

Dynamics 365 FastTrack Architecture Insights

Dual Write - Cutover Considerations

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Agenda

❑ Cutover overview

- Dual write cutover

❑ Getting ready with Production instances

❑ Dual write Cutover considerations

- Initial sync considerations
- Data migration considerations
- Performance consideration
- Security management considerations



Cutover Overview

What is Cutover



Cutover is the process of transition from current systems to Dynamics 365 business applications



A cutover strategy for a business application needs to transition:

1. Business Processes
2. Data
3. System Functionality
4. Integration with other systems
5. People

Cutover strategy is not just the detailed plan for the final cutover weekend or just data migration.

Detailed Cutover Strategy



Scope, Requirements and Dependencies



Business calendar activities (not just data migration)



Roles and responsibilities



High-level cutover project plan with mock cutovers



Initial detailed Go-Live cutover plan (including fallback plan and rules)



Reconciliations – what's needed and how done, source data cleaning toolkit



Environment management plan



Assess impact on business ecosystem and identify other owners

Why is Dual-write cutover important

Below are the key activities, would impact end to end cutover therefore these must be planned and practiced in advance,

- ❑ Data migration approach
 - Review initial sync capabilities and data migration strategy for each apps
 - Harmonized concept between both apps
- ❑ Testing and validations
 - Identify performance metrics for Dual-write entities e.g., volume, frequency, trigger points, initial data sync/migration etc.
 - Identify the bottlenecks e.g., customization (plugins), latency, network etc. and take corrective action.
- ❑ Timing and performance
 - Dual write cutover need to be considered in cutover timeline
 - High-risk Performance Areas for Cutover have been Reviewed and Validated Mitigations in Place
- ❑ Mock cutover
 - To allow for corrections or tuning to the cutover plan to be made based on the initial execution.
 - Failure to conduct a mock-cutover introduces multiple risks.
- ❑ Authentication and authorization
 - Users and security roles considering both apps.

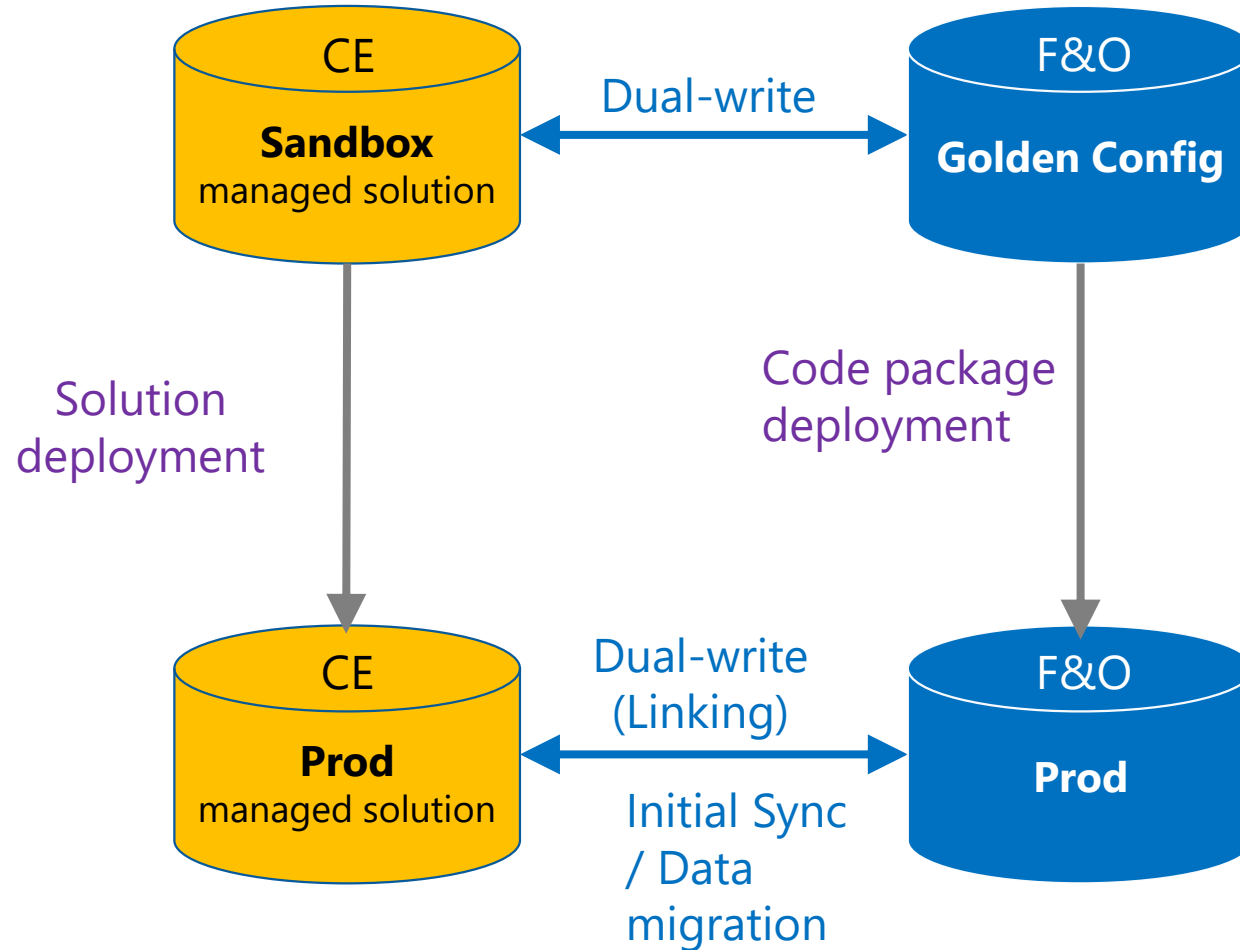


Getting ready with
Production
instances

Deployment flow

CE

F&O



Get Production instances

F&O Production

- Deploy F&O Production via LCS
- An existing F&O

CE Production

- Create new instance via PPAC
- Create new instance via LCS while F&O Production deployment
- Convert sandbox to Production via PPAC

Dual-write linking on Production environments

- ❑ **Option 1** - Enable Power Platform integration with a new Dataverse instance from Lifecycle services (LCS)

[[Dual-write setup from Lifecycle Services - Finance & Operations | Dynamics 365 | Microsoft Docs](#)]

- During environment deployment
- After environment deployment

- ❑ **Option 2** - Set up Dual-write for an existing Dataverse environment from Lifecycle services

[[Documentation](#)]

This option requires a support ticket. It is a mid-term workaround until LCS / Power Platform Admin Console (PPAC) allows this as a self-service

Get your data into F&O Production

❑ **F&O Database Refresh**

- Copy your golden configuration data from any Tier-2 environment to Production
- If database is on a Tier-2 environment already: service request
- If database is on a Tier-1 environment: first bacpac to Tier-2, then service request for database refresh
- [Copy a Finance and Operations database from SQL Server to a production Azure SQL Database environment](#)

❑ **Point in time restore**

- Supports rollback of your data on an Azure SQL database to a point in time within the configured retention period
- [Restore a database on a non-production environment](#)

Do not manually configure Production from scratch

Get your data into CE Production

❑ **New CE Production instance**

- Link the environment, more details : [Dual-write setup from Lifecycle Services - Finance & Operations | Dynamics 365 | Microsoft Docs](#)
- Initial sync
- Data migration

❑ **Production Converted from Sandbox**

- Relink the environment to F&O Production (If this was linked to F&O sandbox), more details : [Unlink and relink dual-write environments - Finance & Operations | Dynamics 365 | Microsoft Docs](#)
- Initial sync
- Data migration



Dual Write Cutover Considerations

Dual Write Cutover Key Considerations



INITIAL SYNC
CONSIDERATIONS



DATA MIGRATION
CONSIDERATIONS



PERFORMANCE
CONSIDERATIONS

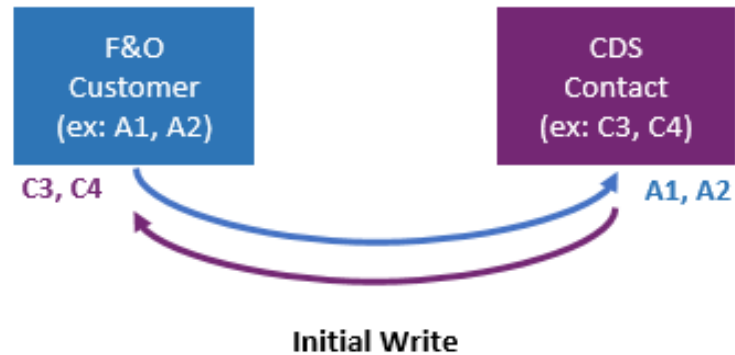


SECURITY MANAGEMENT
CONSIDERATIONS



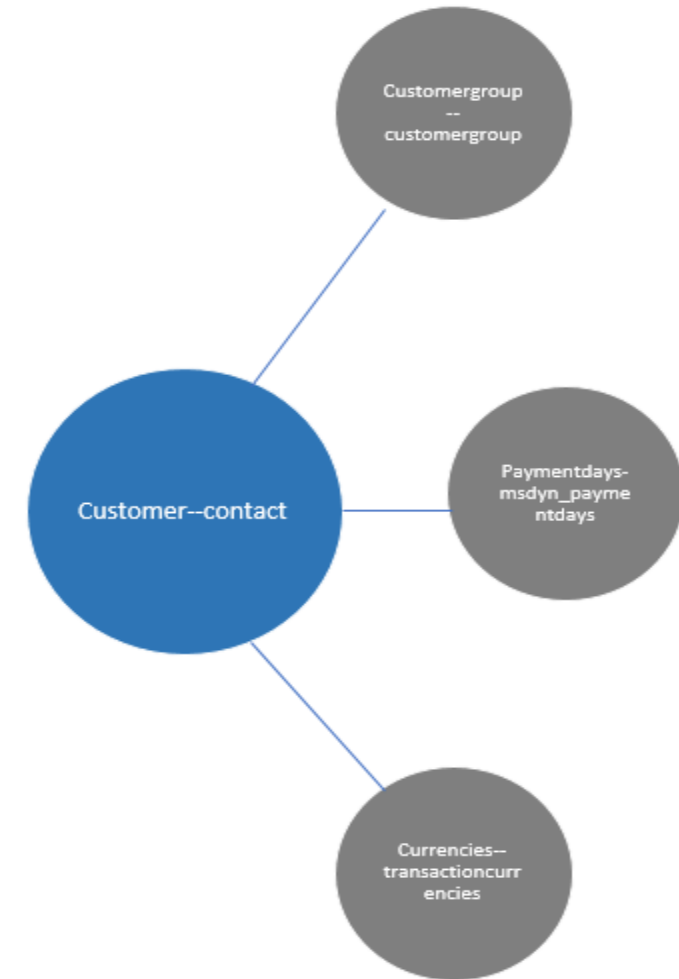
Initial sync

Copying pre-existing data (Initial sync)



- Limitations on data size
- Not supported for table maps with 10+ lookups
- Not supported for self-referencing table maps
- Timeout issues
- Other data migration options

Not apt for
data migration



Dependent or Related Entities

More details available on [Considerations for initial synchronization](#)

Initial sync considerations

- ❑ Best used to create initial data of low volumes.
- ❑ The initial sync provides the “Show Related Entity map(s)”, so that Dataverse will sync also related entity.
- ❑ Don’t forget to check your Master for Initial Sync.
- ❑ Initial Sync won’t erase previous data from your destination application if you had some before.
- ❑ We recommend not to activate running maps in dual-write until the data migration is completed.
- ❑ Initial synchronization isn't currently supported for table maps that have 10 or more lookups
- ❑ Consider the limitation on data size Limit, refer to link [Considerations for initial synchronization - Finance & Operations | Dynamics 365 | Microsoft Docs](#) for details. Above the limits the recommendation is to migrate data into the Finance and Operations app and Dataverse separately and skip the initial synchronization. An [ADF template](#) is available to bootstrap data into Dataverse tables.
- ❑ For Dataverse instances with existing business data, [Bootstrap data with company information](#) before running initial writes (sync).
- ❑ Define your own table maps sequence.
- ❑ Don’t use initial sync as data migration replacement. Data migration requires special performance and error handling considerations that are suitable to be done before enabling dual-write.

Pause and Resume considerations for Rollouts

Dual Write provides capability of pause and resume a map once this is running:

- ☐ Map should be in running status
- ☐ Primarily designed for planned/unplanned maintenance, not for import scenarios or data migration
- ☐ Action is done in Dual Write using button Pause / Resume
- ☐ Action is multiselect
- ☐ Once map is paused, actions done in application (insert/updates) are queued – No data lost
- ☐ Once resumed, queued request are processed

Scenarios where you can use Pause and resume:

- ☐ **Maintenance** : You can pause table maps, either manually or automatically via rules. By pausing table maps, you help ensure business continuity, especially during planned or unplanned maintenance. While the app is being maintained, users can continue to do their work and create records

Scenarios where you should stop Dual Write Mapping:

- ☐ **New Legal entities** : It is recommended to stop the Dual Write mappings and perform data migration for the new legal entities added and resume the synchronization.
- ☐ **Existing Legal entities** : Adding new workload to the existing legal entity where have legacy system does not have centralized DB and needs a phased Data migration to D365.

Data Migration Considerations



Data migration considerations

- ❑ Use of initial synch to synch the data from one app to another, ensure to consider [Initial synch guidance](#), advisable mostly for reference, parameter, group tables with less volume.
- ❑ Evaluate use of single thread v/s multi thread entity usage as mentioned in [Initial synch guidance](#)
- ❑ For entities with large volume, consider stopping Dual write for entity
- ❑ Complete data migration in each app
 - Using Data management framework in Finance and Operations
 - Using Azure Data Factory (ADF) or Excel etc. in Dataverse
- ❑ Enable or Run Dual write entity after data migration and skip initial synch
- ❑ Pause/Resume feature are meant to be used to queue record during Planned/Unplanned system maintenance window. It shouldn't be used for scenarios like bulk import, data migration etc.
- ❑ In case of existing Dataverse environment, you may need to bootstrap the existing business data if you plan to enable Dual write integrated with Finance and Operations e.g. bootstrapping company data. Use Azure Data Factory template to [bootstrap your existing Dataverse data](#)



Performance
considerations

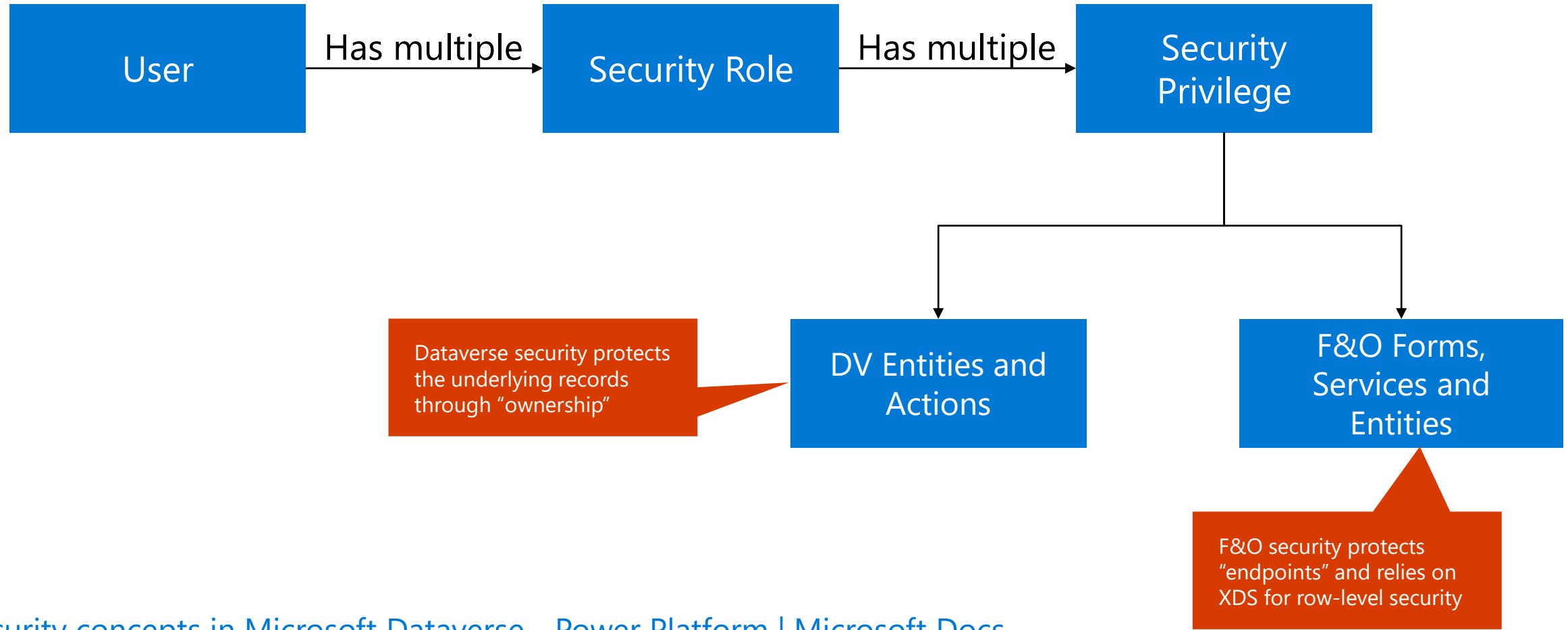
Performance considerations

- ❑ During Data migration , it is recommended to stop the dual write maps. This will avoid unnecessary business events triggers call to sync Data using dual write live sync
- ❑ To optimize performance and not overload the apps, we currently limit project executions to 500k rows per execution per project. If there must be more than 500,000 rows in a run when you the initial synchronization, we recommend that you migrate data into the Finance and Operations app and Dataverse separately, and skip the initial synchronization
- ❑ If you're running the initial synchronization from Dataverse to the Finance and Operations app, the import result must be received back from the Finance and Operations app within 24 hours. Otherwise, a time-out occurs.
- ❑ You can use both computed columns and virtual columns on D365 Finance entities. However, you should monitor the performance overhead from the additional X++ logic that is required for reads and writes. Therefore, you should avoid using virtual columns to transform or calculate additional values through X++ and expect that to go back to Dataverse within the same transaction.
- ❑ Too many business events raised. It may happen when multiple Maps sharing same data sources which will trigger updates for multiple maps and can affect the performance.
- ❑ **Slow database queries** that can contribute to the overall system process.
- ❑ Verify the entity performance by inserting/updating the records using OData calls from any third-party tools i.e. Postman, Excel add-in



Security Management considerations

Security Model



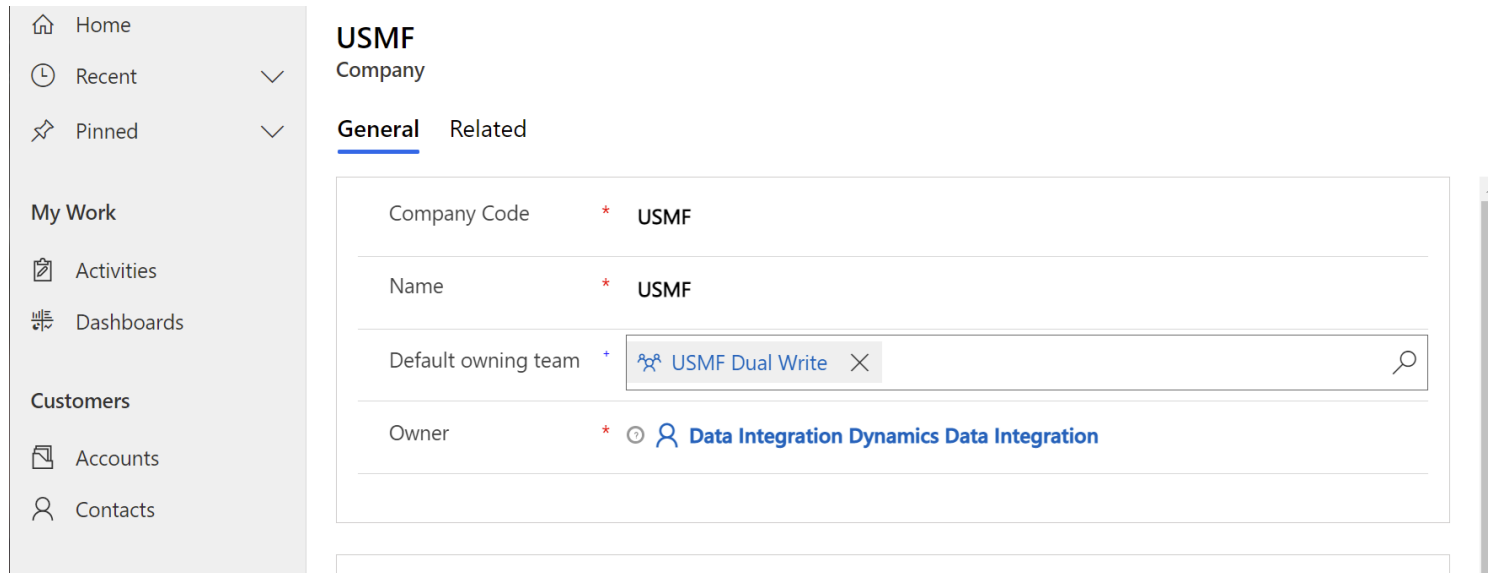
[Security concepts in Microsoft Dataverse - Power Platform | Microsoft Docs](#)

[Company concept in Dataverse - Finance & Operations | Dynamics 365 | Microsoft Docs](#)

[Role-based security - Finance & Operations | Dynamics 365 | Microsoft Docs](#)

Dual Write Security

- Runs as a service-to-service call
- User does *not* need to exist in both systems
- F&O→Dataverse, record is owned by “Default Owning Team”
- Dataverse→F&O, record is scoped by DataArea



The screenshot displays the 'USMF Company' record in the 'General' tab. The left-hand navigation pane includes sections for 'Home', 'Recent', 'Pinned', 'My Work' (with 'Activities' and 'Dashboards'), and 'Customers' (with 'Accounts' and 'Contacts'). The main content area shows the following fields:

Field	Value
Company Code	USMF
Name	USMF
Default owning team	USMF Dual Write
Owner	Data Integration Dynamics Data Integration

Dual Write Security considerations

- ❑ [Verify requirements and grant access](#)
- ❑ User authentication and role assignments are completed
 - Identify who should have System Administrator security roles assigned
 - [Security role for write access](#)
 - Ensure that users are assigned to appropriate security roles
- ❑ Conduct testing and training activities with roles in place
- ❑ For specific to Dynamics 365 Finance & Operations:
 - Use the Task Recorder and Security Diagnostics tools to identify security roles and duties needed for various tasks
 - Implement XDS and database logging only where explicitly required and alternate solutions are unavailable

Dynamics 365 Cross-apps Virtual Workshops

Register [here](#) to watch on recording for below workshops:

1. Cross-apps overview
2. Solution design
3. Implementation guidance
4. Technical

Resources

Introduction

[Dual-write overview](#)

[Dual-write home page](#)

[Dual-write release notes](#)

[Dual-write yammer group](#)

Setup

[System requirements and prerequisites](#)

[Dual-write setup from Lifecycle Services](#)

[Dual-write setup from Dual-write wizard](#)

App source

[Dual-write core solution](#)

[Dual-write application orchestration solution](#)

[Dual-write Party and Global Address Book Solutions](#)

Thank you

