
Command Reference: ReadReclamationHDB()

Read time series from a Reclamation HDB database

Version 10.20.00, 2013-04-21

The `ReadReclamationHDB()` command reads one or more time series from a Reclamation HDB database:

- a single time series (which can be part of an ensemble), indicated by the individual time series identifier:
 - a “real” time series (observations)
 - a “model” time series (output from a model)
- all time series in an ensemble, indicated by the ensemble identifier:
 - ensemble trace time series are stored as “model” time series – individual ensemble trace time series can be queried by specifying the appropriate “hydrologic indicator” (which is set to the ensemble time series sequence number from TSTool time series)

See the `WriteReclamationHDB()` command documentation for information about writing the time series that are read by this command. See the **Reclamation HDB Data Store Appendix** for more information about the database features and limitations.

When reading a single time series or ensemble, the choices presented to the user cascade to allow only valid choices.

The following dialog is used to edit the command and illustrates the syntax of the command when reading “real” or “model” data using filters. This approach can be used when reading one or more time series in bulk. **Where** criteria should be specified in sequential order without intervening blank specifiers.

Edit ReadReclamationHDB Command

Read one or more time series, or an ensemble, from a Reclamation HDB database.
 Constrain the query by specifying time series metadata to match.
 Specify date/times using the format YYYY-MM-DD hh:mm:ss, to a precision appropriate for the data interval (default=input period from SetInputPeriod()).

Datastore: Required - datastore containing data.

Data interval: Required - data interval (time step) for time series.

Specify how to match HDB time series or ensemble

☒ Read 1+ time series using filter ☐ Read single time series or ensemble

Use these parameters when reading 1+ time series from HDB.

Data type: Required - data type for time series.

Where: Site - Common Name	<input type="text" value="Matches"/>	<input type="text" value="AAA_DELETE"/>
Where:	<input type="text" value="Matches"/>	<input type="text"/>
Where:	<input type="text" value="Matches"/>	<input type="text"/>
Where:	<input type="text" value="Matches"/>	<input type="text"/>
Where:	<input type="text" value="Matches"/>	<input type="text"/>
Where:	<input type="text" value="Matches"/>	<input type="text"/>

Optional - query filters.

Input start: Optional - override the global input start.

Input end: Optional - override the global input end.

Alias to assign: Optional - use %L for location, etc. (default=no alias).

Command: `ReadReclamationHDB (DataStore="ReclamationHDB-Dev", Interval="Day", DataType="stream gage - flow", Where1="Site - Common Name; Matches; AAA_DELETE", SiteCommonName="AAA_DELETE", DataTypeCommonName="current air temp", EnsembleTraceID="null", Alias="%L-%T")`

ReadReclamationHDB

ReadReclamationHDB() Command Editor When Using Filters to Read 1+ Time Series

The following figure illustrates reading a single “real” time series (note that the model parameters are not specified).

Edit ReadReclamationHDB Command

Read one or more time series, or an ensemble, from a Reclamation HDB database.
 Constrain the query by specifying time series metadata to match.
 Specify date/times using the format YYYY-MM-DD hh:mm:ss, to a precision appropriate for the data interval (default=input period from SetInputPeriod()).

Datastore: Required - datastore containing data.

Data interval: Required - data interval (time step) for time series.

Specify how to match HDB time series or ensemble

Read 1+ time series using filter | **Read single time series or ensemble**

Specify how to match the HDB site_datatype_id

Site common name: Required - used with data type common name to determine site_datatype_id.

Data type common name: Required - used with site common name to determine site_datatype_id.

Matching site_id: 100072 (9 matches) Information - useful when comparing to database contents.

Matching site_datatype_id: 101355 Information - useful when comparing to database contents.

Site data type ID: Optional - alternative to selecting above choices.

Specify how to match HDB model_run_id for single model time series or ensemble of model time series

Single model time series | Ensemble of model time series

Use these parameters when reading an individual model time series from HDB.

Model name: Required - used to determine the model_run_id.

Model run name: Required - used to determine the model_run_id.

Model run date: Required - YYYY-MM-DD hh:mm, used to determine the model_run_id.

Hydrologic indicator: Required - used to determine the model_run_id.

Selected model_id: No matches Information - useful when comparing to database contents.

Selected model_run_id: No matches Information - useful when comparing to database contents.

Model run ID: Optional - alternative to selecting above choices.

Input start: Optional - override the global input start.

Input end: Optional - override the global input end.

Alias to assign: => %L-%T Optional - use %L for location, etc. (default=no alias).

Command:
 ReadReclamationHDB (DataStore="ReclamationHDB-Dev", Interval="Day", DataType="stream gage - flow", Where1="Site - Common Name; Matches; AAA_DELETE", SiteCommonName="AAA_DELETE", DataTypeCommonName="current air temp", EnsembleTraceID="null", Alias="%L-%T")

ReadReclamationHDB_Real

ReadReclamationHDB() Command Editor to Read a Single Real Time Series

The following figure illustrates reading a single “model” time series, in which case model parameters are specified in addition to the site and data type parameters.

Edit ReadReclamationHDB Command

Read one or more time series, or an ensemble, from a Reclamation HDB database.
Constrain the query by specifying time series metadata to match.
Specify date/times using the format YYYY-MM-DD hh:mm:ss, to a precision appropriate for the data interval (default=input period from SetInputPeriod()).

Datastore: Required - datastore containing data.

Data interval: Required - data interval (time step) for time series.

Specify how to match HDB time series or ensemble

Read 1+ time series using filter | Read single time series or ensemble

Specify how to match the HDB site_datatype_id

Site common name: Required - used with data type common name to determine site_datatype_id.

Data type common name: Required - used with site common name to determine site_datatype_id.

Matching site_id: 100210 (3 matches) Information - useful when comparing to database contents.

Matching site_datatype_id: 100764 Information - useful when comparing to database contents.

Site data type ID: Optional - alternative to selecting above choices.

Specify how to match HDB model_run_id for single model time series or ensemble of model time series

Single model time series | Ensemble of model time series

Use these parameters when reading an individual model time series from HDB.

Model name: Required - used to determine the model_run_id.

Model run name: Required - used to determine the model_run_id.

Model run date: Required - YYYY-MM-DD hh:mm, used to determine the model_run_id.

Hydrologic indicator: Required - used to determine the model_run_id.

Selected model_id: 5 Information - useful when comparing to database contents.

Selected model_run_id: No matches Information - useful when comparing to database contents.

Model run ID: Optional - alternative to selecting above choices.

Input start: Optional - override the global input start.

Input end: Optional - override the global input end.

Alias to assign: Optional - use %L for location, etc. (default=no alias).

Command:
ReadReclamationHDB (DataStore="ReclamationHDB-Dev", Interval="Day", DataType="stream gage - flow", Where1="Site - Common Name; Matches; AAA_DELETE", SiteCommonName="ABVFLTCO", DataTypeCommonName="Total Delivery Volume", ModelName="NWS CBRFC Forecast", ModelRunName="CBRFC ESP Forecast Loader", ModelRunDate="2013-01-07 00:00", HydrologicIndicator="1975", Alias="%L-%T")

Cancel OK

ReadReclamationHDB_Model

ReadReclamationHDB() Command Editor to Read a Single Model Time Series

The following figure illustrates reading an ensemble of “model” time series, in which case ensemble/model parameters are specified in addition to the site and data type parameters.

ReadReclamationHDB_Ensemble

ReadReclamationHDB() Command Editor to Read an Ensemble of Model Time Series

The command syntax is as follows:

```
ReadReclamationHDB (Parameter=Value, ...)
```

Command Parameters

Parameter	Description	Default
DataStore	Reclamation HDB data store name indicating database from which to read time series.	None – must be specified.
Interval	The data interval to read (Hour, Day, Month, Year, Irregular). Irregular is used for instantaneous data and internally results in data with date/times to minute precision. 2Hour, 3Hour, 4Hour, 6Hour, 12Hour, and 24Hour can also be included, but how can HDB be queried to limit choices to these intervals? This interval is important because it tells TSTool how to allocate	None – must be specified.

Parameter	Description	Default
	memory for data values, and iterate through data.	
	Use the following parameter when reading 1+ time series using filters	
DataType	The data type to read as ObjectType - DataTypeCommonName. The object type is shown to help with selections. * can be specified to read all data types.	None – must be specified.
WhereN	<p>The “where” clauses to be applied when querying data, which match the values in the Where fields in the TSTool main interface. The parameters should be specified as Where1, Where2, etc., with no intervening gaps in numbering. All clauses are joined as “and” and are therefore cumulative in limiting the query. The format of each parameter value is:</p> <p>“Item;Operator;Value”</p> <p>Where Item indicates a data field to be filtered on, Operator is the type of constraint, and Value is the value to be checked when querying.</p>	If not specified, the query will not be limited and very large numbers of time series may result from the query (which may require a long time to perform the query).
	Use the following parameters when reading a single time series or an ensemble of time series.	
SiteCommonName	The site common name for the time series location; used with the data type common name to determine the site_datatype_id in the database.	None – must be specified unless SiteDataTypeID is specified.
DataTypeCommonName	The data type common name for the time series; used with the site common name to determine the site_datatype_id in the database.	None – must be specified unless SiteDataTypeID is specified.
SiteDataTypeID	The site_datatype_id value to match the time series. If specified, the value will be used instead of the site_datatype_id determined from SiteCommonName and DataTypeCommonName.	
	Use the following parameters when reading a single model time series.	
ModelName	The model name for the time series; used with the model run name, hydrologic indicator(s), and model run date to determine the model_run_id in the database.	None – must be specified unless ModelRunID is specified.
ModelRunName	The model run name for the time series; used with the model name, hydrologic indicator(s), and model run date to determine the model_run_id in the database.	None – must be specified unless ModelRunID is specified.
ModelRunDate	The model run date (timestamp) to use for the time series; used with the model name, model run name,	None – must be specified unless

Parameter	Description	Default
	and hydrologic indicator(s) to determine the model_run_id in the database. The run date should be specified using the format YYYY-MM-DD hh:mm (zero-padded with hour 0-23, minute 0-59, seconds and hundredths of seconds will default to 0). Need to implement tests to make sure this is properly handled, including formatting and listing existing values.	ModelRunID is specified.
Hydrologic Indicator	The hydrologic indicator(s) to use for the time series; used with the model name, model run name, and model run date to determine the model_run_id in the database.	None – must be specified unless ModelRunID is specified.
ModelRunID	The model_run_id value to match the time series. If specified, the value will be used instead of the model_run_id determined from ModelName, ModelRunName, ModelRunDate, and HydrologicIndicator.	
	Use the following parameters when reading an ensemble of model time series.	
EnsembleName	The name of the ensemble to write. The TSList=EnsembleID and EnsembleID parameters also should be specified.	Must be specified if writing an ensemble.
EnsembleTraceID	Indicate how to identify time series trace identifiers. This parameter may be implemented in the future.	The HDB trace number is used for the TSTool ensemble trace sequence number.
EnsembleModelName	The model name corresponding to the ensemble.	Must be specified if writing an ensemble.
EnsembleModelRunDate	When writing an ensemble, the model run date for the ensemble, specified using format: <ul style="list-style-type: none"> YYYY-MM-DD hh:mm (zero-padded with hour 0-23) \${TS:property} – use a run date from a time series property, truncated to minute Need to implement tests to make sure this is properly handled, including formatting and listing existing values.	If not specified, the ensemble identifier in HDB will not include the model run date.
	The following parameters are always appropriate.	
InputStart	Start of the period to query, specified in format YYYY-MM-DD HH, with a precision appropriate for the interval.	Read all available data.
InputEnd	End of the period to query, specified in format YYYY-MM-DD HH, with a precision appropriate for the interval.	Read all available data.
Alias	Indicate an alias to assign to time series, which can result in shorter identifiers for time series when referenced with other commands.	No alias is assigned.

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