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Product Implementation Training (PIT)

IBM FileNet Content Manager 5.2 Result Counts



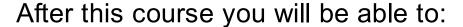
Introduction

- Course Overview
 - Result Count Architecture
 - Demonstration
 - Best Practices, Troubleshooting and Documentation
- Target Audience
 - Customer Support and Field Technical Resources
- Prerequisites
 - Familiarity with Content Platform Engine
- Release Date March 2013

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Course Objectives



- Understand the Result Count Architecture
- Configure Server Settings
- Write CE API Code for Result Counts
- Know Best Practices and Troubleshoot



Course Roadmap

- Product Fundamentals
 - Result Count Architecture
 - Server Settings
 - Coding a Result Count Search
- Demonstration
- Best Practices
- Troubleshooting
- Documentation



Result Count Architecture

- Use Case: A general user would like an indication of how many more results lie ahead in a CE API search against an object store
 - How many more items are in a folder than the display shows
 - How many more search results could be paged to
- New Feature: Searches can specify a "Look Ahead" count option
 - SELECT ... FROM ... OPTION (COUNT_LIMIT N)
 - Only allowed for paged searches
 - Look ahead is only done once, as part of the first page request
 - Look ahead pages internally at 2x pagesize to count to N
 - Allows extended result set traversal if desired
 - Can still be slow for millions of results
 - Security access to results is checked



Result Count Architecture (cont'd)

- New Feature (cont'd):
 - SELECT ... FROM ... OPTION (COUNT_LIMIT N)
 - Must use the CE API to access the count
 - CE API page iterator method call getTotalCount()
 - Compatible with TOP N
 - Effective count limit is Min(Count Limit N, Top N)
 - Compatible with CBR
 - Timeout during look ahead returns partial count found
 - Timeout during any search is now thrown when the following page is retrieved to allow for partial result sets
 - Not allowed with merged scope searches



Server Settings

- Domain ServerCacheConfiguration properties
 - QueryCountDefaultSize
 - Used when N = 0 in the COUNT_LIMIT Option
 - Default is twice QueryPageDefaultSize
 - QueryCountMaxSize
 - Server-wide maximum
 - Caps look ahead requested in user searches
 - Default is twice QueryPageMaxSize
 - Setting value to 0 disables all look ahead
 - In case of an impact on system performance



Coding Result Counts

- Java method:
 - Interface PageIterator
 - Method: Integer getTotalCount();
- C# property:
 - Interface IPageEnumerator
 - Property: Nullable<int> TotalCount;
- Return values:
 - null: Unknown or not requested
 - >= 0 : Exact count
 - < 0 : Minimum (negative of the minimum value)</p>



Coding Result Counts (cont'd)

Pseudo Java Code

```
SearchSQL sql = new SearchSQL(sqlString);
SearchScope ss = new SearchScope(objStore);
RepositoryRowSet rrs = ss.fetchRows(sql, pageSize, null, true);
PageIterator iter = rrs.pageIterator();
Integer resultCount = iter.getTotalCount();
while (iter.nextPage())
   RepositoryRow [] rr = iter.getCurrentPage();
```



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Best Practices

- Result Counts work best when:
 - COUNT_LIMIT is a multiple of twice the search page size
 - Search has a WHERE condition on an indexed property
 - Keep in mind the RPC time limit settings on the server
 - Keep the search page size < few thousand
 - Frees shared locks
 - Avoids table scans
 - Set the QueryCountMaxSize as needed for performance controls



Troubleshooting

- Result Count is slow
 - Ensure search uses an indexed property
 - Multiple pages will return multiply slow if first page is not fast
 - Check the paging search time using P8 server tracing
 - Enable P8 Server tracing for Search and Database (with detail)
- Result Count times out
 - Ensure the Object Store RPC Timeout is large enough
 - DefaultQueryTimeLimit
 - MaxQueryTimeLimit



Documentation

- SQL Syntax Reference Query Option: Count_Limit
 - Internal Information Center (available now):
 - http://cmfogbert.usca.ibm.com:7777/p8ic520/topic/ com.ibm.p8.ce.dev.ce.doc/ query_sql_syntax_rel_queries.htm
 - External Information Center (available at eGA):
 - http://pic.dhe.ibm.com/infocenter/p8docs/v5r2m0/topic/ com.ibm.p8.ce.dev.ce.doc/ query_sql_syntax_rel_queries.htm

