Command Reference: ReadReclamationHDB()

Read time series from a Reclamation HDB database

Version 10.20.00, 2013-04-21

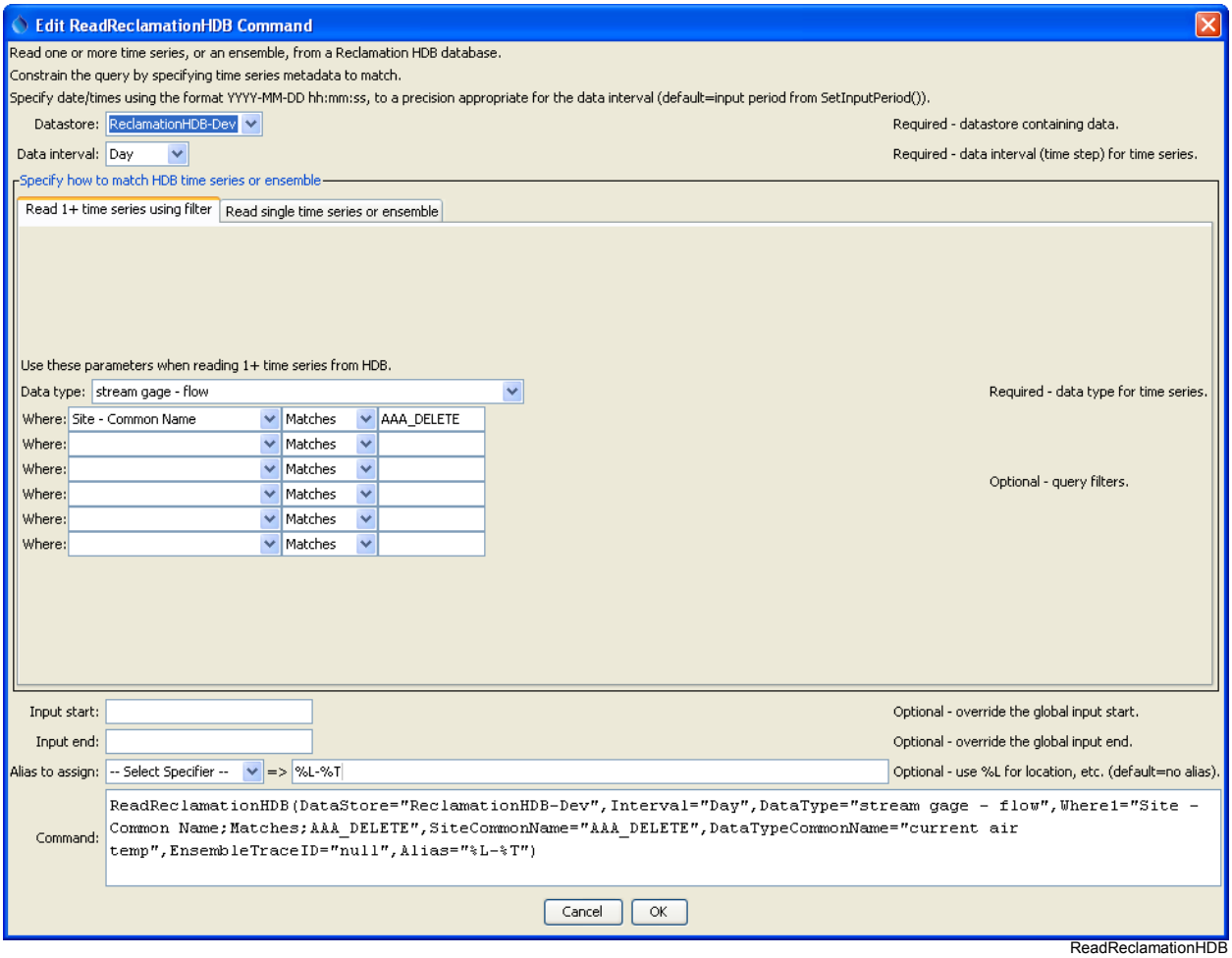
The `ReadReclamationHDB()` command reads one or more time series from a Reclamation HDB database:

- 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.

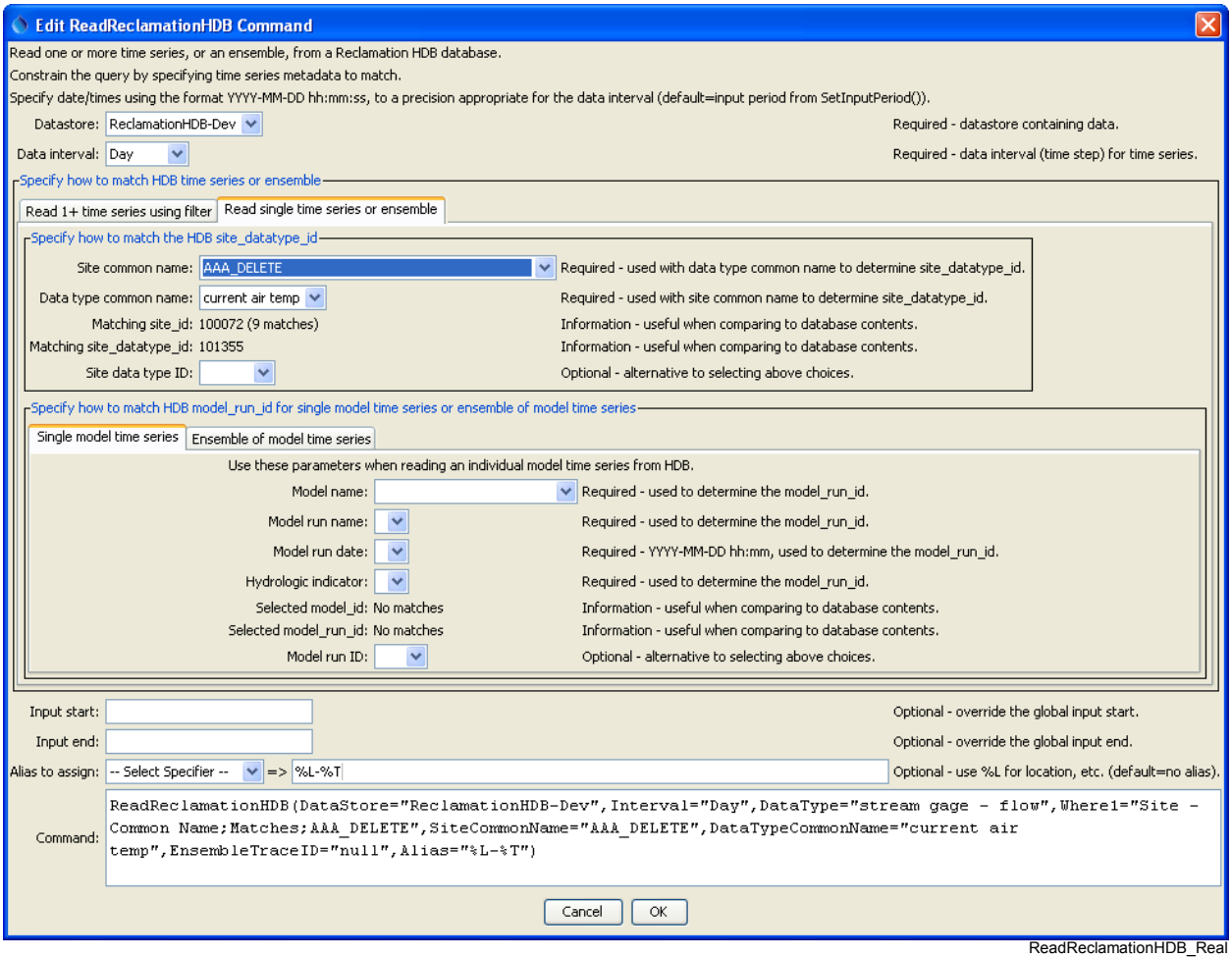
The following dialog is used to edit the command and illustrates the syntax of the command when reading "real" or "model" data using filters. This approach can be used when reading one or more time series in bulk. ***Where*** criteria should be specified in sequential order without intervening blank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



ReadReclamationHDB

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

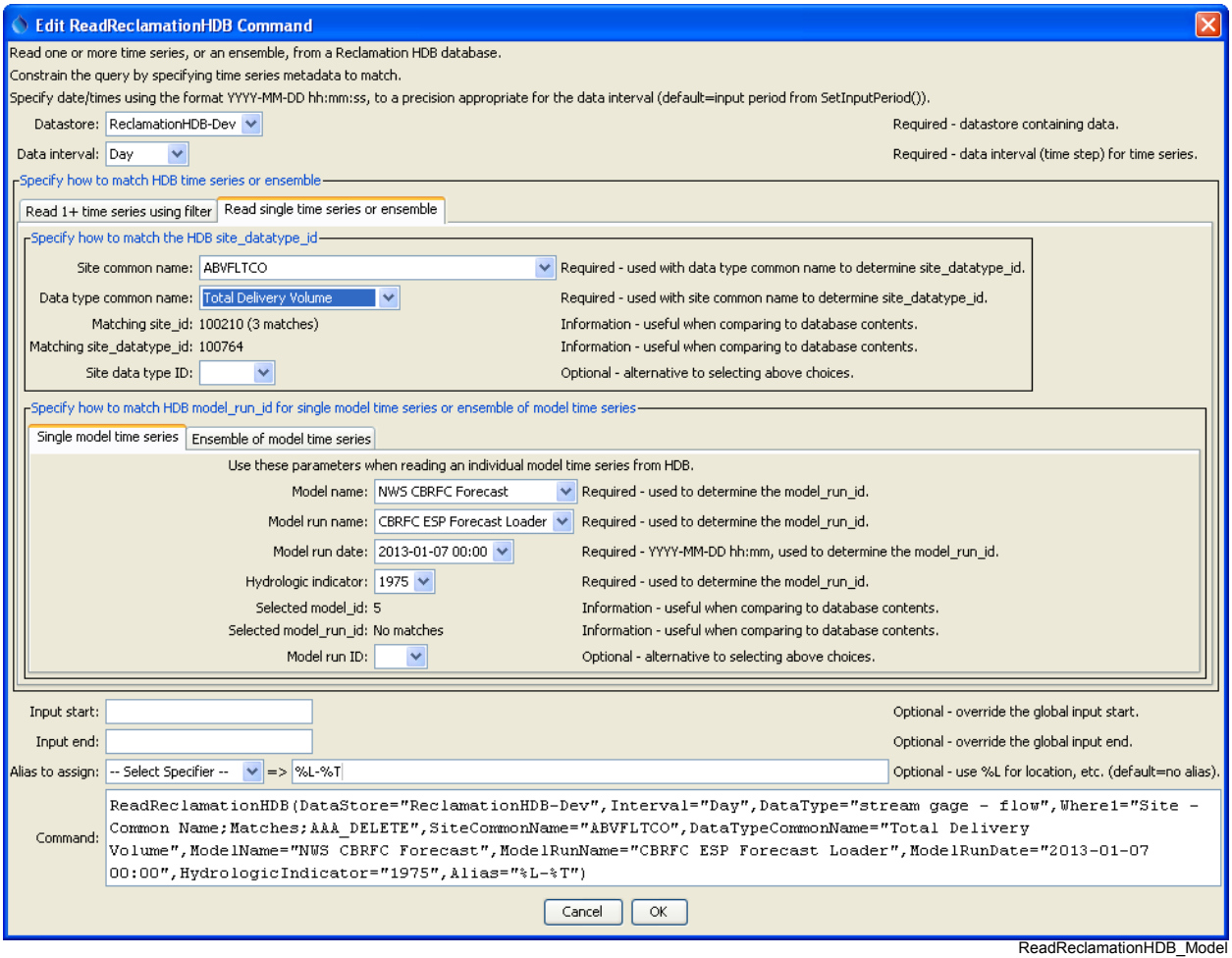
The following figure illustrates reading a single "real" time series (note that the model parameters are not specified).



ReadReclamationHDB_Real

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

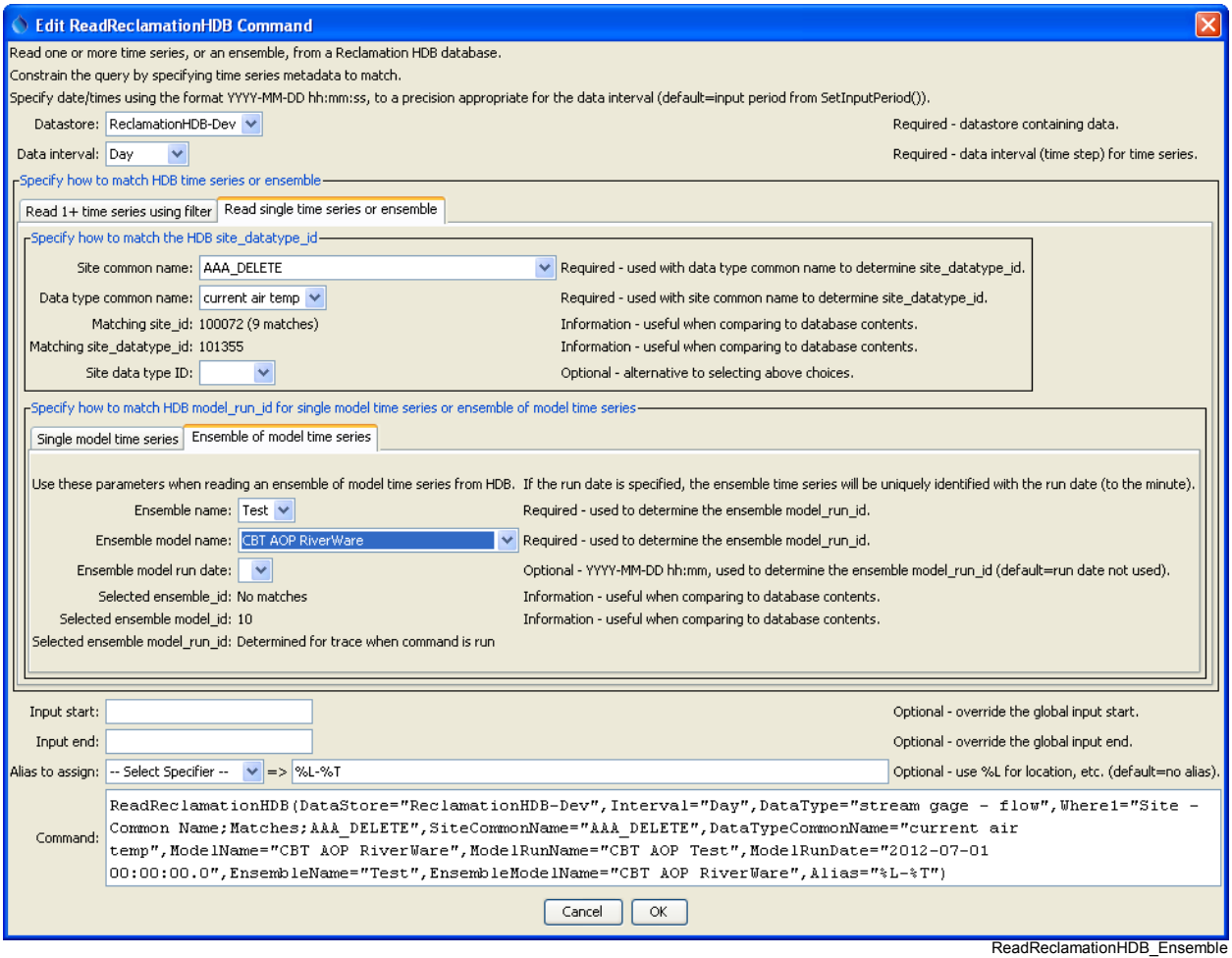
The following figure illustrates reading a single "model" time series, in which case model parameters are specified in addition to the site and data type parameters.



ReadReclamationHDB_Model

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

The following figure illustrates reading n 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	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: "Item;Operator;Value" 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.	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.	
Site CommonName	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.
DataType CommonName	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.
`EnsembleModel RunDate`	When writing an ensemble, the model run date for the ensemble, specified using format: • `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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