# Query Log above 5 seconds

{"t":{"$date":"2025-02-03T09:51:26.433+00:00"},"s":"I", "c":"COMMAND", "id":51803, "ctx":"conn12149","msg":"Slow query","attr":{"type":"command","ns":"Registration.extendedPatient","command":{"find":"extendedPatient","filter":{"primaryIdentifierList.code":"Passport","primaryIdentifierList.value":"FWTv8kGIYtfKC5DWum0RcQ=="},"$db":"Registration"},"planSummary":"COLLSCAN","planningTimeMicros":100344,"keysExamined":0,"docsExamined":23598,"nBatches":1,"cursorExhausted":true,"numYields":31,"nreturned":1,"queryHash":"B139802E","planCacheKey":"B139802E","queryFramework":"classic","reslen":2869,"locks":{"FeatureCompatibilityVersion":{"acquireCount":{"r":32}},"Global":{"acquireCount":{"r":32}}},"storage":{},"cpuNanos":98138127,"remote":"10.42.3.227:35704","protocol":"op\_msg","durationMillis":5982}}

{"t":{"$date":"2025-02-03T09:51:26.551+00:00"},"s":"I", "c":"COMMAND", "id":51803, "ctx":"conn12157","msg":"Slow query","attr":{"type":"command","ns":"Registration.extendedPatient","command":{"find":"extendedPatient","filter":{"primaryIdentifierList.code":"Passport","primaryIdentifierList.value":"FWTv8kGIYtfKC5DWum0RcQ=="},"$db":"Registration"},"planSummary":"COLLSCAN","planningTimeMicros":401049,"keysExamined":0,"docsExamined":23598,"nBatches":1,"cursorExhausted":true,"numYields":26,"nreturned":1,"queryHash":"B139802E","planCacheKey":"B139802E","queryFramework":"classic","reslen":2869,"locks":{"FeatureCompatibilityVersion":{"acquireCount":{"r":27}},"Global":{"acquireCount":{"r":27}}},"storage":{},"cpuNanos":92562810,"remote":"10.42.2.241:47666","protocol":"op\_msg","durationMillis":5119}}

{"t":{"$date":"2025-02-03T09:51:26.845+00:00"},"s":"I", "c":"COMMAND", "id":51803, "ctx":"conn12155","msg":"Slow query","attr":{"type":"command","ns":"Registration.extendedPatient","command":{"find":"extendedPatient","filter":{"primaryIdentifierList.code":"Passport","primaryIdentifierList.value":"FWTv8kGIYtfKC5DWum0RcQ=="},"$db":"Registration"},"planSummary":"COLLSCAN","planningTimeMicros":406326,"keysExamined":0,"docsExamined":23598,"nBatches":1,"cursorExhausted":true,"numYields":28,"nreturned":1,"queryHash":"B139802E","planCacheKey":"B139802E","queryFramework":"classic","reslen":2869,"locks":{"FeatureCompatibilityVersion":{"acquireCount":{"r":29}},"Global":{"acquireCount":{"r":29}}},"storage":{},"cpuNanos":93759372,"remote":"10.42.0.156:46656","protocol":"op\_msg","durationMillis":6513}}

{"t":{"$date":"2025-02-03T09:51:27.547+00:00"},"s":"I", "c":"COMMAND", "id":51803, "ctx":"conn12116","msg":"Slow query","attr":{"type":"command","ns":"Registration.extendedPatient","command":{"find":"extendedPatient","filter":{"primaryIdentifierList.code":"Passport","primaryIdentifierList.value":"FWTv8kGIYtfKC5DWum0RcQ=="},"$db":"Registration"},"planSummary":"COLLSCAN","planningTimeMicros":119106,"keysExamined":0,"docsExamined":23600,"nBatches":1,"cursorExhausted":true,"numYields":29,"nreturned":1,"queryHash":"B139802E","planCacheKey":"B139802E","queryFramework":"classic","reslen":2869,"locks":{"FeatureCompatibilityVersion":{"acquireCount":{"r":30}},"Global":{"acquireCount":{"r":30}}},"storage":{},"cpuNanos":96204571,"remote":"10.42.3.227:34150","protocol":"op\_msg","durationMillis":5616}}

{"t":{"$date":"2025-02-03T09:51:28.953+00:00"},"s":"I", "c":"COMMAND", "id":51803, "ctx":"conn12222","msg":"Slow query","attr":{"type":"command","ns":"Registration.extendedEncounter","command":{"aggregate":"extendedEncounter","pipeline":[{"$lookup":{"from":"extendedPatient","localField":"subject.identifier.value","foreignField":"identifier.value","as":"patient"}},{"$match":{"id":"d5d73c55-76dc-4828-ad33-d0fde454c8ed","unitCode":"HISCKL","orgCode":"HATI"}},{"$sort":{"createdDate":-1}},{"$facet":{"response":[{"$limit":1},{"$skip":0}],"countingStars":[{"$count":"totalPatientRecords"}]}},{"$project":{"response":1,"totalRecords":{"$arrayElemAt":["$countingStars.totalPatientRecords",0]}}}],"cursor":{},"allowDiskUse":false,"$db":"Registration"},"planSummary":"IXSCAN { createdDate: 1 }","planningTimeMicros":5105503,"keysExamined":24897,"docsExamined":24897,"fromPlanCache":true,"cursorExhausted":true,"numYields":28,"nreturned":1,"queryHash":"427C11D5","planCacheKey":"8BA33D89","queryFramework":"sbe","reslen":5162,"locks":{"FeatureCompatibilityVersion":{"acquireCount":{"r":30}},"Global":{"acquireCount":{"r":30}}},"storage":{},"cpuNanos":108039299,"remote":"10.42.0.156:46808","protocol":"op\_msg","durationMillis":5522}}

{"t":{"$date":"2025-02-03T09:51:29.545+00:00"},"s":"I", "c":"COMMAND", "id":51803, "ctx":"conn12163","msg":"Slow query","attr":{"type":"command","ns":"Registration.extendedPatient","command":{"find":"extendedPatient","filter":{"primaryIdentifierList.code":"Passport","primaryIdentifierList.value":"FWTv8kGIYtfKC5DWum0RcQ=="},"$db":"Registration"},"planSummary":"COLLSCAN","planningTimeMicros":110826,"keysExamined":0,"docsExamined":23601,"nBatches":1,"cursorExhausted":true,"numYields":27,"nreturned":1,"queryHash":"B139802E","planCacheKey":"B139802E","queryFramework":"classic","reslen":2869,"locks":{"FeatureCompatibilityVersion":{"acquireCount":{"r":28}},"Global":{"acquireCount":{"r":28}}},"storage":{},"cpuNanos":94845887,"remote":"10.42.2.241:47712","protocol":"op\_msg","durationMillis":8113}}

{"t":{"$date":"2025-02-03T09:51:29.763+00:00"},"s":"I", "c":"COMMAND", "id":51803, "ctx":"conn12203","msg":"Slow query","attr":{"type":"command","ns":"Registration.extendedPatient","command":{"find":"extendedPatient","filter":{"primaryIdentifierList.code":"Passport","primaryIdentifierList.value":"FWTv8kGIYtfKC5DWum0RcQ=="},"$db":"Registration"},"planSummary":"COLLSCAN","planningTimeMicros":622840,"keysExamined":0,"docsExamined":23601,"nBatches":1,"cursorExhausted":true,"numYields":28,"nreturned":1,"queryHash":"B139802E","planCacheKey":"B139802E","queryFramework":"classic","reslen":2869,"locks":{"FeatureCompatibilityVersion":{"acquireCount":{"r":29}},"Global":{"acquireCount":{"r":29}}},"storage":{},"cpuNanos":92171134,"remote":"10.42.2.241:47782","protocol":"op\_msg","durationMillis":5726}}

## Suggestions form slow queries

Your MongoDB logs indicate **slow queries** in the Registration.extendedPatient and Registration.extendedEncountercollections. The issue appears to be **collection scans (COLLSCAN)**, which means MongoDB is scanning all documents instead of using an index.

**Identified Issues**

1. **Full Collection Scan (COLLSCAN)**

• The find queries on extendedPatient do **not use an index**.

• The filter on primaryIdentifierList.code and primaryIdentifierList.value suggests an index is missing.

2. **High docsExamined Count**

• docsExamined: 23601 (scanning all documents instead of efficiently filtering).

• keysExamined: 0 (indicates no index is used).

3. **Slow Aggregation on extendedEncounter**

• Uses $lookup, $match, $sort, $facet, and $project, which are **expensive operations** if indexing is absent.

**Solution: Index Optimization**

To **improve performance**, create appropriate indexes for faster lookups.

**1. Index for extendedPatient Query**

db.extendedPatient.createIndex(

{ "primaryIdentifierList.code": 1, "primaryIdentifierList.value": 1 }

);

• This index allows **fast lookup** based on code and value.

**2. Index for extendedEncounter Query**

db.extendedEncounter.createIndex(

{ "id": 1, "unitCode": 1, "orgCode": 1, "createdDate": -1 }

);

• Indexing id, unitCode, orgCode, and createdDate speeds up filtering and sorting.

**3. Optimize $lookup Performance**

Ensure the extendedPatient collection has an index on identifier.value for efficient $lookup:

db.extendedPatient.createIndex({ "identifier.value": 1 });

**Expected Performance Improvement**

• Indexes reduce **query execution time** from **several seconds (5000ms+)** to **milliseconds**.

• docsExamined should drop **significantly**, meaning fewer documents scanned.

• planSummary should **change from COLLSCAN to IXSCAN**, meaning queries use indexes.

After adding the indexes, run **explain()** to verify improvements:

db.extendedPatient.find(

{ "primaryIdentifierList.code": "Passport", "primaryIdentifierList.value": "FWTv8kGIYtfKC5DWum0RcQ==" }

).explain("executionStats");

Look for:

• "winningPlan": { "stage": "IXSCAN" }

• "totalDocsExamined": Very Low

• "executionTimeMillis": Much Lower

**Final Thoughts**

Adding indexes should **eliminate slow queries** and **drastically improve performance**. Try it out and let me know if you need more tuning! 🚀