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Query and Projection Operators

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Operators**

NOTE

For details on a specific operator, including syntax and examples,



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click on
the link
to the
operator's
reference
page.

Compatibility

You can use query and projection operators for deployments hosted in the following environments:

- **MongoDB Atlas**
: The fully managed service for MongoDB deployments in the cloud
- **MongoDB Enterprise**: The subscription-based, self-managed version of MongoDB

- MongoDB Community:
The source-available, free-to-use, and self-managed version of MongoDB

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TIP

You can use operators when querying your data with `mongosh` methods, the Atlas UI, or Compass.

Query Selectors

Comparison

For comparison of different BSON type values, see the

specified BSON
comparison order.

Name	Description
<code>\$eq</code>	Matches values that are equal to a specified value.
<code>\$gt</code>	Matches values that are greater than a specified value.
<code>\$gte</code>	Matches values that are greater than or equal to a specified value.
<code>\$in</code>	Matches any of the values specified in an array.
<code>\$lt</code>	Matches values that are less than a specified value.
<code>\$lte</code>	Matches values that are less than or equal to a specified value.



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Name	Description
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<code>\$ne</code>	Matches all values that are not equal to a specified value.
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<code>\$nin</code>	Matches none of the values specified in an array.
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Logical

Name	Description
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<code>\$and</code>	Joins query clauses with a logical <code>AND</code> returns all documents that match the conditions of both clauses.
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<code>\$not</code>	Inverts the effect of a query expression and returns documents that do <i>not</i> match the query expression.
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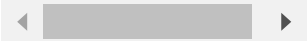
MongoDB Server
Parameters

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Name	Description
<code>\$nor</code>	Joins query clauses with a logical NOR returns all documents that fail to match both clauses.
<code>\$or</code>	Joins query clauses with a logical OR returns all documents that match the conditions of either clause.

Element

Name	Description
<code>\$exists</code>	Matches documents that have the specified field.
<code>\$type</code>	Selects documents if a field is of the specified type.



Evaluation

Name	Description
<code>\$expr</code> Share Feedback	Allows of aggregation expressions within the query language
<code>\$jsonSchema</code>	Validates documents against a given JSON Schema
<code>\$mod</code>	Performs modular arithmetic operation on the value of a field and selects documents with a specific result.
<code>\$regex</code>	Selects documents where values match a specific regular expression
<code>\$text</code>	Performs text search

Name	Description
<code>\$where</code>	Matches documents that satisfy a JavaScript expression.

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Geospatial

Name	Description
<code>\$geoIntersects</code>	Selects documents whose location intersects a given GeoJSON geometry. The <code>\$geoIntersects</code> operator requires the <code>\$geometry</code> key in the query object.
<code>\$geoWithin</code>	Selects documents whose location is within a given GeoJSON geometry. The <code>\$geoWithin</code> operator requires the <code>\$geometry</code> key in the query object.
<code>\$near</code>	Returns documents whose location is near a given point. The <code>\$near</code> operator requires the <code>\$geometry</code> key in the query object.

Name	Description
<code>\$nearSphere</code>	Returns documents that are near a specified geographic location. The location is specified as a GeoJSON object. The operator uses the spherical law of cosines to find the documents closest to the point. The documents are sorted by distance from the point, and the maximum distance is specified by the <code>\$maxDistance</code> operator. The operator also supports a <code>\$minDistance</code> operator to specify a minimum distance. The operator is only available for 2d and 2dsphere indexes.

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Array

Name	Description
<code>\$all</code>	Matches documents that contain all of the elements specified in the query.
<code>\$elemMatch</code>	Selects documents that contain an array field that matches the specified condition. The <code>\$elemMatch</code> operator is used to specify a condition for an array field. The condition is a query that is applied to each element of the array. The documents that contain at least one element that matches the condition are selected.

Name	Description
<code>\$size</code>	Selects documents where the array field is a specified size.

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Bitwise

Name	Description
<code>\$bitsAllClear</code>	Matches documents where the binary value of the field has all the bits of the specified bit positions have a value of 0.
<code>\$bitsAllSet</code>	Matches documents where the binary value of the field has all the bits of the specified bit positions have a value of 1.



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Name	Description
<code>\$bitsAnyClear</code>	Matches documents whose binary value, which bit field set contains positions has of 0
<code>\$bitsAnySet</code>	Matches documents whose binary value, which bit field set contains positions has of 1

Projection Operators

Name	Description
<code>\$</code>	Projects first element in an array that matches query condition

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Name	Description
<code>\$elemMatch</code>	Projects the first element in an array that matches the specified <code>\$elemMatch</code> condition.
<code>\$meta</code>	Projects documents based on the score assigned during a <code>\$text</code> operation.
<code>\$slice</code>	Limits the number of elements projected from an array. Supports skip and limit slicing.

Miscellaneous Operators

Name	Description
<code>\$comment</code>	Adds a comment to a query predicate.

Name	Description
<code>\$rand</code>	Generates a random float between 0 and 1.

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