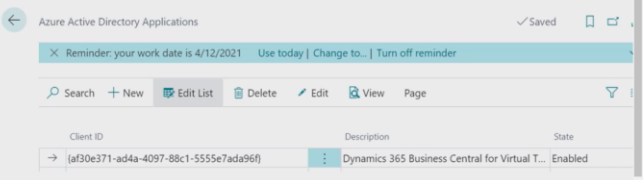
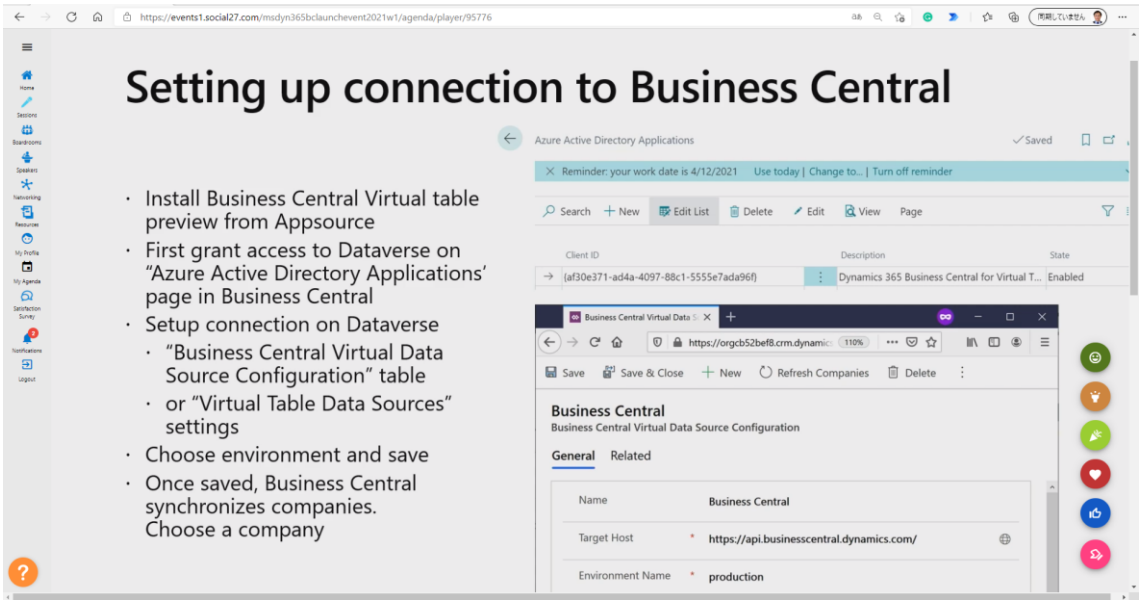
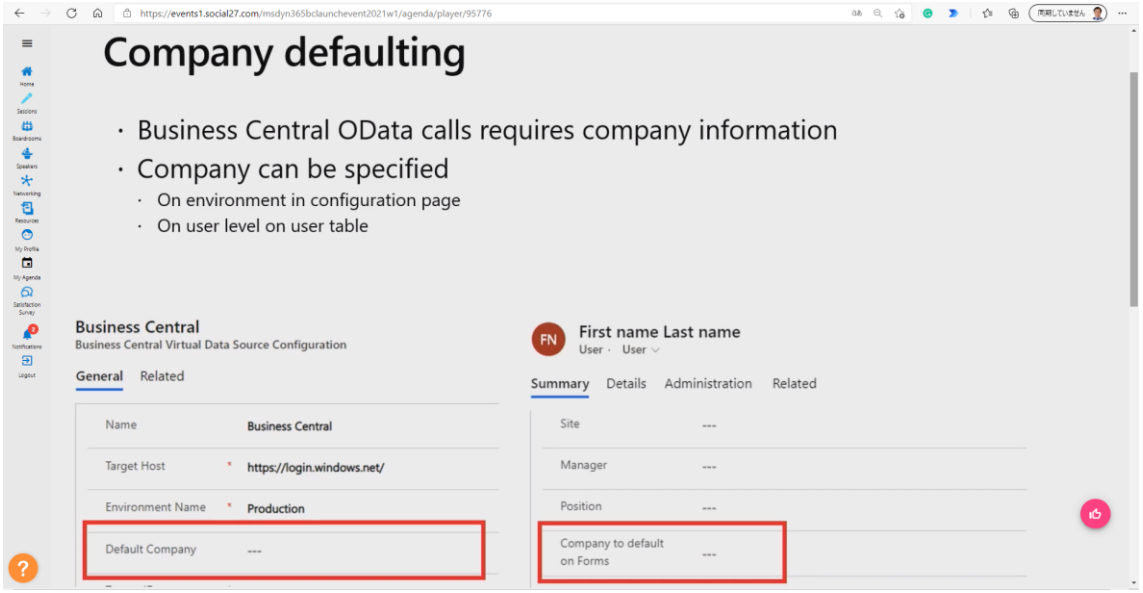



https://events1.social27.com/msdyn365bclaunchevent2021w1/agenda/player/95776
Setting up connection to Business Central
Install Business Central Virtual table preview from Appsource
First grant access to Dataverse on "Azure Active Directory Applications' page in Business Central
Setup connection on Dataverse
"Business Central Virtual Data Source Configuration" table
or "Virtual Table Data Sources" settings
Choose environment and save
Once saved, Business Central synchronizes companies. Choose a company
Azure Active Directory Applications
Saved
Reminder: your work date is 4/12/2021 Use today | Change to... | Turn off reminder
Search New Edit List Delete Edit View Page
Client ID
Description
State
{af30e371-ad4a-4097-88c1-5555e7ada96f}
Dynamics 365 Business Central for Virtual T...
Enabled
Business Central Virtual Data
https://orgcb52bef8.crm.dynamic
110%
Save Save & Close New Refresh Companies Delete
Business Central
Business Central Virtual Data Source Configuration
General Related
Name
Business Central
Target Host
https://api.businesscentral.dynamics.com/
Environment Name
production


https://events1.social27.com/msdyn365bclaunchevent2021w1/agenda/player/95776
Company defaulting
Business Central OData calls requires company information
Company can be specified
On environment in configuration page
On user level on user table
Business Central
Business Central Virtual Data Source Configuration
General Related
Name
Business Central
Target Host
https://login.windows.net/
Environment Name
Production
Default Company

FN
First name Last name
User · User
Summary Details Administration Related
Site

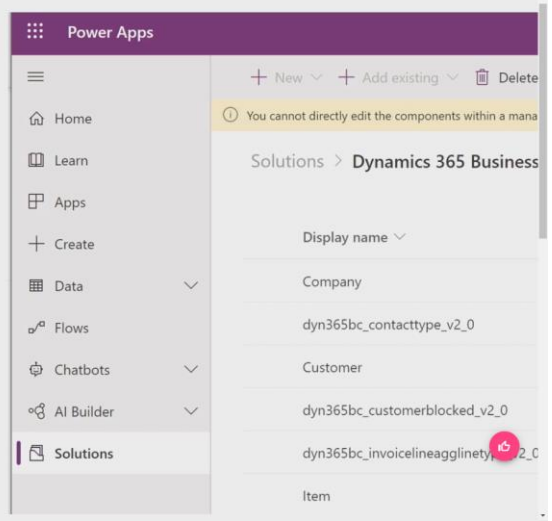
Manager

Position

Company to default on Forms

Generating virtual tables

- Virtual tables are dynamically generated
- Generation is done through “Available Business Central Table” table
- Once generated, virtual tables can be customized from any solution, adding views and forms.



Metadata driven

https://api.businesscentral.dynamics.com/v2.0/production/api/v2.0/$metadata

```
<?xml version="1.0" encoding="utf-8"?>
<edmx:Edmx Version="4.0" xmlns:edmx="http://docs.oasis-open.org/odata/ns/edmx">
    <edmx:DataServices>
        <Schema Namespace="Microsoft.NAV" xmlns="http://docs.oasis-open.org/odata/ns/edm">
            <EntityType Name="entityMetadata">
                <Key>
                    <PropertyRef Name="entityName" />
                </Key>
                <Property Name="entityName" Type="Edm.String" Nullable="false" />
                <Property Name="entitySetName" Type="Edm.String" />
                <Property Name="entityCaptions" Type="Collection(Microsoft.NAV.entityMetadata
                <Property Name="entitySetCaptions" Type="Collection(Microsoft.NAV.entityMetac
                <Property Name="properties" Type="Collection(Microsoft.NAV.entityMetadataFiel
                <Property Name="actions" Type="Collection(Microsoft.NAV.entityMetadataAction)
                <Property Name="enumMembers" Type="Collection(Microsoft.NAV.entityMetadataEnu
            </EntityType>
```

https://api.businesscentral.dynamics.com/v2.0/production/api/v2.0/entityDefinitions

```
{
    "@odata.context": "https://api.businesscentral.dynamics.com/v2.0/production/api/v2.0/
        $metadata#entityDefinitions",
    "value": [
        {
            "entityName": "item",
            "entitySetName": "items",
            "entityCaptions": [
                {
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                },
                {
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```
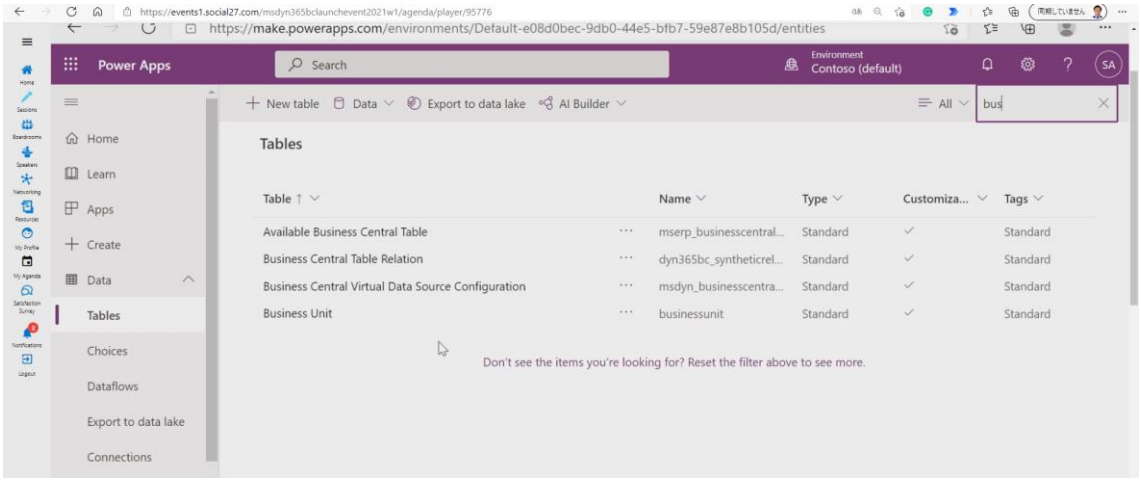

Getting started:
Connecting, generating and querying


https://events1.social27.com/msdyn365bclaunchevent2021w1/agenda/player/95776
https://make.powerapps.com/environments/Default-e08d0bec-9db0-44e5-bfb7-59e87e8b105d/entities
Power Apps
Search
Environment
Contoso (default)
SA
New table
Data
Export to data lake
AI Builder
All
bus
Home
Learn
Apps
Create
Data
Tables
Choices
Dataflows
Export to data lake
Connections
Tables
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Tags
Available Business Central Table
mserp_businesscentral...
Standard
Standard
Business Central Table Relation
dyn365bc_syntheticrel...
Standard
Standard
Business Central Virtual Data Source Configuration
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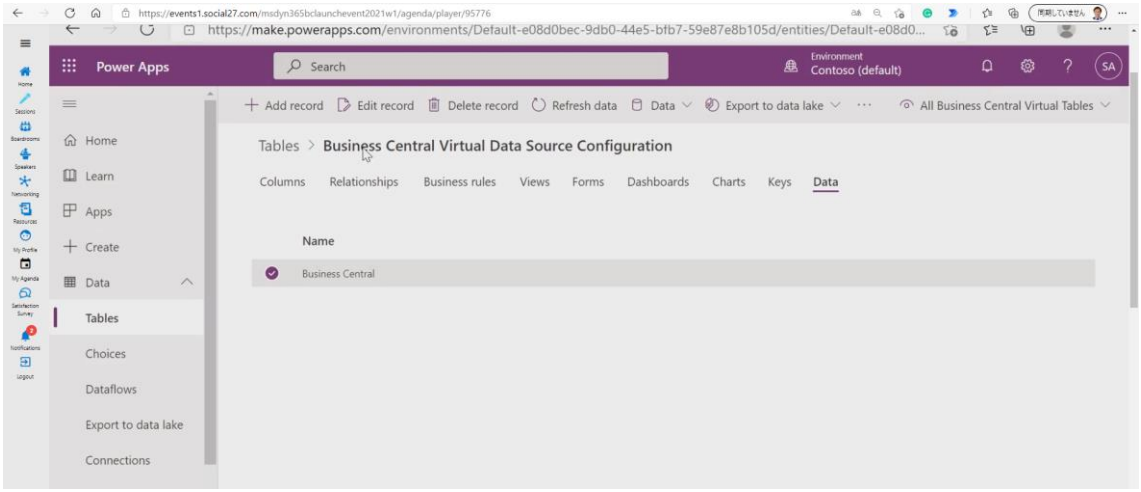
Standard
Standard
Business Unit
businessunit
Standard
Standard
Don't see the items you're looking for? Reset the filter above to see more.

Edit record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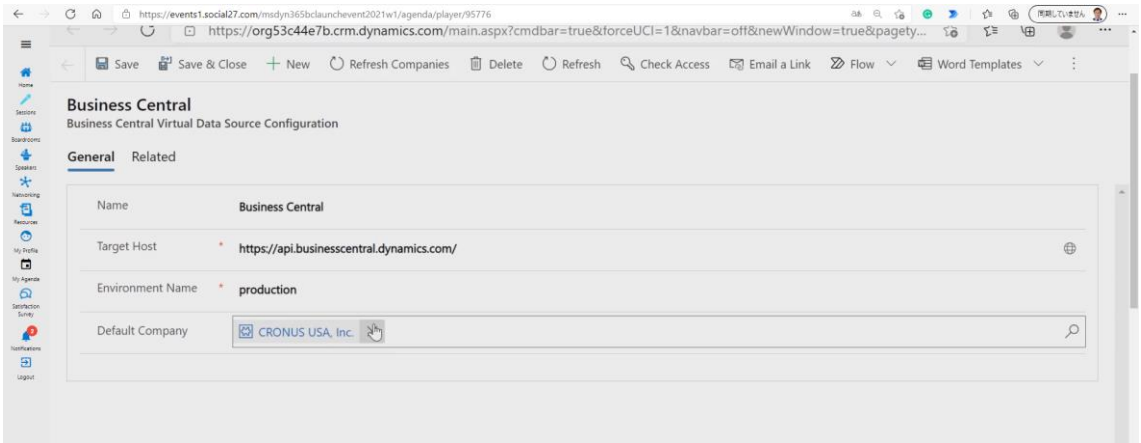
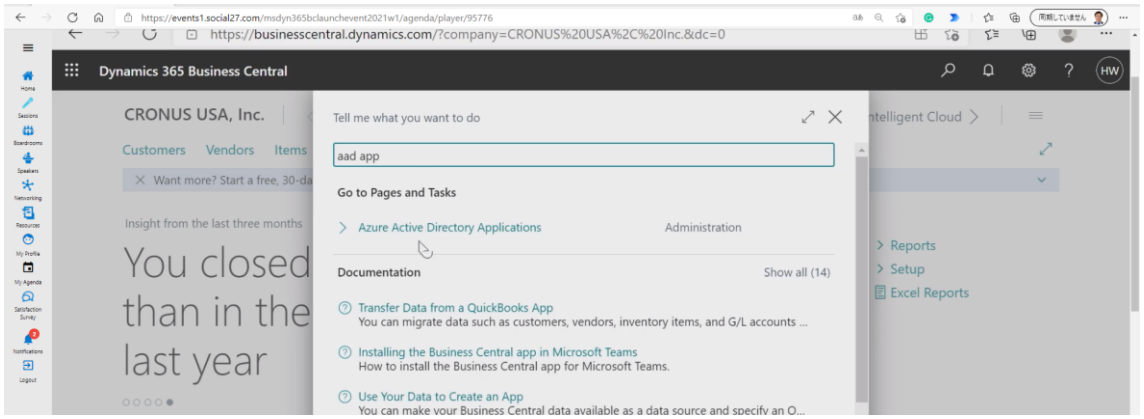
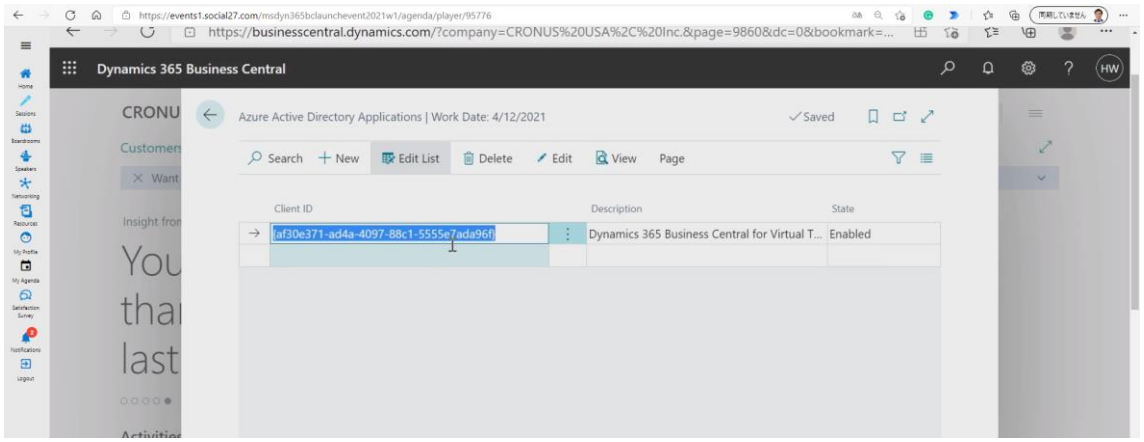
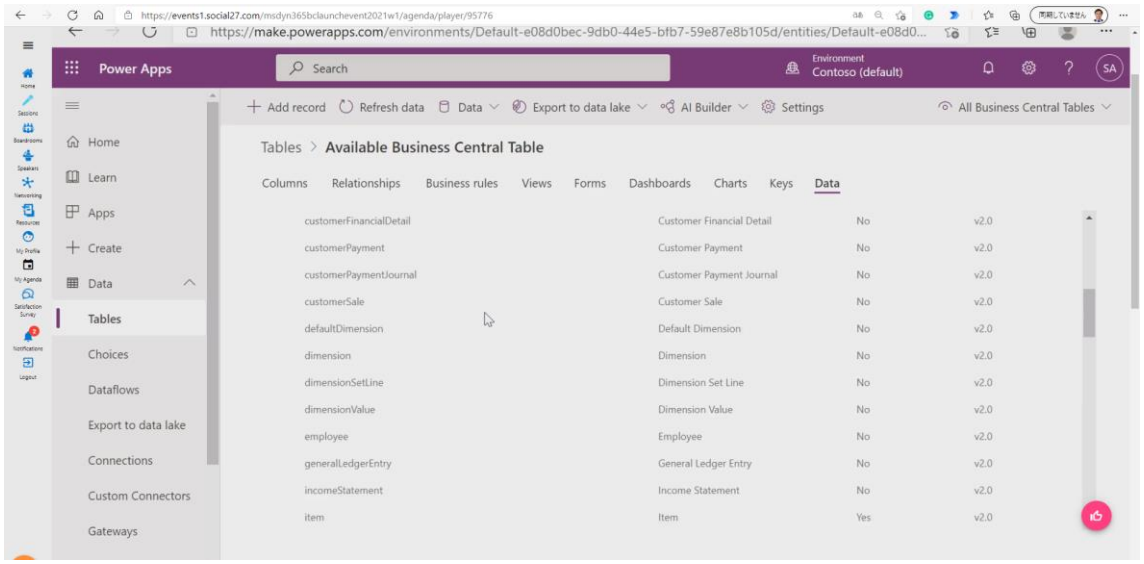
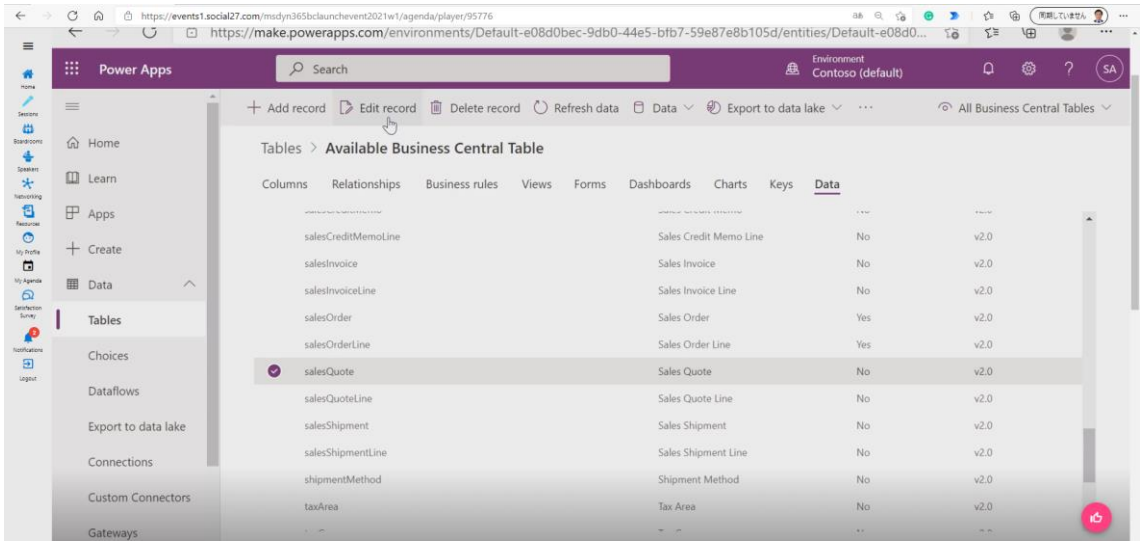
https://make.powerapps.com/environments/Default-e08d0bec-9db0-44e5-bfb7-59e87e8b105d/entities/Default-e08d0...
Power Apps
Search
Environment
Contoso (default)
SA
Add record
Edit record
Delete record
Refresh data
Data
Export to data lake
All Business Central Virtual Tables
Home
Learn
Apps
Create
Data
Tables
Choices
Dataflows
Export to data lake
Connections
Tables
Business Central Virtual Data Source Configuration
Columns
Relationships
Business rules
Views
Forms
Dashboards
Charts
Keys
Data
Name
Business Central

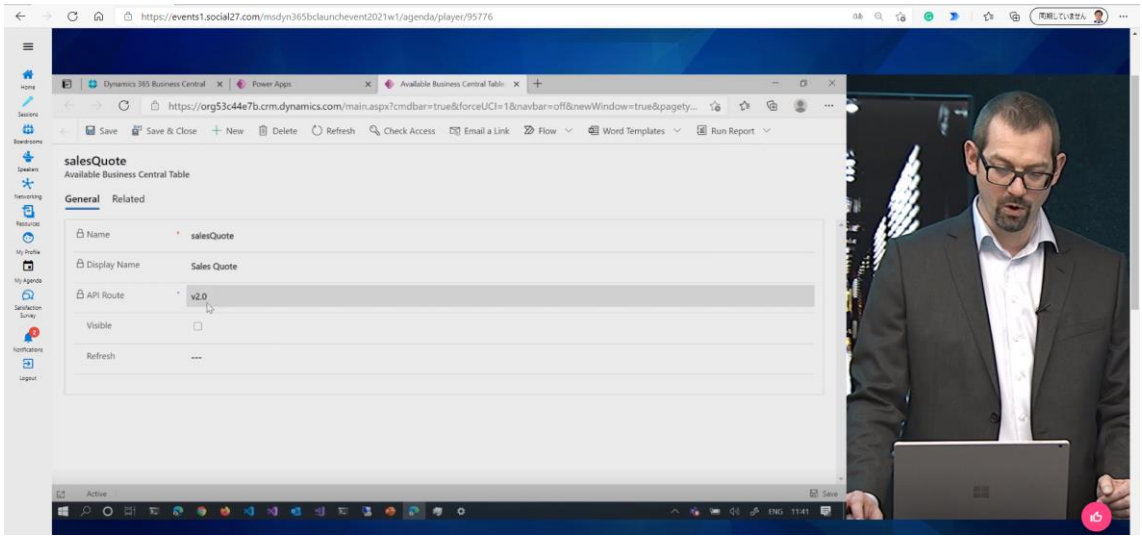

https://events1.social27.com/msdyn365bclaunchevent2021w1/agenda/player/95776
https://org53c44e7b.crm.dynamics.com/main.aspx?cmdbar=true&forceUCI=1&navbar=off&newWindow=true&pagety...
Save
Save & Close
New
Refresh Companies
Delete
Refresh
Check Access
Email a Link
Flow
Word Templates
Business Central
Business Central Virtual Data Source Configuration
General
Related
Name
Business Central
Target Host
https://api.businesscentral.dynamics.com/
Environment Name
production
Default Company
CRONUS USA, Inc.


Dynamics 365 Business Central
CRONUS USA, Inc.
Tell me what you want to do
aad app
Go to Pages and Tasks
Azure Active Directory Applications
Administration
Documentation
Show all (14)
Transcribe Data from a QuickBooks App
You can migrate data such as customers, vendors, inventory items, and G/L accounts ...
Installing the Business Central app in Microsoft Teams
How to install the Business Central app for Microsoft Teams.
Use Your Data to Create an App
Reports
Setup
Excel Reports

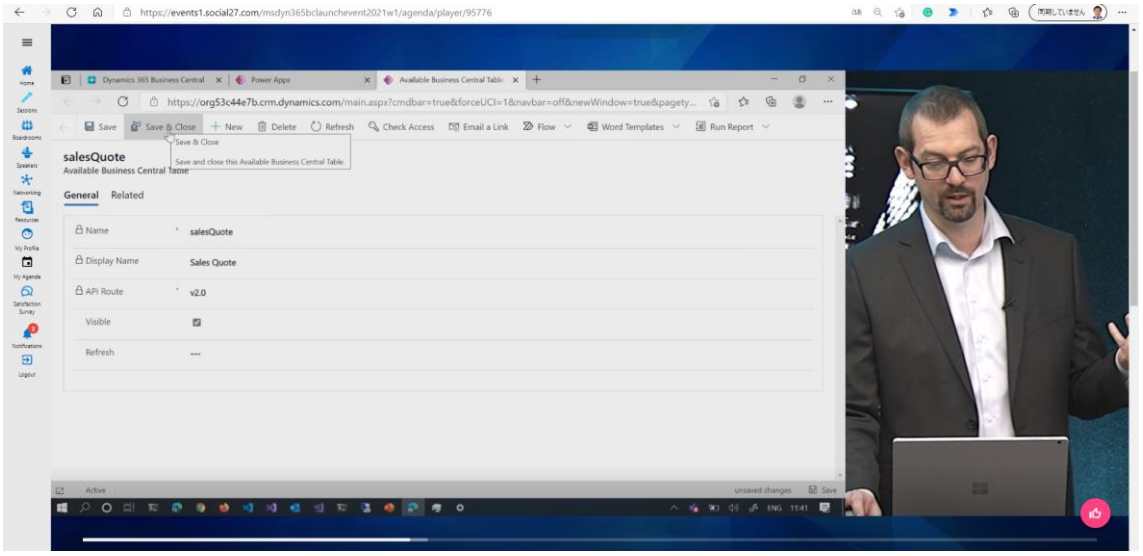

Dynamics 365 Business Central
Azure Active Directory Applications | Work Date: 4/12/2021
Saved
Search
New
Edit List
Delete
Edit
View
Page
Client ID
Description
State
af30e371-ad4a-4097-88c1-5555e7ada96f
Dynamics 365 Business Central for Virtual T...
Enabled

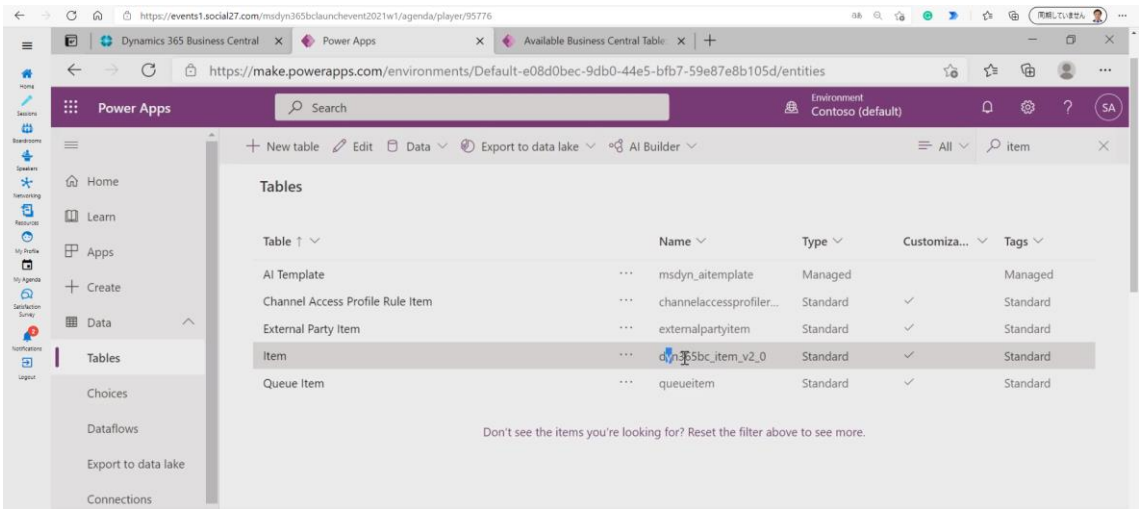

Power Apps
Search
Environment
Contoso (default)
Add record
Refresh data
Data
Export to data lake
AI Builder
Settings
All Business Central Tables
Home
Learn
Apps
Create
Data
Tables
Choices
Dataflows
Export to data lake
Connections
Custom Connectors
Gateways
Tables
Available Business Central Table
Columns
Relationships
Business rules
Views
Forms
Dashboards
Charts
Keys
Data
customerFinancialDetail
Customer Financial Detail
customerPayment
Customer Payment
customerPaymentJournal
Customer Payment Journal
customerSale
Customer Sale
defaultDimension
Default Dimension
dimension
Dimension
dimensionSetLine
Dimension Set Line
dimensionValue
Dimension Value
employee
Employee
generalLedgerEntry
General Ledger Entry
incomeStatement
Income Statement
item
Item





Check visible.


salesQuote
Available Business Central Table
General
Related
Name
salesQuote
Display Name
Sales Quote
API Route
v2.0
Visible
Refresh


Power Apps
Search
Environment
Contoso (default)
New table
Edit
Data
Export to data lake
AI Builder
Tables
Table
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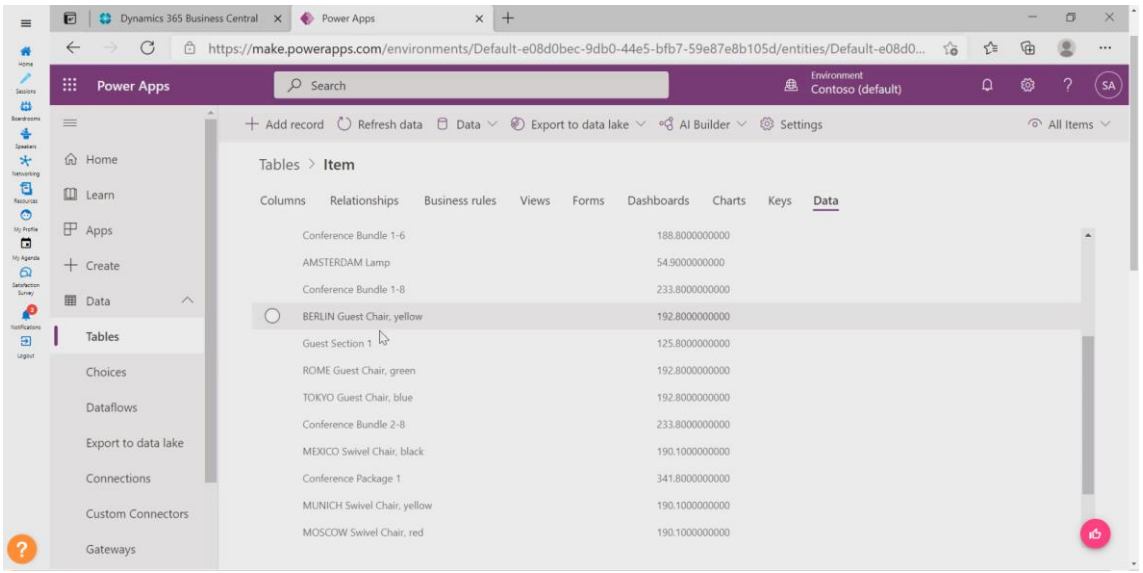
Type
Customiza...
Tags
AI Template
msdyn_aitemplate
Managed
Channel Access Profile Rule Item
channelaccessprofiler...
Standard
External Party Item
externalpartyitem
Item
Queue Item
queueitem
Don't see the items you're looking for? Reset the filter above to see more.
Home
Learn
Apps
Create
Data
Tables
Choices
Dataflows
Export to data lake
Connections

Data


Power Apps
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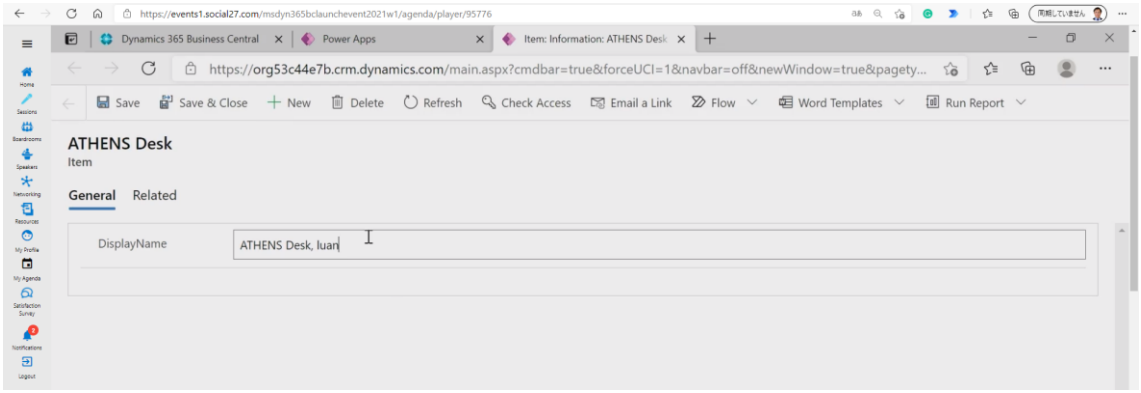
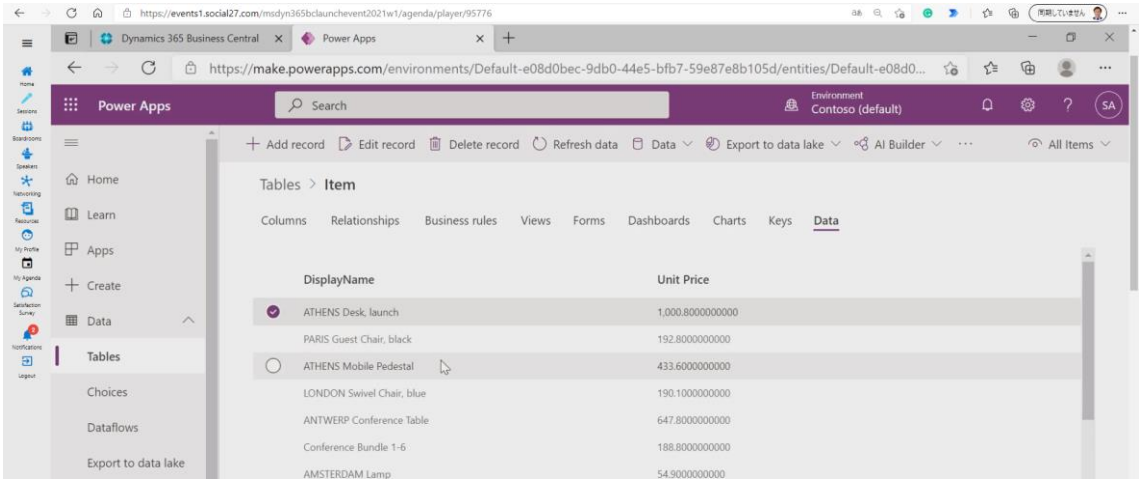
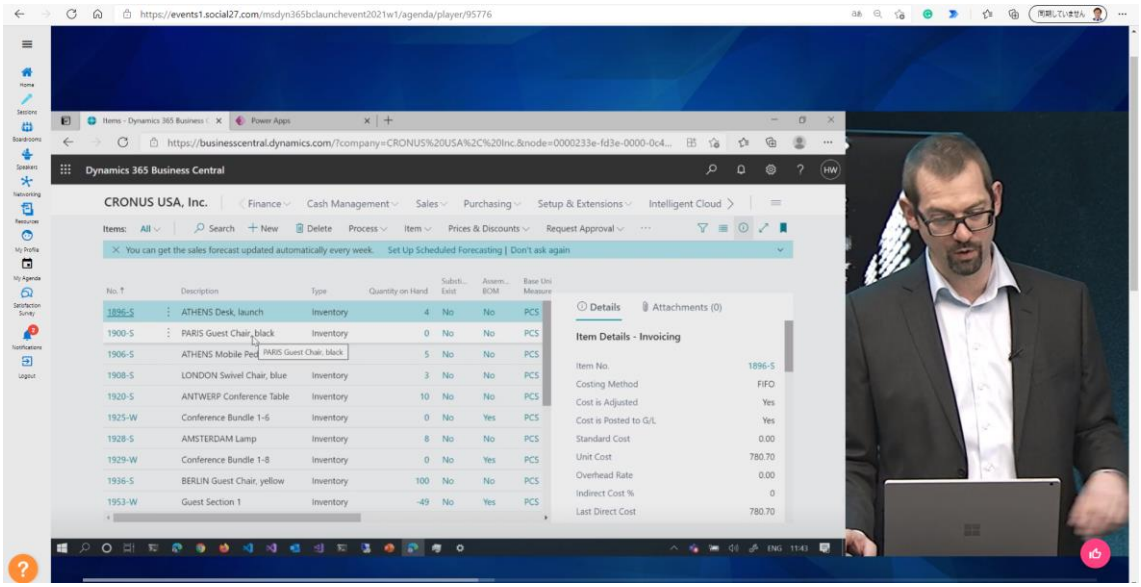
Environment
Contoso (default)
Add record
Refresh data
Data
Export to data lake
AI Builder
Settings
All Items
Tables
Item
Columns
Relationships
Business rules
Views
Forms
Dashboards
Charts
Keys
Data
Conference Bundle 1-6
188.8000000000
AMSTERDAM Lamp
54.9000000000
Conference Bundle 1-8
233.8000000000
BERLIN Guest Chair, yellow
192.8000000000
Guest Section 1
125.8000000000
ROME Guest Chair, green
192.8000000000
TOKYO Guest Chair, blue
192.8000000000
Conference Bundle 2-8
233.8000000000
MEXICO Swivel Chair, black
190.1000000000
Conference Package 1
341.8000000000
MUNICH Swivel Chair, yellow
190.1000000000
MOSCOW Swivel Chair, red
190.1000000000
Home
Learn
Apps
Create
Data
Tables
Choices
Dataflows
Export to data lake
Connections
Custom Connectors
Gateways

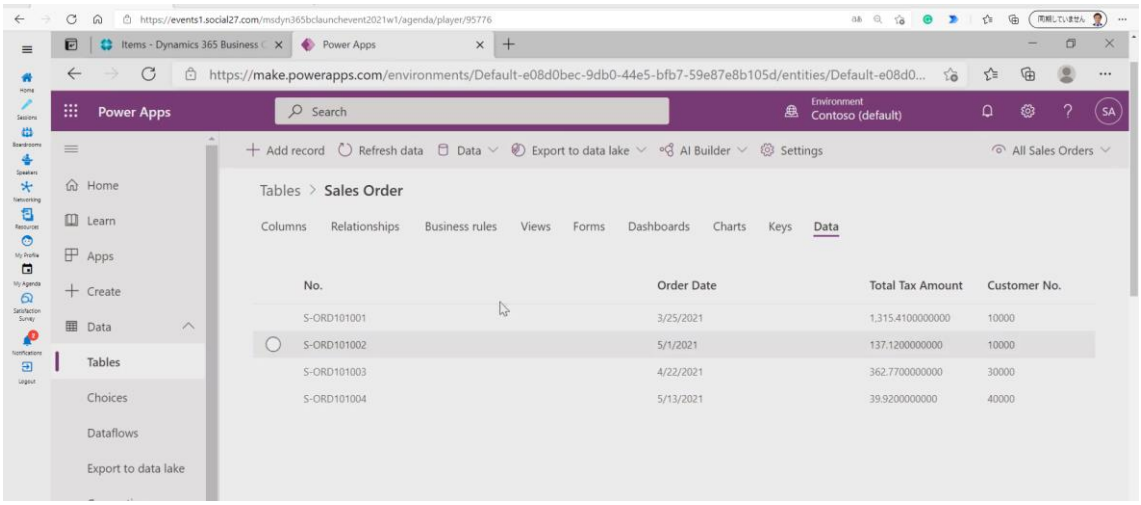
Change the name



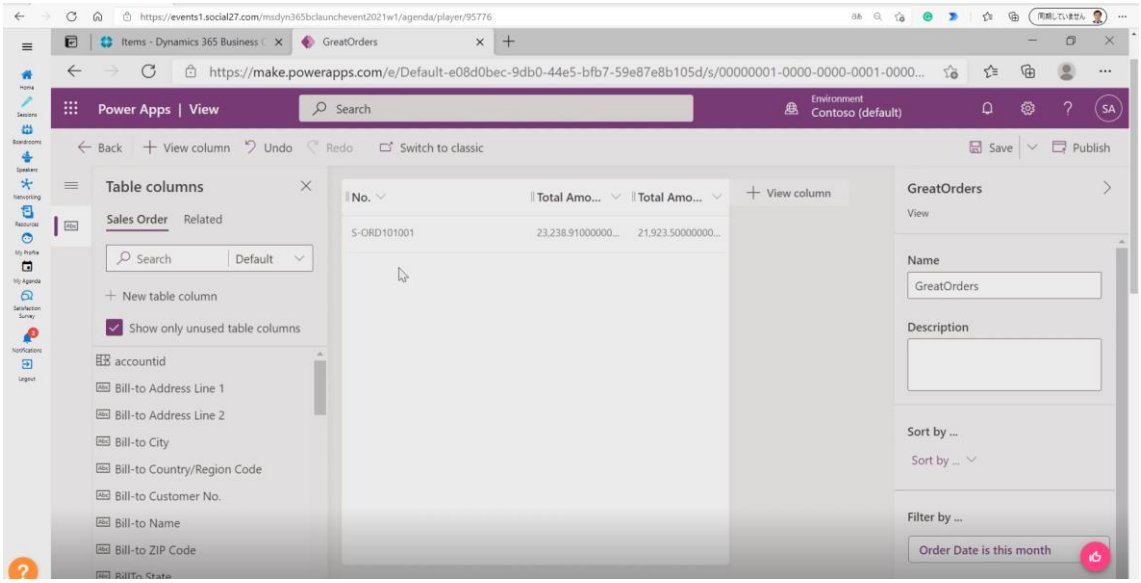
Refresh



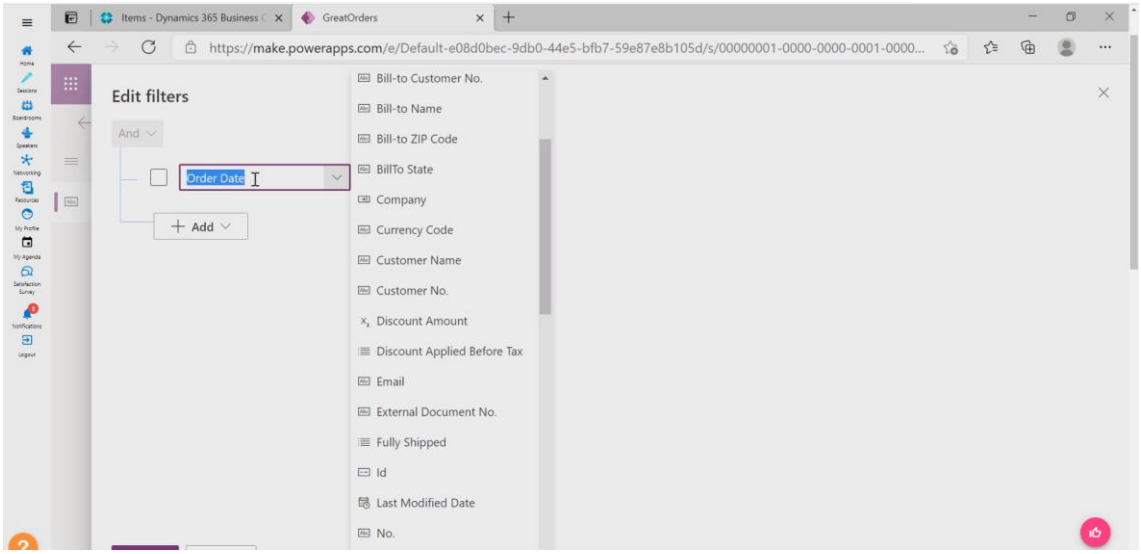


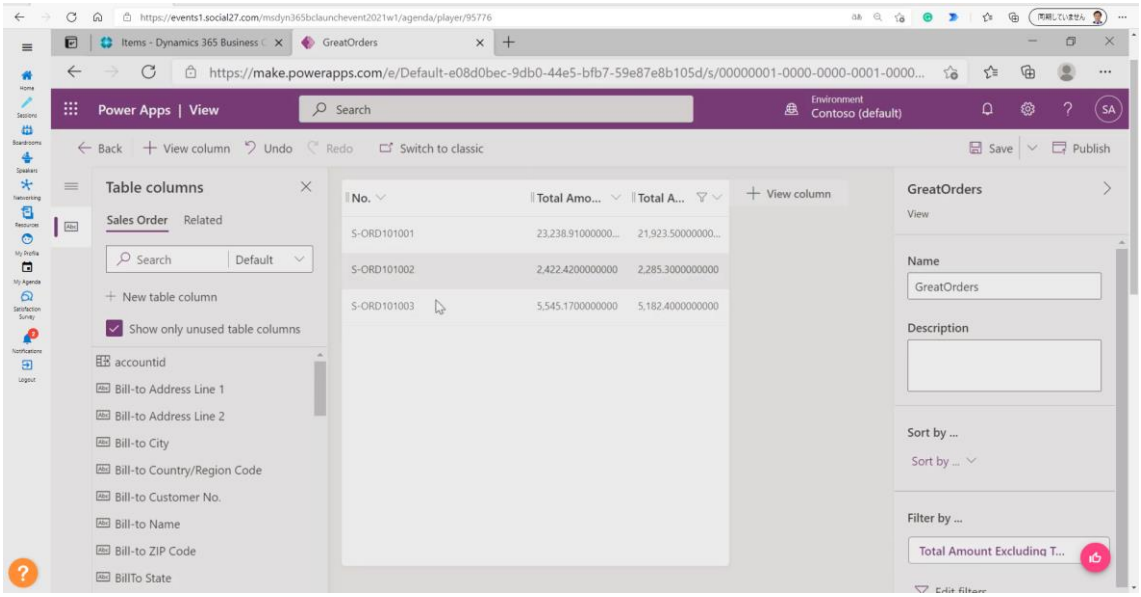


View



Add filter


Items - Dynamics 365 Business
GreatOrders
https://make.powerapps.com/e/Default-e08d0bec-9db0-44e5-bfb7-59e87e8b105d/s/00000001-0000-0000-0001-0000...
Edit filters
And
Order Date
Add
Bill-to Customer No.
Bill-to Name
Bill-to ZIP Code
BillTo State
Company
Currency Code
Customer Name
Customer No.
Discount Amount
Discount Applied Before Tax
Email
External Document No.
Fully Shipped
Id
Last Modified Date
No.


Power Apps | View
Search
Environment
Contoso (default)
Back
View column
Undo
Redo
Switch to classic
Save
Publish
Table columns
Sales Order
Related
Search
Default
New table column
Show only unused table columns
accountid
Bill-to Address Line 1
Bill-to Address Line 2
Bill-to City
Bill-to Country/Region Code
Bill-to Customer No.
Bill-to Name
Bill-to ZIP Code
BillTo State
No.
Total Amo...
Total A...
S-ORD101001
23,238.91000000...
21,923.50000000...
S-ORD101002
2,422.4200000000
2,285.3000000000
S-ORD101003
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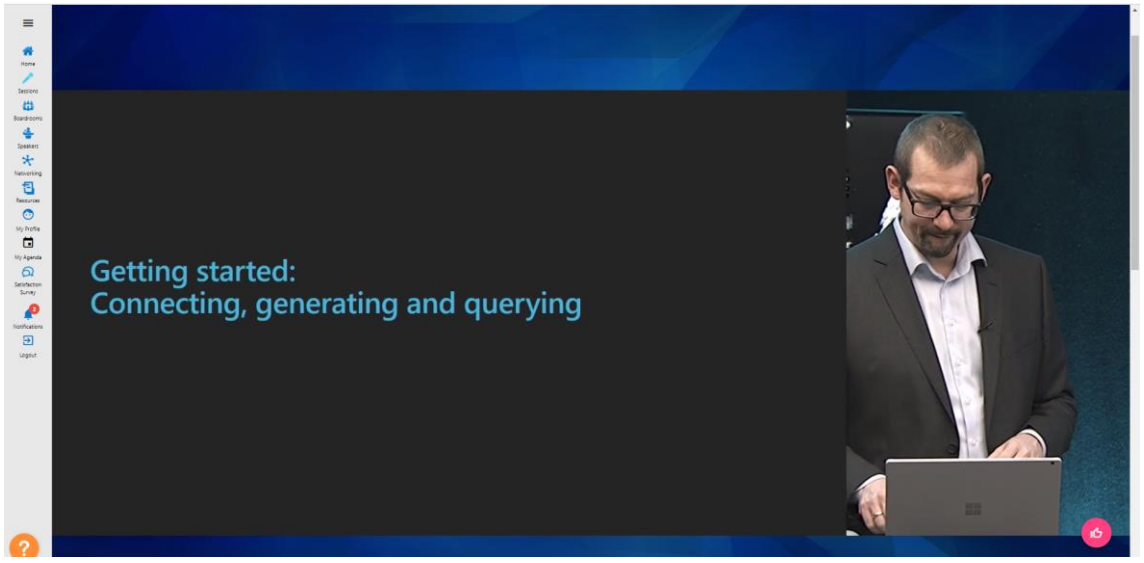
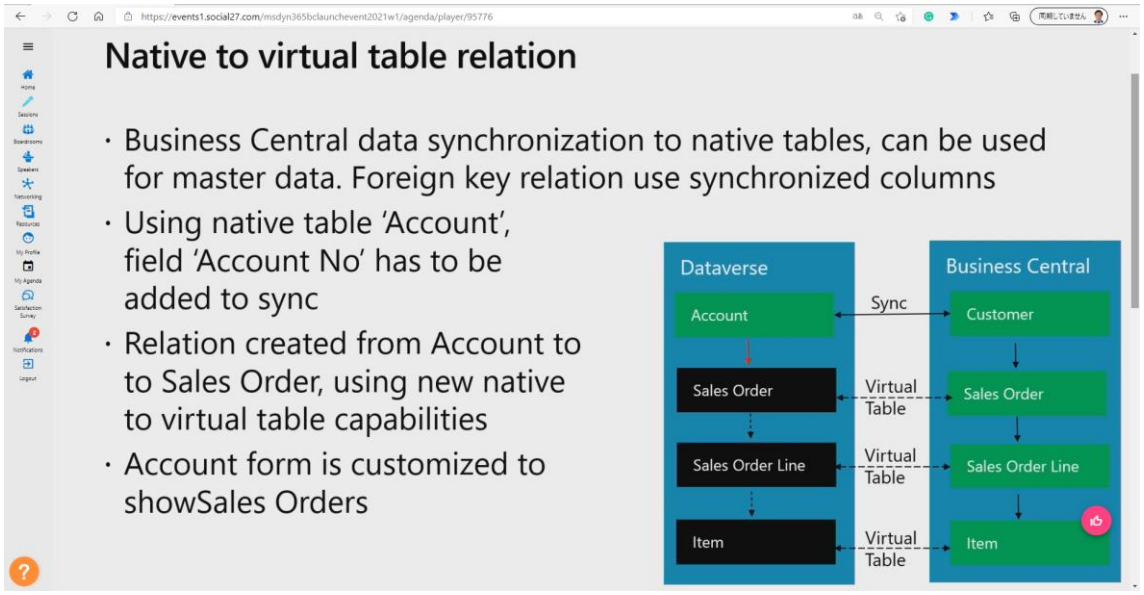
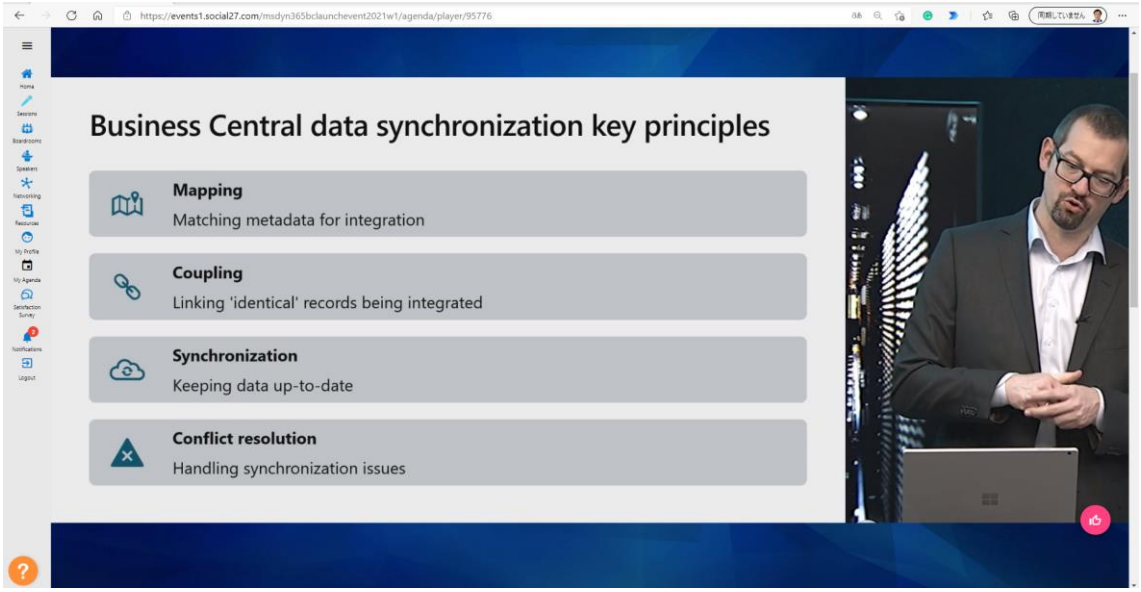
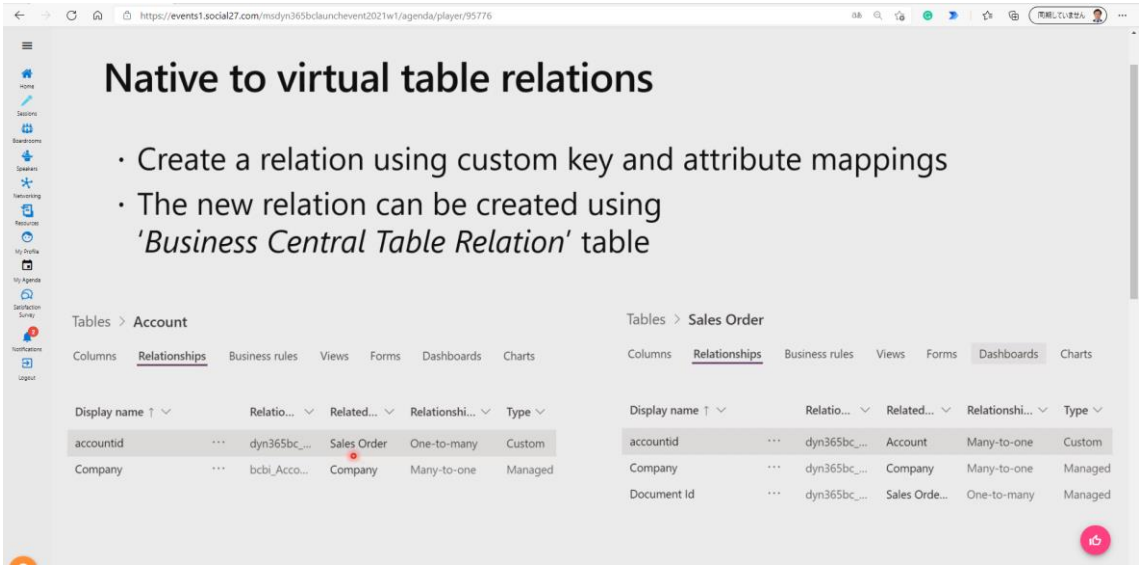
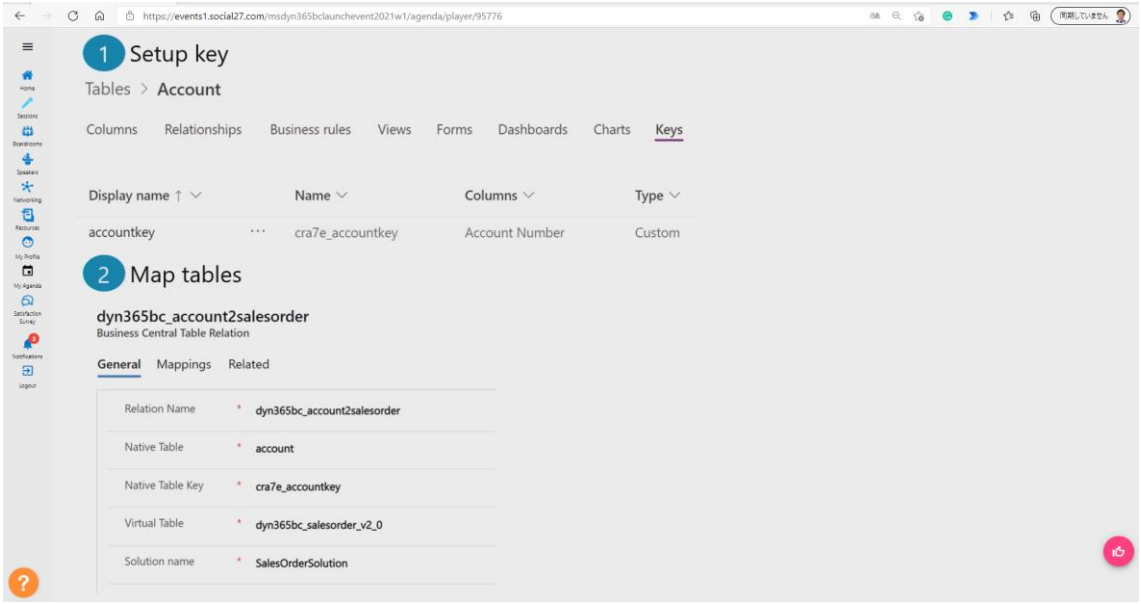
View column
GreatOrders
View
Name
GreatOrders
Description
Sort by ...
Filter by ...
Total Amount Excluding T...

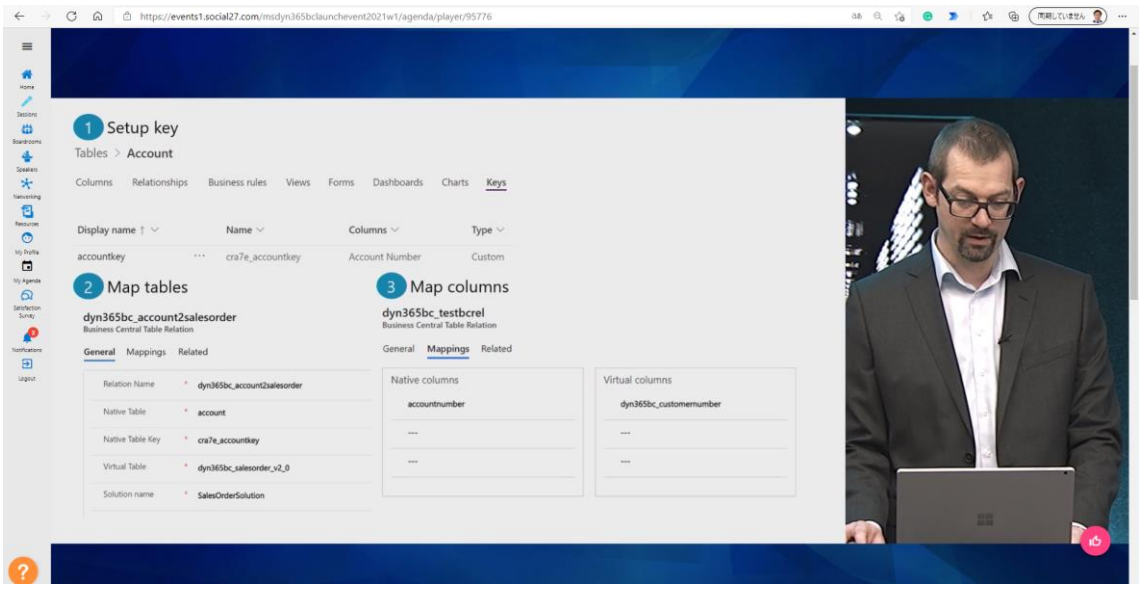

Getting started:
Connecting, generating and querying


https://events1.social27.com/msdyn365bclaunchevent2021w1/agenda/player/95776
Native to virtual table relation
Business Central data synchronization to native tables, can be used for master data. Foreign key relation use synchronized columns
Using native table 'Account', field 'Account No' has to be added to sync
Relation created from Account to to Sales Order, using new native to virtual table capabilities
Account form is customized to showSales Orders
Dataverse
Business Central
Account
Sync
Customer
Sales Order
Virtual Table
Sales Order
Sales Order Line
Virtual Table
Sales Order Line
Item
Virtual Table
Item


https://events1.social27.com/msdyn365bclaunchevent2021w1/agenda/player/95776
Business Central data synchronization key principles
Mapping
Matching metadata for integration
Coupling
Linking 'identical' records being integrated
Synchronization
Keeping data up-to-date
Conflict resolution
Handling synchronization issues


https://events1.social27.com/msdyn365bclaunchevent2021w1/agenda/player/95776
Native to virtual table relations
· Create a relation using custom key and attribute mappings
· The new relation can be created using 'Business Central Table Relation' table
Tables > Account
Columns Relationships Business rules Views Forms Dashboards Charts
Display name | Relatio... | Related... | Relationshi... | Type
accountid | dyn365bc_... | Sales Order | One-to-many | Custom
Company | bcbi_Acco... | Company | Many-to-one | Managed
Tables > Sales Order
Columns Relationships Business rules Views Forms Dashboards Charts
Display name | Relatio... | Related... | Relationshi... | Type
accountid | dyn365bc_... | Account | Many-to-one | Custom
Company | dyn365bc_... | Company | Many-to-one | Managed
Document Id | dyn365bc_... | Sales Orde... | One-to-many | Managed


1 Setup key
Tables > Account
Columns Relationships Business rules Views Forms Dashboards Charts Keys
Display name ↑ Name Columns Type
accountkey cra7e_accountkey Account Number Custom
2 Map tables
dyn365bc_account2salesorder
Business Central Table Relation
General Mappings Related
Relation Name * dyn365bc_account2salesorder
Native Table * account
Native Table Key * cra7e_accountkey
Virtual Table * dyn365bc_salesorder_v2_0
Solution name * SalesOrderSolution


1 Setup key
Tables > Account
Columns Relationships Business rules Views Forms Dashboards Charts Keys
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accountkey cra7e_accountkey Account Number Custom
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dyn365bc_account2salesorder
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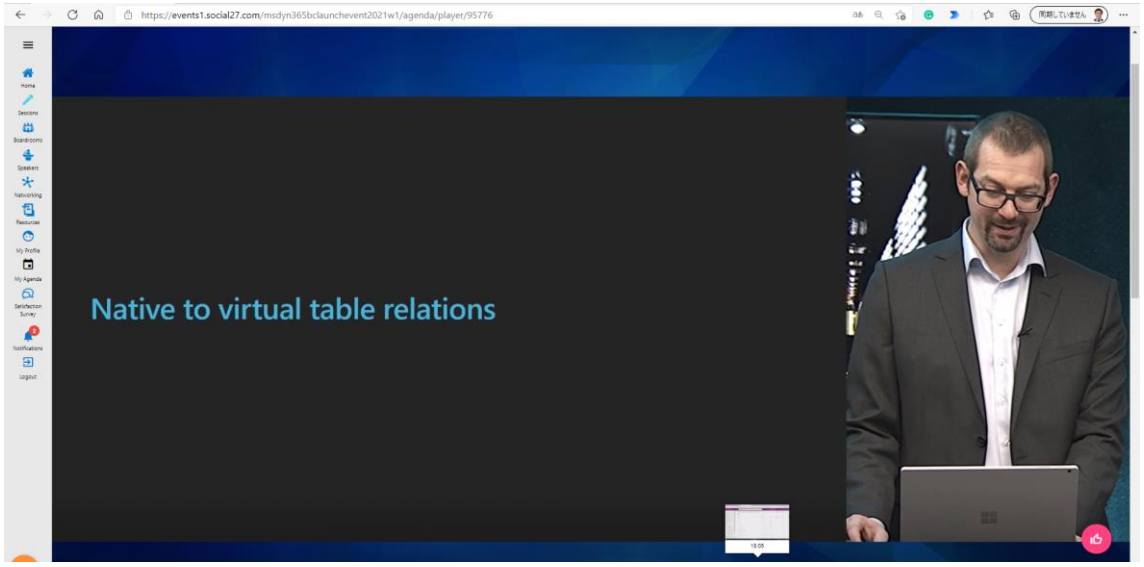
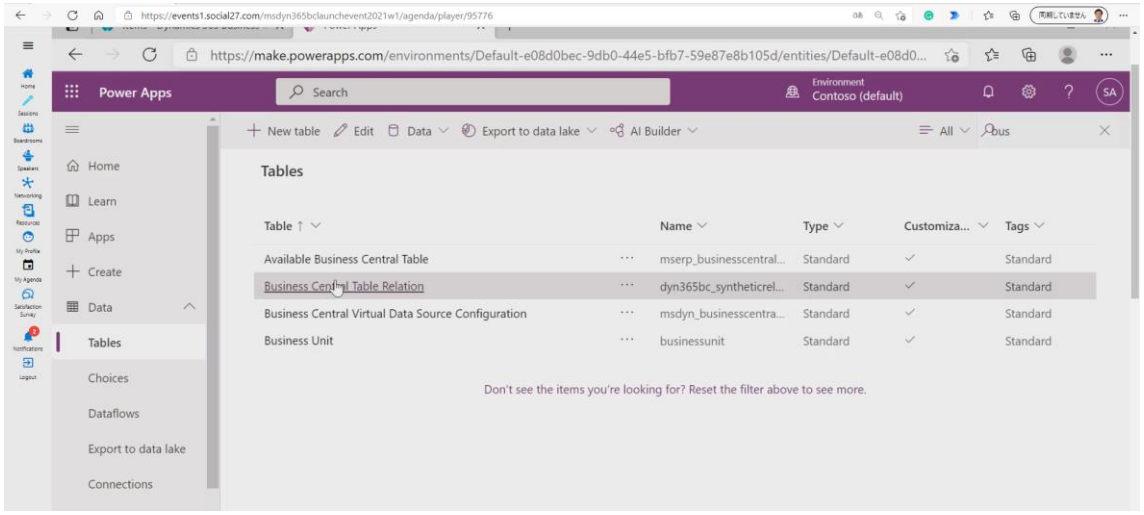
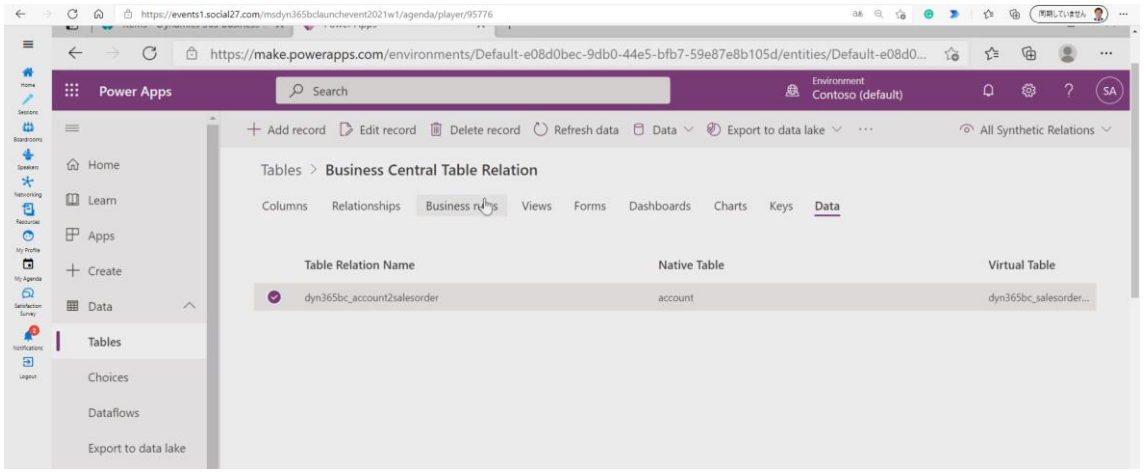
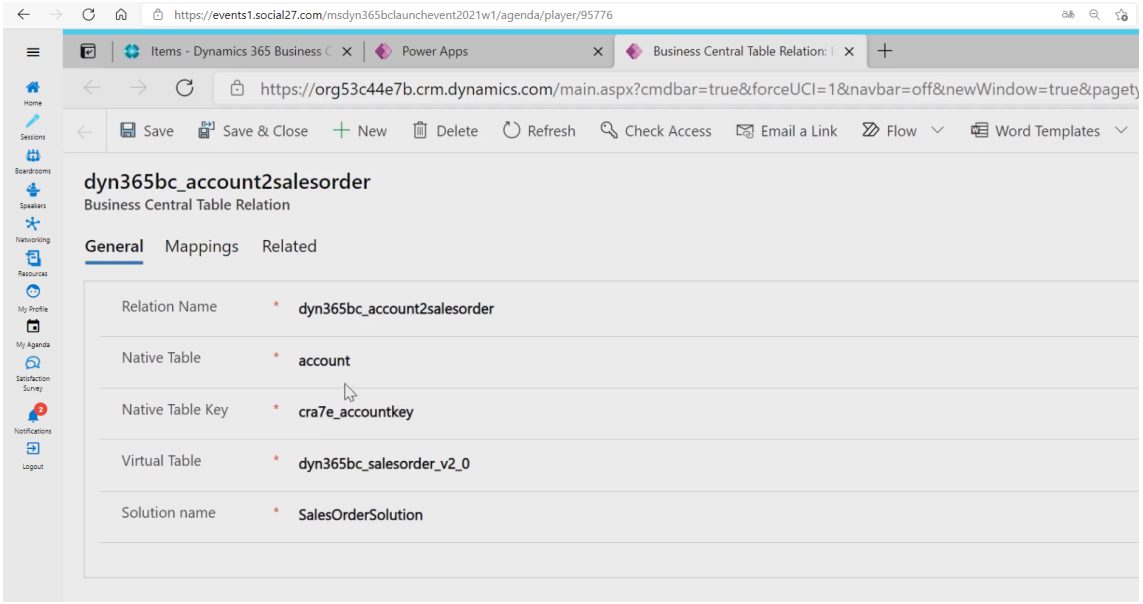
Relation Name * dyn365bc_account2salesorder
Native Table * account
Native Table Key * cra7e_accountkey
Virtual Table * dyn365bc_salesorder_v2_0
Solution name * SalesOrderSolution
3 Map columns
dyn365bc_testbcrel
Business Central Table Relation
General Mappings Related
Native columns
accountnumber
Virtual columns
dyn365bc_customernumber

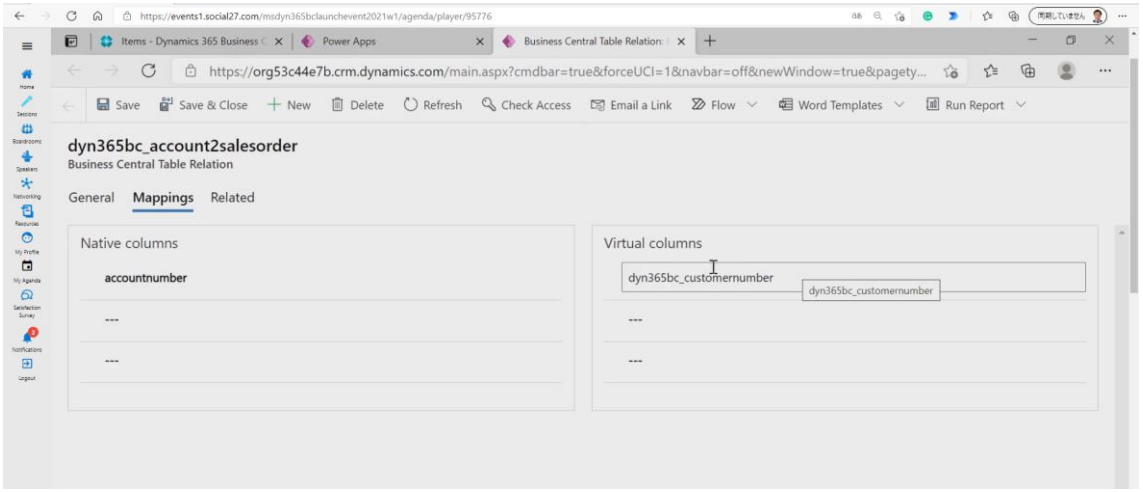




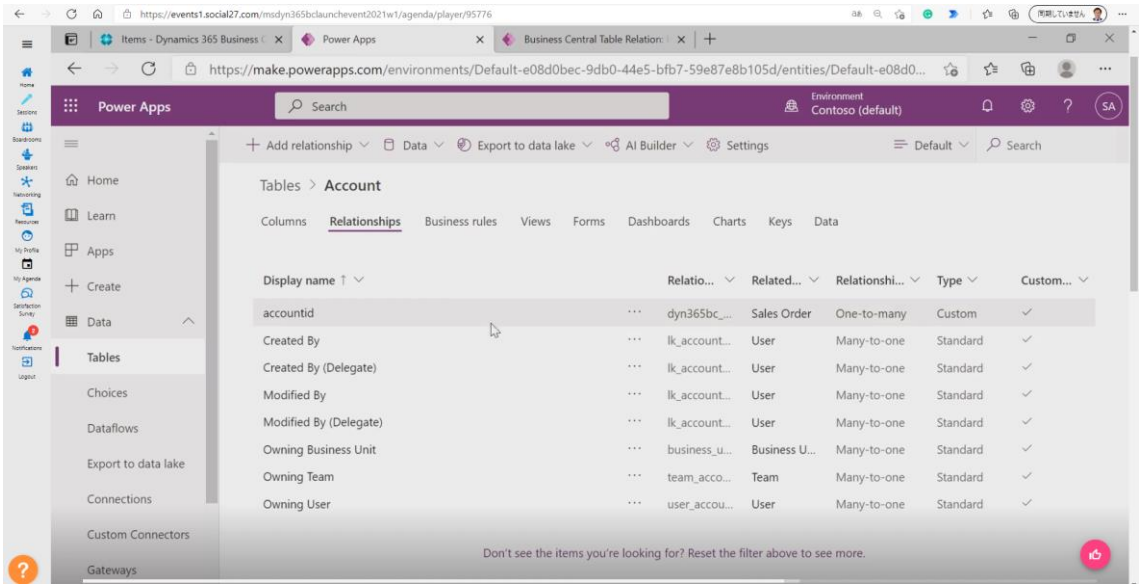
Data -> Edit record



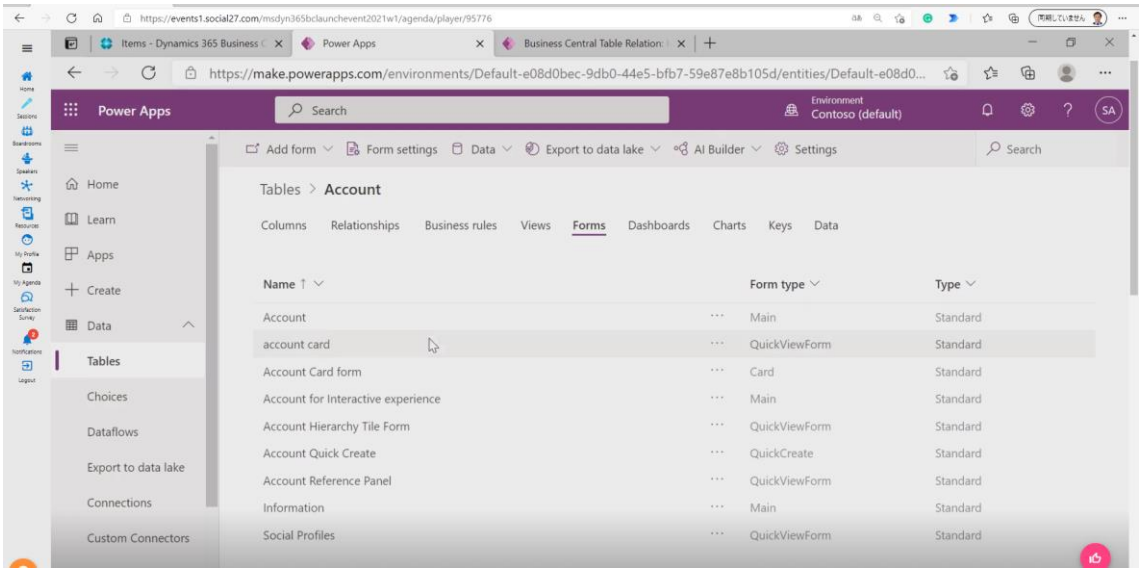


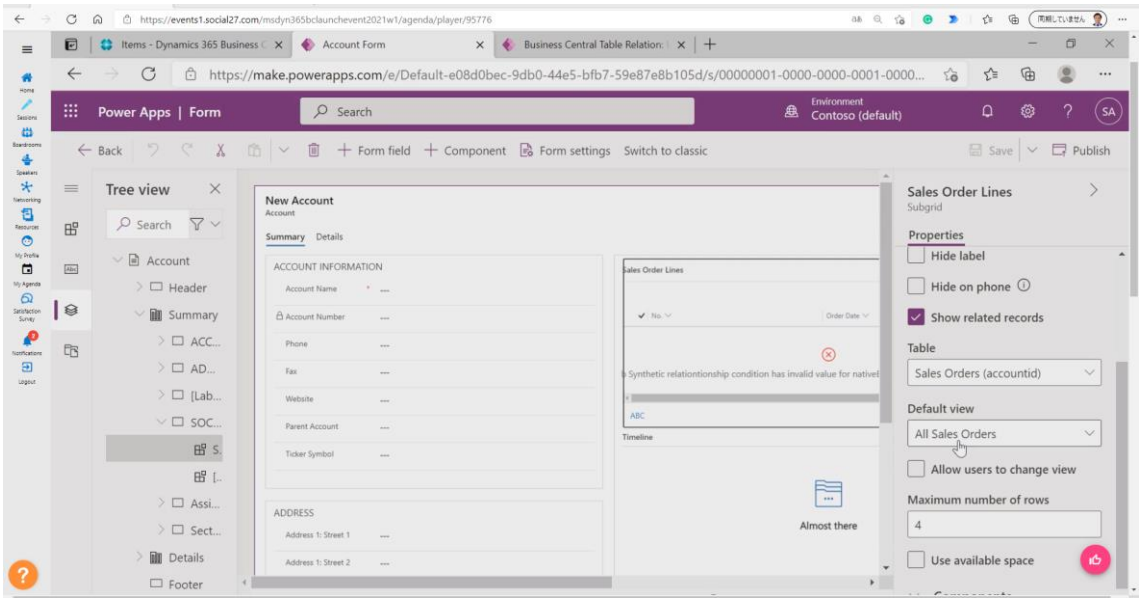


Account -> Relationships



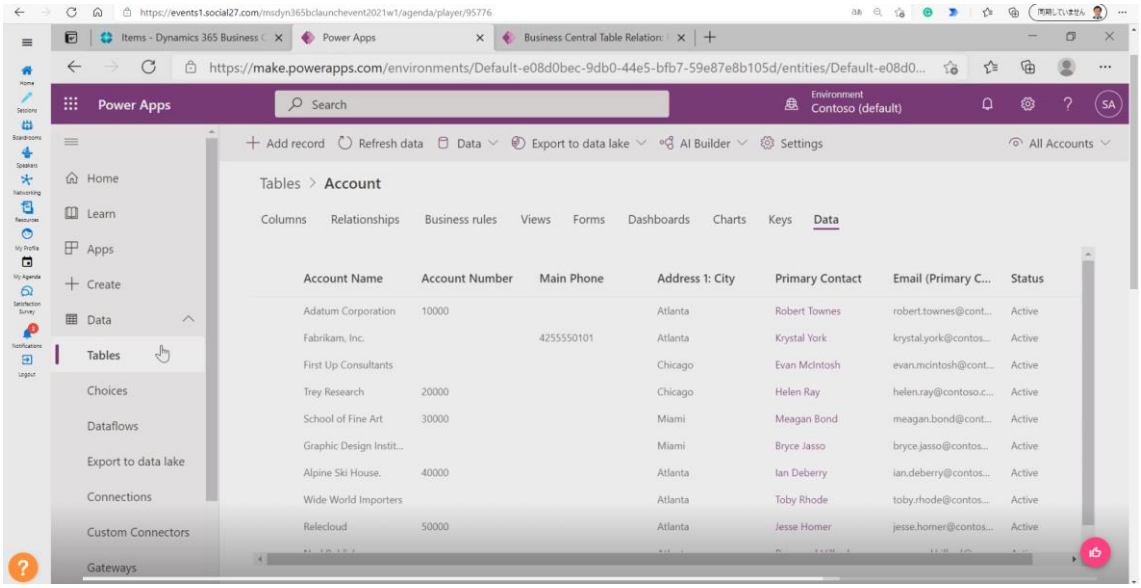
Form -> Account



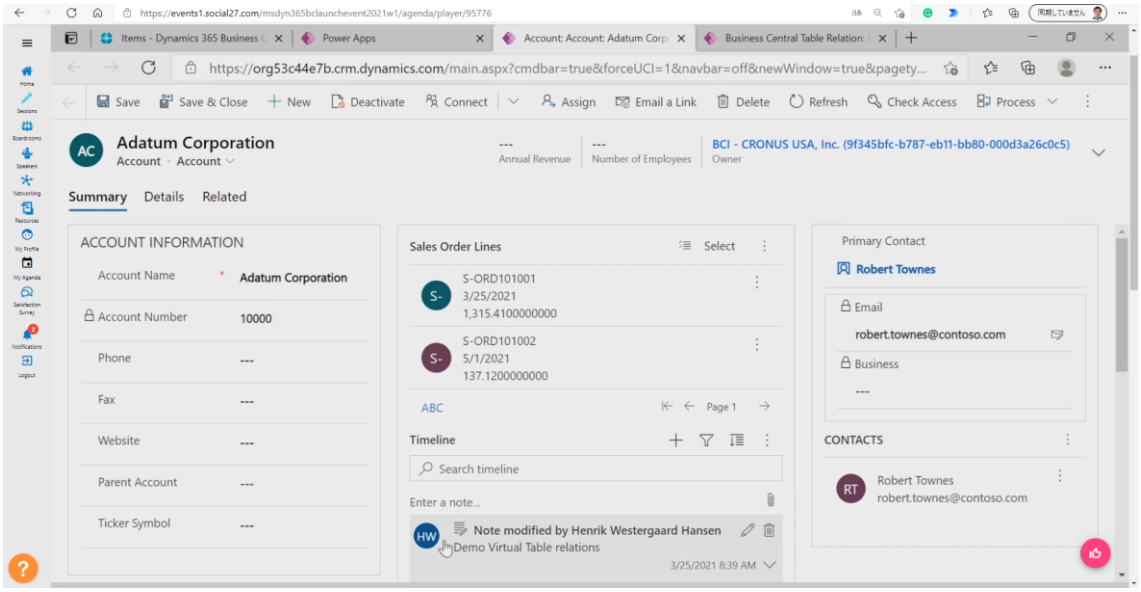


Go back

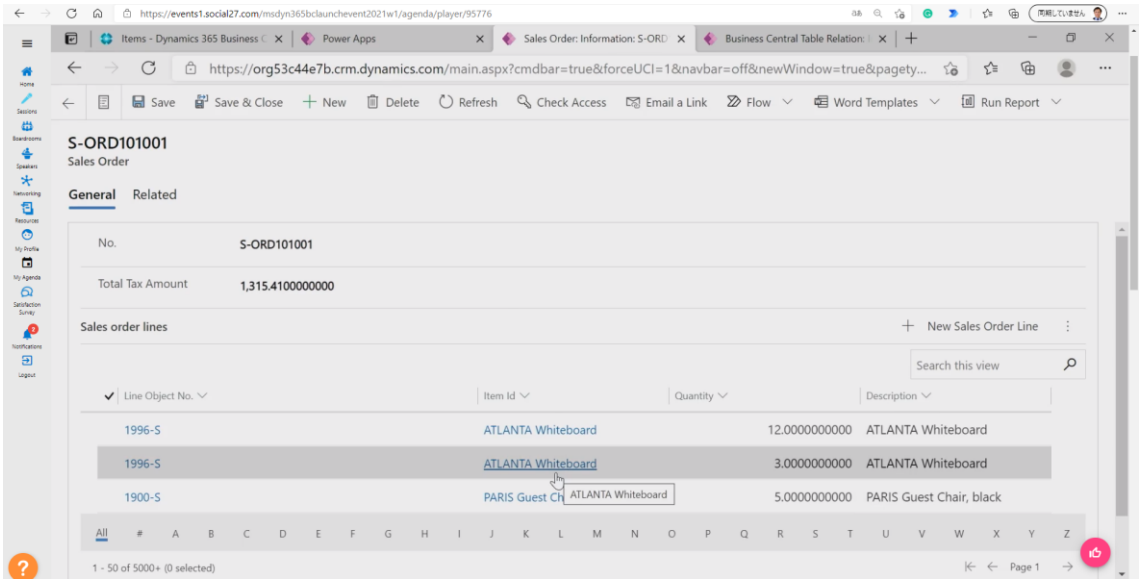
Data -> All Accounts



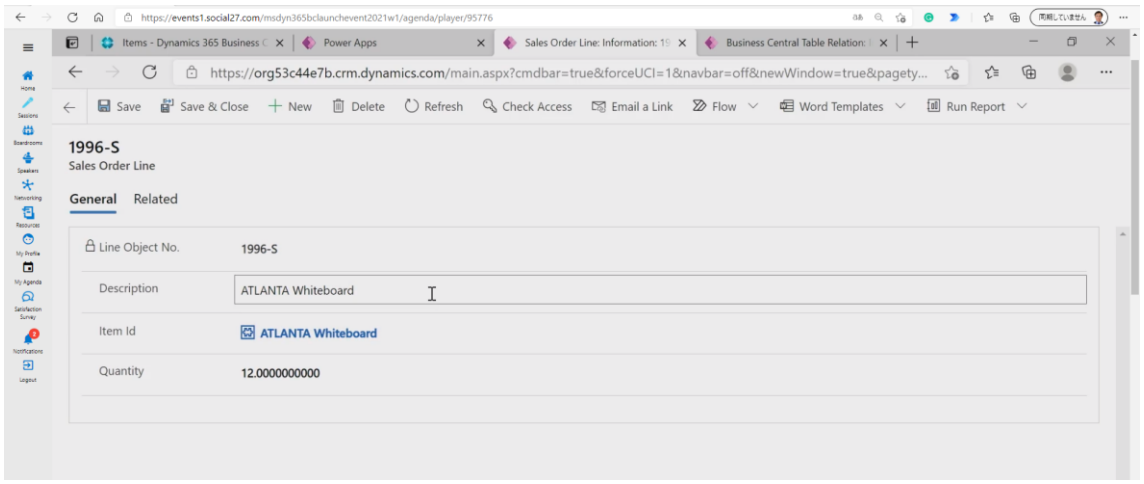
Edit record

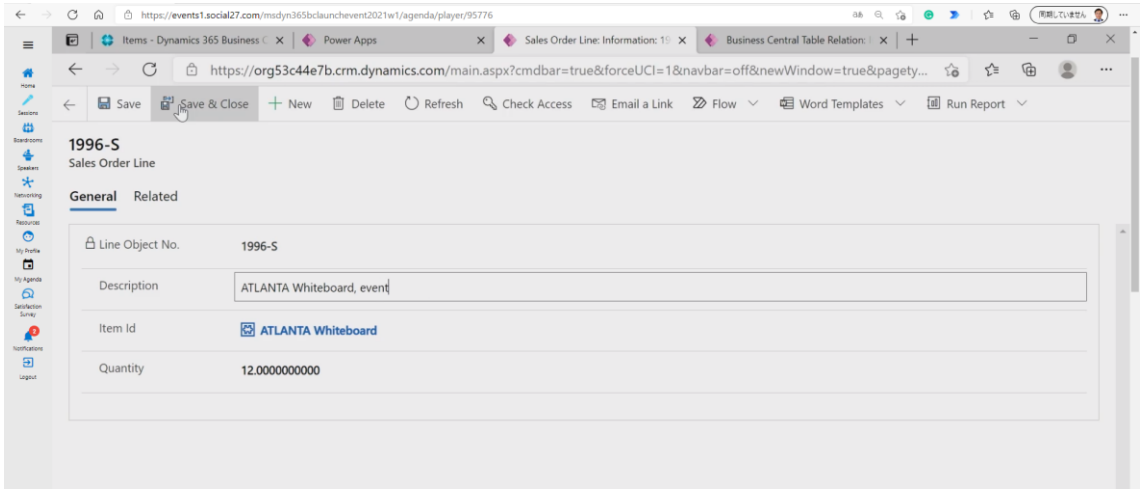


Click order

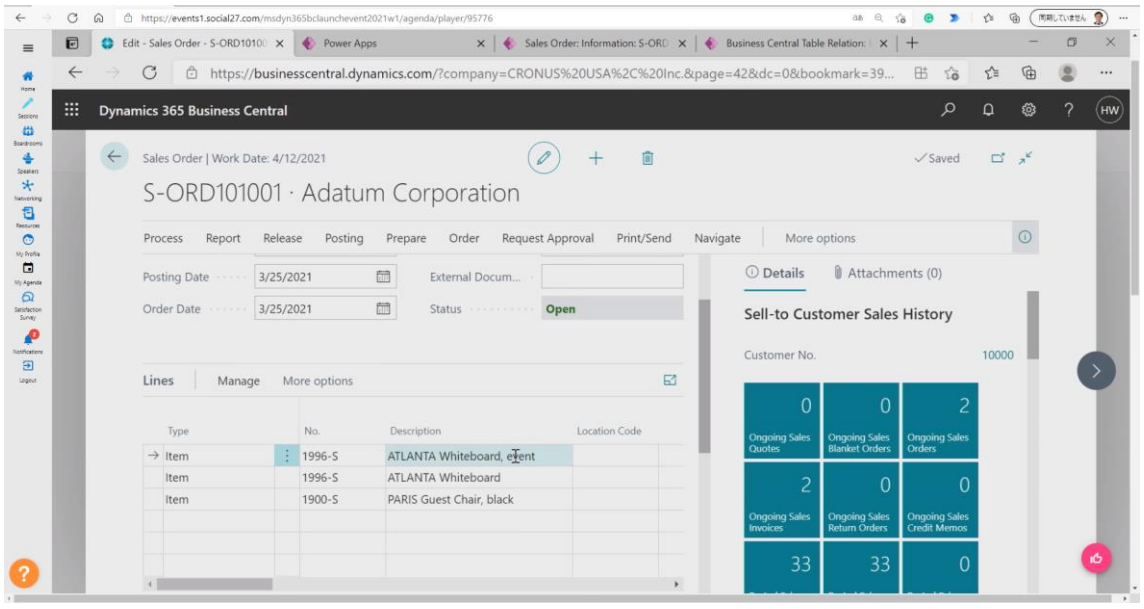


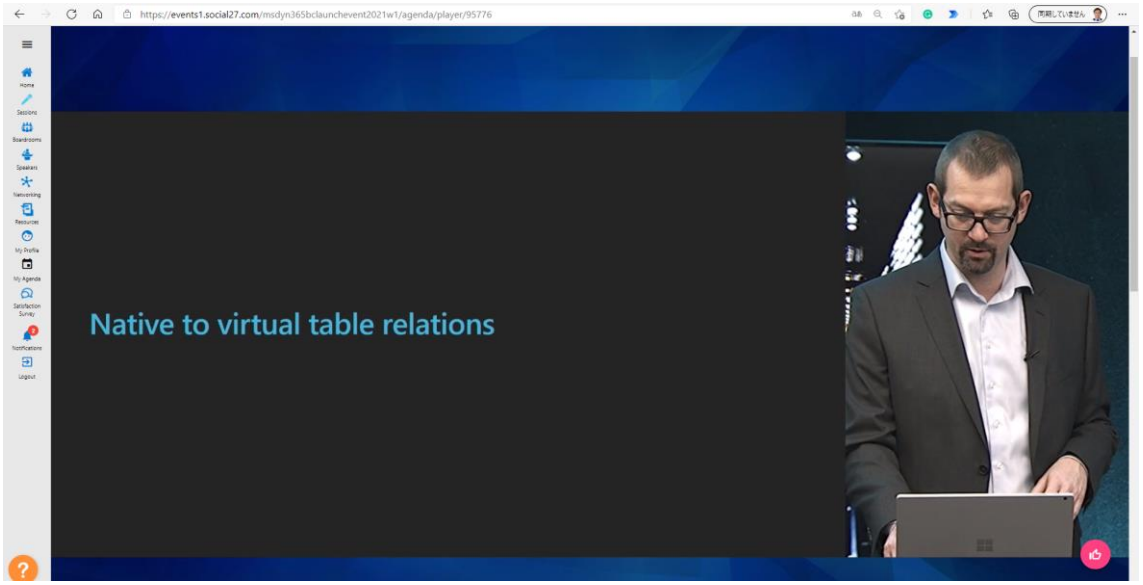
Edit lines





Updated in BC





Add Account number to synchronization

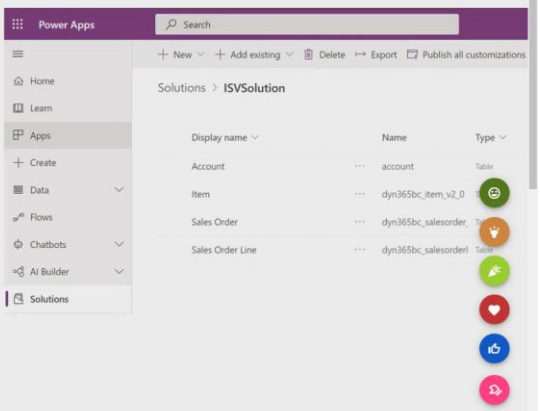
- Customer (No.) to Account (AccountNumber). One way.

```
codeunit 50100 MyCodeunit
{
    [EventSubscriber(ObjectType::Codeunit, Codeunit::"CDS Setup Defaults", 'OnAfterResetCustomerAccountMapping', '', true, true)]
    0 references
    local procedure HandleOnAfterResetCustomerAccountMapping(IntegrationTableMappingName: Code[20])
    var
        IntegrationFieldMapping: Record "Integration Field Mapping";
        Customer: Record Customer;
        CRMAccount: Record "CRM Account";
    begin
        InsertIntegrationFieldMapping(
          IntegrationTableMappingName,
          Customer.FieldNo("No."),
          CRMAccount.FieldNo(AccountNumber),
          IntegrationFieldMapping.Direction::ToIntegrationTable,
          '', false, false);
    end;

    1 reference
    procedure InsertIntegrationFieldMapping(IntegrationTableMappingName: Code[20]; TableFieldNo: Integer;
                IntegrationTableFieldNo: Integer; SynchDirection: Option; ConstValue: Text; ValidateField: Boolean;
                ValidateIntegrationTableField: Boolean)
    var
        IntegrationFieldMapping: Record "Integration Field Mapping";
    begin
        IntegrationFieldMapping.CreateRecord(IntegrationTableMappingName, TableFieldNo, IntegrationTableFieldNo, SynchDirection,
            ConstValue, ValidateField, ValidateIntegrationTableField);
    end;
}
```

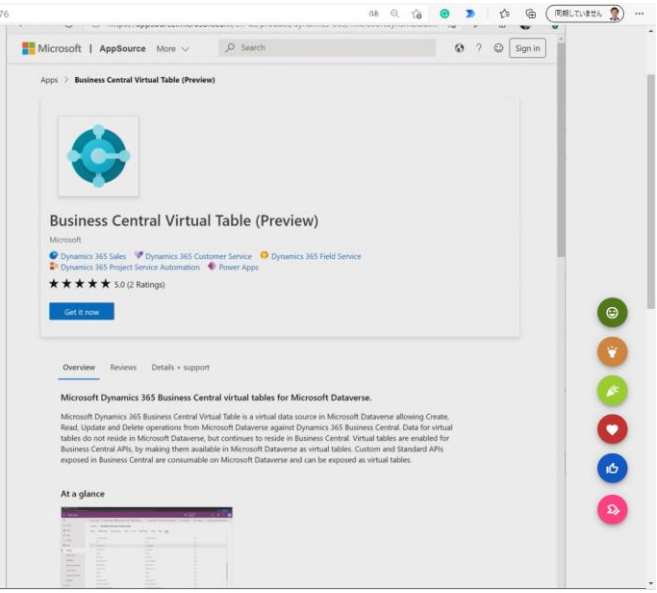
Exporting and Import solutions containing virtual tables

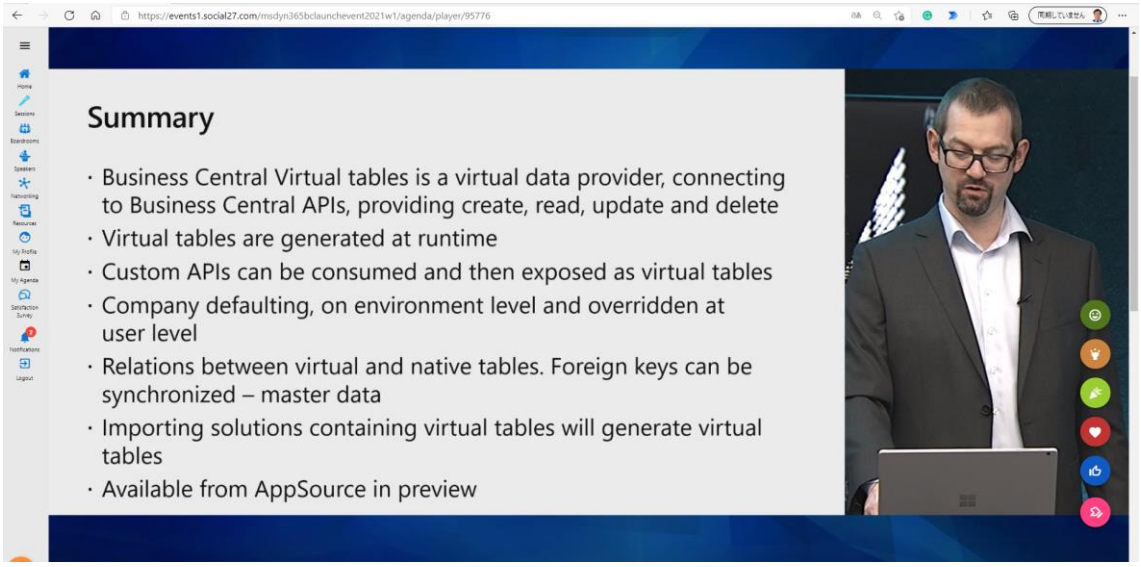
- Export
  - Add customized native tables
  - Add generated virtual tables
  - Include customized Views and Forms
- Import
  - Install Business Central Virtual table solution from AppSource
  - Setup connection to Business Central
  - Import the solution
  - Virtual tables are autogenerated on import

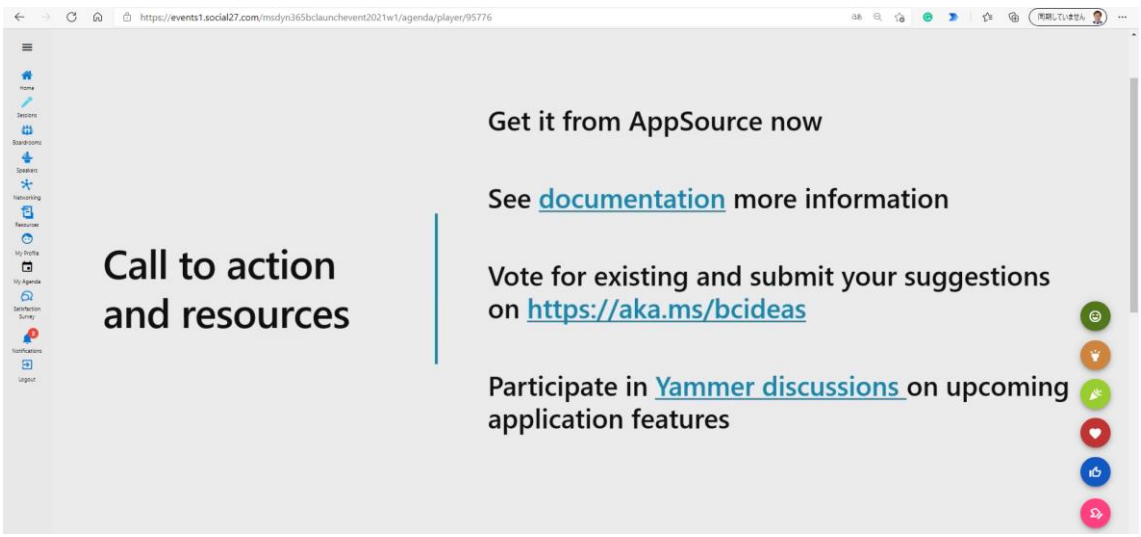


Getting the preview

- Install from AppSource
  - Choose Dataverse environment for installation
  - Avaliable updates will show in Power Portal Admin Center




https://events1.social27.com/msdyn365bclaunchevent2021w1/agenda/player/95776
Summary
· Business Central Virtual tables is a virtual data provider, connecting to Business Central APIs, providing create, read, update and delete
· Virtual tables are generated at runtime
· Custom APIs can be consumed and then exposed as virtual tables
· Company defaulting, on environment level and overridden at user level
· Relations between virtual and native tables. Foreign keys can be synchronized – master data
· Importing solutions containing virtual tables will generate virtual tables
· Available from AppSource in preview


https://events1.social27.com/msdyn365bclaunchevent2021w1/agenda/player/95776
Call to action and resources
Get it from AppSource now
See documentation more information
Vote for existing and submit your suggestions on https://aka.ms/bcideas
Participate in Yammer discussions on upcoming application features