



Content Manager 10 Tuning Tips and Tricks

February 2022



Introductions

Graeme Christieson

Ethan Wang

Senior Software Support Engineer/DBA

Senior Software Support Engineer



Object of the session

In this session we will discuss some tuning tips and tricks using Content Manager 10 and SQL Server 2019.

The intent here is to provide some high-level pointers. There won't be time today to discuss complex customer-specific performance issues you may have come across - for those we recommend raising a support case for deeper investigation.

Please note with any data changes you do in your Production Database make sure you take a backup first.



Topics to be covered include

1. SQL tuning - Execution Plans and Database Tuning Advisor (DTA)
2. Troubleshooting tips, workgroup server logs etc.
3. Application settings including Enterprise Studio settings
4. Schema Manager / Dealing with duplicate data
5. Working with Database Administrators (DBA's)
6. Content Manager Specifications document / Database documentation
7. Introduction to SDK online help
8. Workgroup Service restarts
9. SQL Text vs. Word Indexing / Database Statistics



1. SQL Tuning

SQL Tuning

- A timeout is the Command Timeout set in Enterprise Studio (aka TES) for the SQL generated by the CM search, it will terminate the SQL statement on the database after a set period of time
- The CM Admins would typically get an email (or a call from a user) informing them of the timeout. To collect the SQL you will need to review the WGS logs
- The execution plan is a graphical display of the SQL statement
- The Database Tuning Advisor (DTA) is a tool to help tune SQL statements.

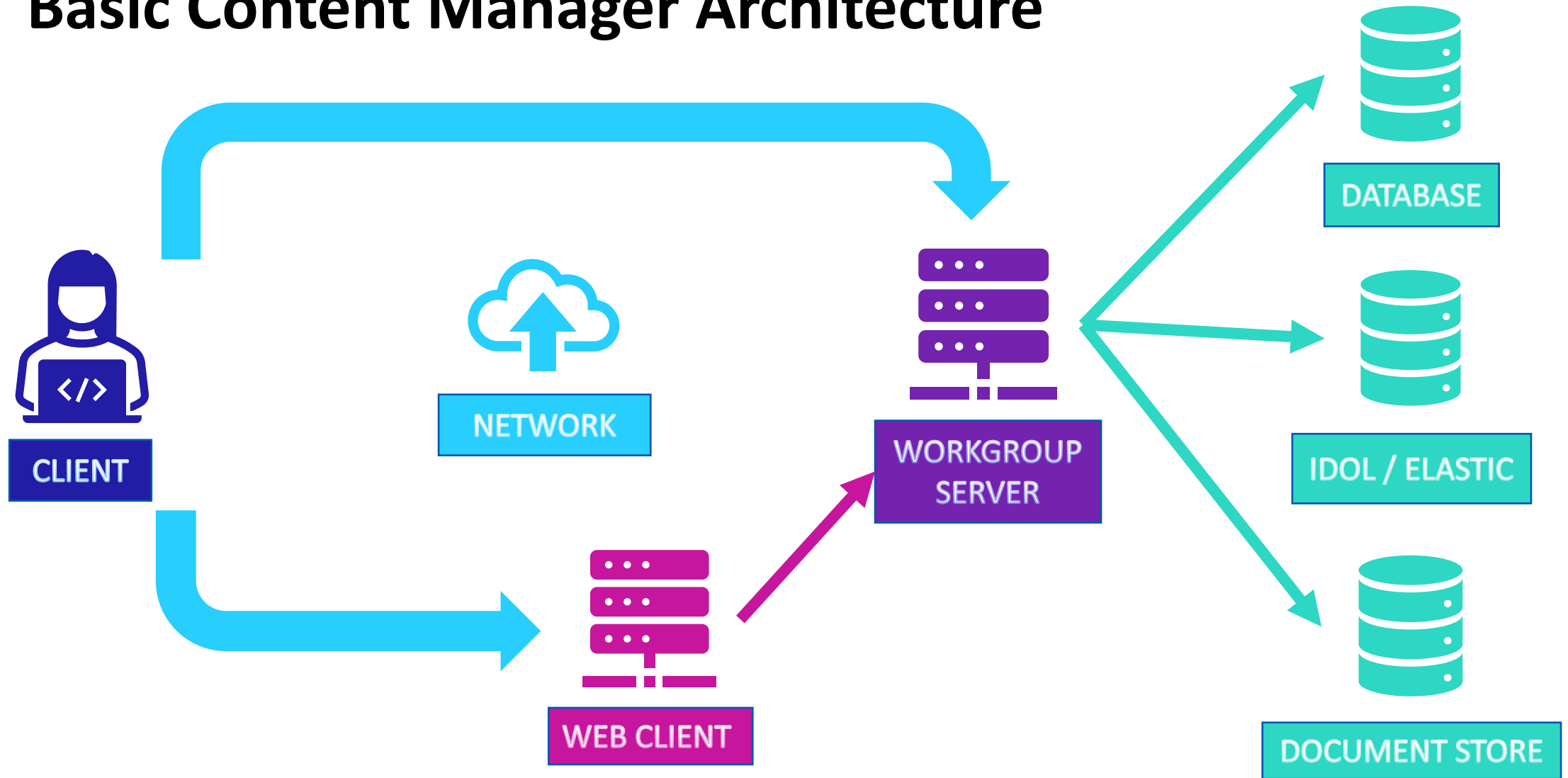


2. Troubleshooting Tips

Troubleshooting Tips

- Get a clear picture of Content Manager System Architecture
- Start from the error message (in Client session, or in WGS log)
- Determine the specific function module or area
- Turn diagnostic logging on
- Tools can be useful for further troubleshooting

Basic Content Manager Architecture



Determine the specific module or area

- Client process (TRIM.exe, TRIMWatcher.exe, External link)
- Server process (CM Server, IIS process)
- Database/Document Store
- Network (Proxy, Load Balancer)



Logs can be enabled for troubleshooting

- Full Client log
- Workgroup Server log
- Application crash dump
- CM logging for other modules



3rd Party Troubleshooting Tools

- Process Monitor (Microsoft)
- Fiddler (Telerik)
- Task Manager/Resource Monitor (Microsoft Windows)
- Wireshark (WIRESHARK)





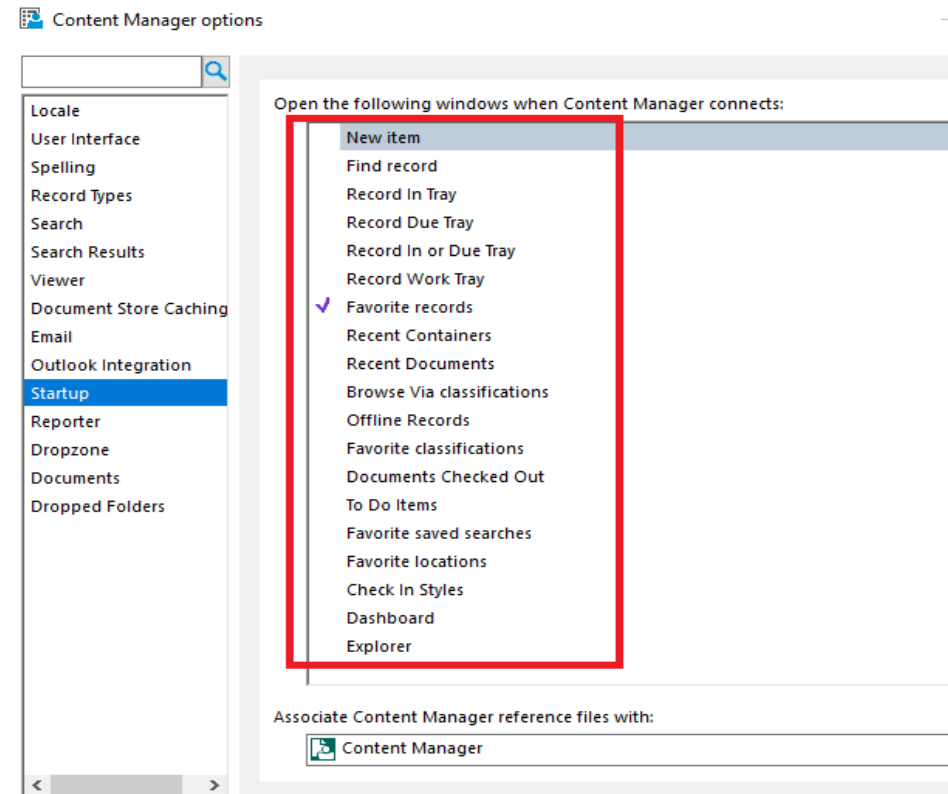
3. Settings can be used for performance tuning

Settings that can be used for tuning performance

- Content Manager Client User Option settings
- Content Manager User Search settings
- Content Manager Enterprise Studio DB settings
- Content Manager Workgroup Server settings

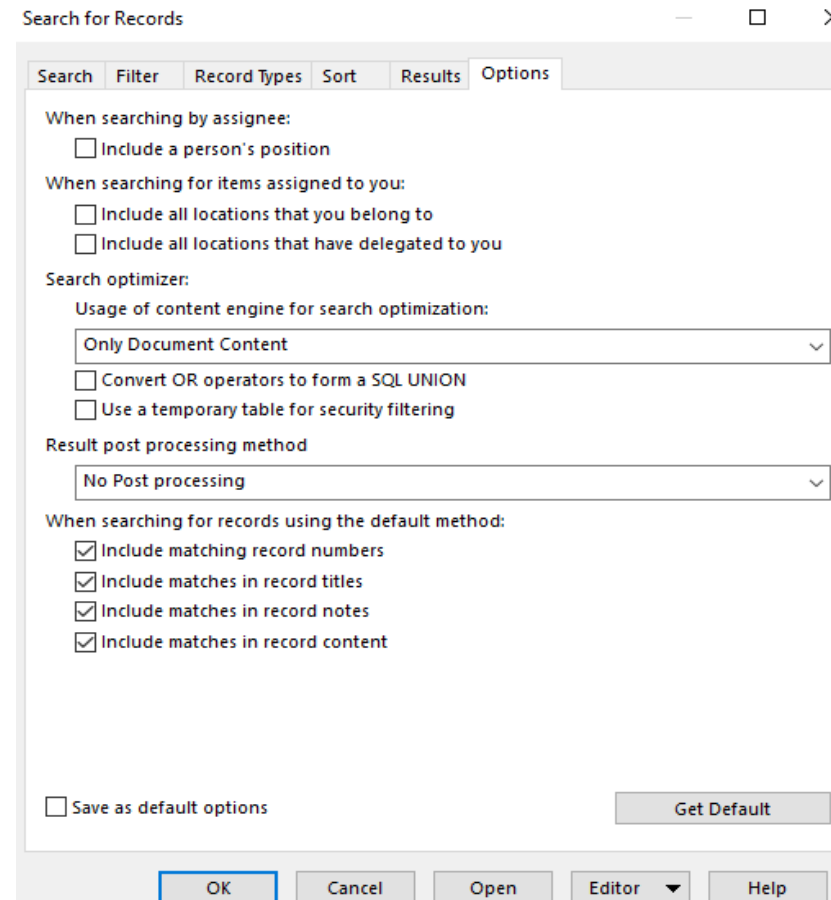
Content Manager Client User Option settings

- CM Full Client > File > Options > Startup :



Content Manager Client User Search settings

- Right click on search result in CM Full Client > Refine Search > Options tab :



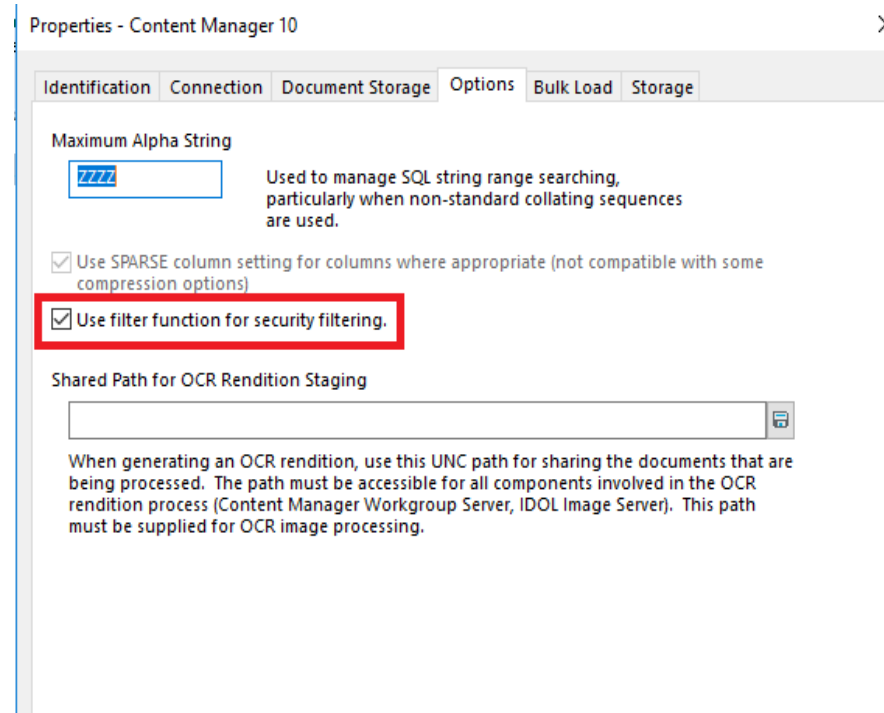
The screenshot shows the 'Search for Records' dialog box with the 'Options' tab selected. The dialog has a title bar with standard window controls and a tabbed interface with 'Search', 'Filter', 'Record Types', 'Sort', 'Results', and 'Options' tabs. The 'Options' tab contains several sections of settings:

- When searching by assignee:**
 - Include a person's position
- When searching for items assigned to you:**
 - Include all locations that you belong to
 - Include all locations that have delegated to you
- Search optimizer:**
 - Usage of content engine for search optimization:
 - Only Document Content (dropdown menu)
 - Convert OR operators to form a SQL UNION
 - Use a temporary table for security filtering
- Result post processing method**
 - No Post processing (dropdown menu)
- When searching for records using the default method:**
 - Include matching record numbers
 - Include matches in record titles
 - Include matches in record notes
 - Include matches in record content

At the bottom of the dialog, there is a checkbox for 'Save as default options' and a 'Get Default' button. The bottom-most bar contains 'OK', 'Cancel', 'Open', 'Editor' (with a dropdown arrow), and 'Help' buttons.

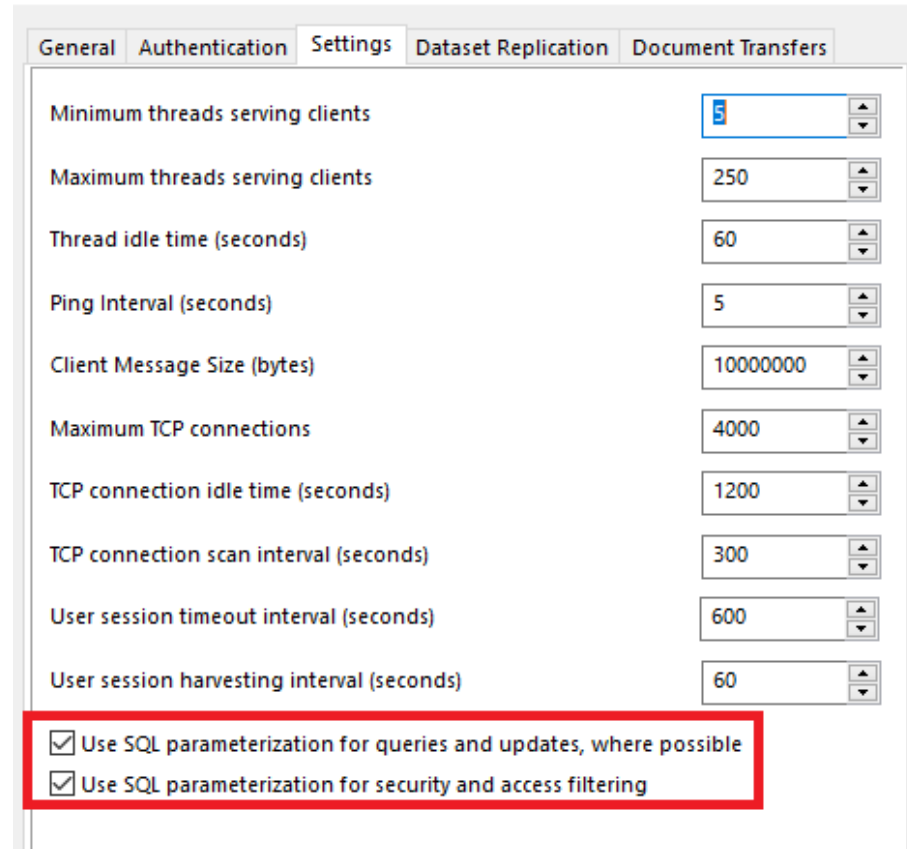
Content Manager Enterprise Studio dataset settings

- CM Enterprise Studio > Right click on Dataset > Properties



Workgroup server settings

- Content Manager Enterprise Studio > Right click on Workgroup server > Properties



The screenshot displays the 'Settings' tab of the Content Manager Enterprise Studio configuration window. The window has five tabs: 'General', 'Authentication', 'Settings', 'Dataset Replication', and 'Document Transfers'. The 'Settings' tab is active and contains the following configuration items:

Property	Value
Minimum threads serving clients	5
Maximum threads serving clients	250
Thread idle time (seconds)	60
Ping Interval (seconds)	5
Client Message Size (bytes)	10000000
Maximum TCP connections	4000
TCP connection idle time (seconds)	1200
TCP connection scan interval (seconds)	300
User session timeout interval (seconds)	600
User session harvesting interval (seconds)	60
<input checked="" type="checkbox"/> Use SQL parameterization for queries and updates, where possible	
<input checked="" type="checkbox"/> Use SQL parameterization for security and access filtering	

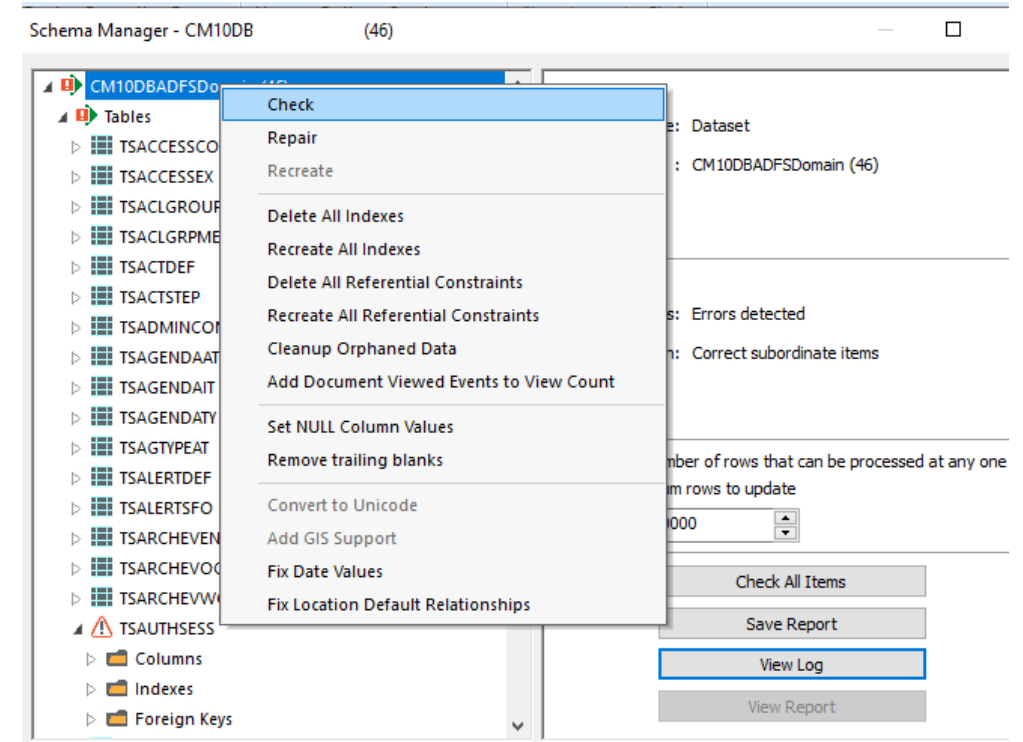
The last two rows, which are checked, are highlighted with a red rectangular border.



4. Schema Manager

Schema Manager

- Why mentioning Schema Manager
- Schema Check
- Schema Repair/Recreate
- Schema Analyse



Using Schema Manager to detect and resolve Schema issues

- Duplicate Entries (For example, TSBARCODE, TSERECVSN)
- Demo

The screenshot shows the Schema Manager interface for Content Manager 10 (10). The left pane displays a tree view of the schema. The 'Indexes' folder is expanded, showing a primary key 'uri' and a duplicate index 'evRecElecUri (unique)'. The 'evRecElecUri (unique)' index is highlighted with a blue bar and a red box. The right pane shows the 'Selected Item' details for 'evRecElecUri' (Type: Index, Name: evRecElecUri). Below this, the 'Test Results' section shows a status of 'Errors detected' and an action: 'Correct duplicate data'. A red box highlights the error message: 'Error: The index evRecElecUri in table TSERECVSN is meant to be unique but the combination of'. At the bottom, there are buttons for 'Check All Items', 'Save Report', 'View Log', and 'View Report', along with a checkbox for 'Limit the number of rows that can be processed at any one tin' and a 'Maximum rows to update' field set to 10000000.



5. Working with DBA's

Working with DBA's

- CM Admins should work with their Database Administrators (DBA's) in the first instance to see if they can fix the performance issues, or if they can't, again work with the DBA's to gather the information we require when raising a support case. (WGS logs, Execution plan)
- This is all about saving time
- Make sure the DBA's are gathering the correct database Statistics
- Backups - make sure they are testing them.



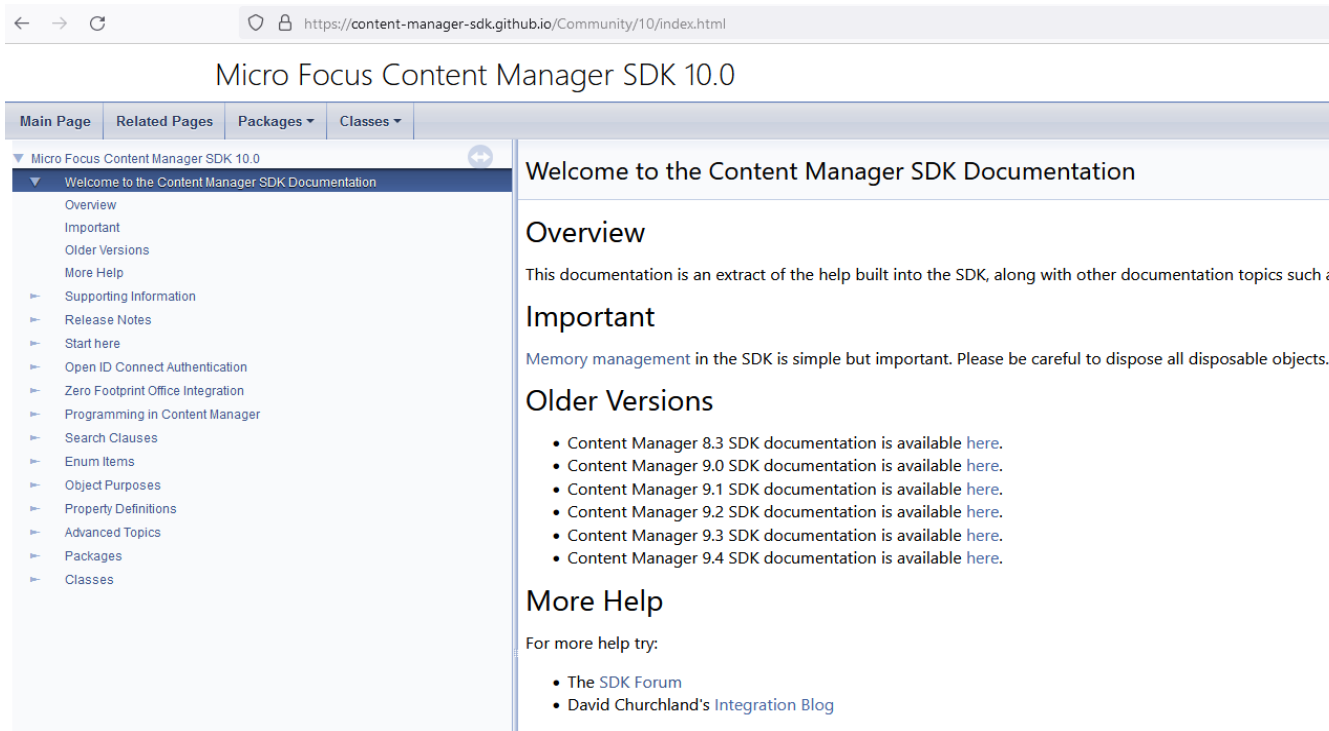
6. Content Manager 10 Specifications document / Database Documentation



7. Introduction to SDK Online Help

Introduction to SDK Online Help

- URL to SDK Online Help
 - <https://content-manager-sdk.github.io/Community/10/index.html>



The screenshot shows a web browser displaying the Micro Focus Content Manager SDK 10.0 online help page. The browser's address bar shows the URL <https://content-manager-sdk.github.io/Community/10/index.html>. The page title is "Micro Focus Content Manager SDK 10.0". The navigation menu includes "Main Page", "Related Pages", "Packages", and "Classes". The left sidebar contains a tree view with the following items: "Welcome to the Content Manager SDK Documentation" (selected), "Overview", "Important", "Older Versions", "More Help", "Supporting Information", "Release Notes", "Start here", "Open ID Connect Authentication", "Zero Footprint Office Integration", "Programming in Content Manager", "Search Clauses", "Enum Items", "Object Purposes", "Property Definitions", "Advanced Topics", "Packages", and "Classes". The main content area displays the "Welcome to the Content Manager SDK Documentation" page, which includes an "Overview" section stating that the documentation is an extract of the help built into the SDK, an "Important" section about memory management, an "Older Versions" section with links to SDK documentation from version 8.3 to 9.4, and a "More Help" section with links to the SDK Forum and David Churchland's Integration Blog.

What is covered

- SDK Online Help for each version of Content Manager SDK
- SDK Release Notes
- Information about how to use SDK and how to program in Content Manager
- Open ID Connect Authentication (Azure AD, ADFS) and OneDrive integration
 - Full Client, Web Client, Office Integration
- Zero Footprint Office Integration



8. Workgroup Service restarts



9. SQL Text / Database Statistics



Thank You.



MICRO[®]
FOCUS