Command Reference: ReadReclamationHDB()

Read time series from a Reclamation HDB database

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This command's documentation is now maintained as HTML – refer to the HTML version for current documentation.

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

- a single "real" time series (observations)
- a single "model" time series (results from a model)
- a time series ensemble, indicated by the ensemble name, in which case each ensemble trace time series is read as a "model" time series

The primary metadata necessary to read the time series are a site data type identifier (SDI) and, if reading a model time series, a model run identifier (MRI). These values can be selected directly (from long lists), or selected through incremental selection of other data. Both options are provided for flexibility where appropriate.

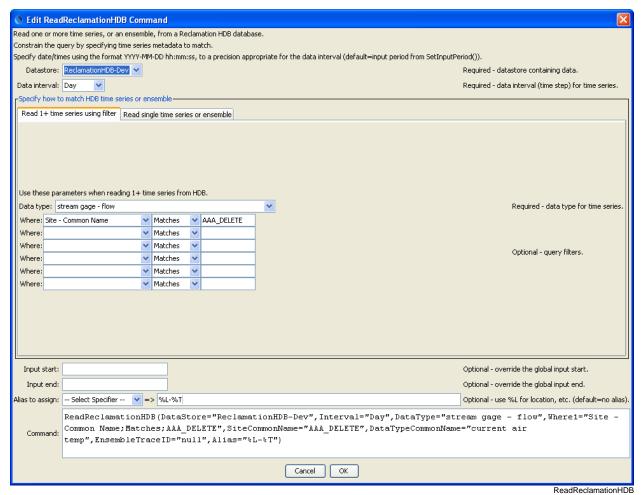
See the WriteReclamationHDB () command documentation for information about writing the time series that are read by this command. See the **Reclamation HDB Data Store Appendix** for more information about the database features and limitations.

In all cases, the choices presented to the user cascade to allow only valid choices. For example, when a site data type identifier is selected, then only time series and ensembles are listed that have data records with the site data type identifier. This ensures that only time series with data are read.

Additional functionality includes:

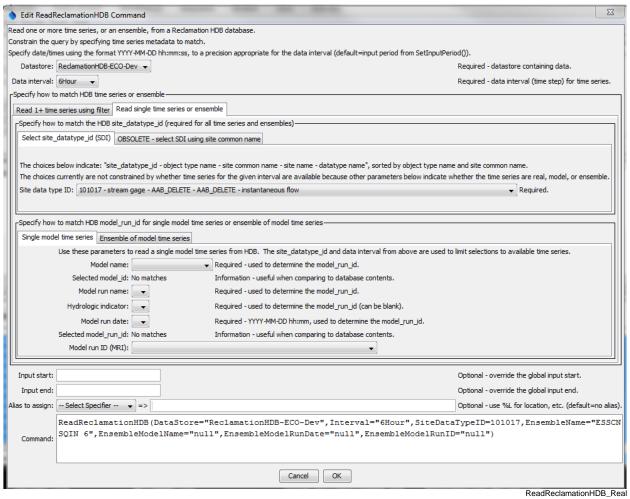
• When reading hour interval data, including NHour data: regardless of the requested input period, the time series that is read will have its start and end date/time set to actual date/time. This ensures that odd offsets such as hour 1 for 3Hour data will match the actual data.

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. This approach is useful when processing a group of time series in bulk.



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).

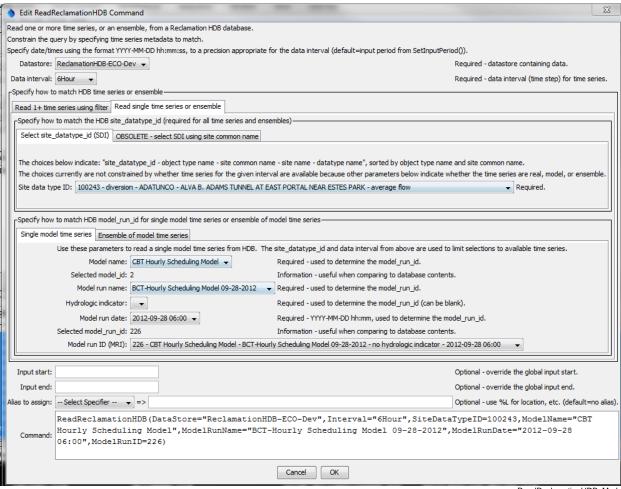


ReadReclamationHDB() Command Editor to Read a Single Real Time Series

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. There are two ways to select the MRI:

- 1. Pick the MRI from the list at the bottom of the parameter section:
 - Additional information is shown in the choice, but only the MRI is saved in the command
- 2. Sequentially pick model-related metadata until a unique MRI is determined (multiple command parameters are saved):
 - a. Model name
 - b. Model run name
 - c. Hydrologic indicator (may be blank)
 - d. Model run date (may be blank)

The following figure illustrates both approaches, although normally one or the other would be used. Selecting an MRI directly takes precedence over the other approach.



ReadReclamationHDB_Model

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

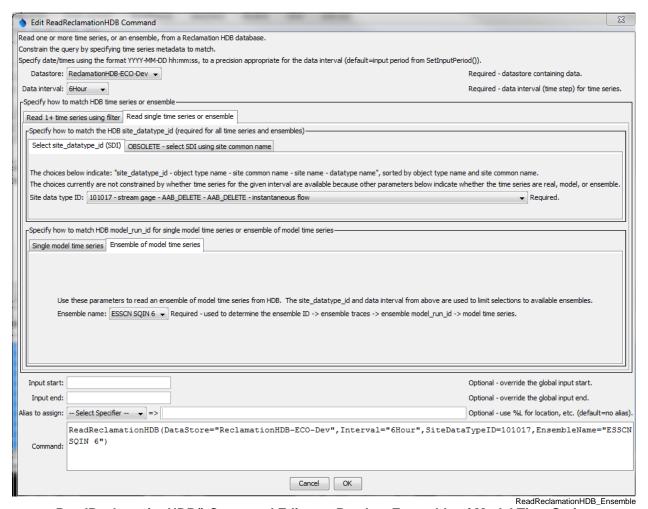
The following figure illustrates reading an ensemble of "model" time series, in which case an ensemble name is specified in addition to the SDI. Ensembles are stored in HDB as follows:

Ensemble (ensemble name is unique)

Ensemble Trace(s) (trace number is unique)

Model run identifier(s) (MRI is unique) M_* data tables

Consequently, in order to list the ensemble names for selection, the data table is checked for matching SDI, and additional queries map the data back to the ensemble data, which provide the list of ensemble names to choose from.



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	None – must be
	database from which to read time series.	specified.
Interval	The data interval to read (Hour, Day, Month,	None – must be
	Year, Irregular). Irregular is used for	specified.
	instantaneous data and internally results in data	
	with date/times to minute precision.	
NHourInterval	There are cases where data may have been loaded	Data are used as is.
Offset	into HDB on hours that do not properly align with	Checks verify that all
	expected hour offset for NHour data. For example, data in HDB for the ECAO office are saved in	data align as expected with NHour interval
	MST time zone but data may have been saved with	and if not an error is
	a 1-hour daylight savings offset. 3Hour interval	generated.
	model data may be loaded on odd offsets, for	generated.
	example hour 1, 4, 7, 10, 13, 16, 19, and 22. In	
	this case if extra data were loaded at other hours,	
	TSTool does not know what data are valid and will	
	generate an error. The offending data can be	
	removed using a database tool, or the	
	NHourIntervalOffset parameter can be	
	specified to tell TSTool what data to use (in this	
	case the offset would be 1).	
	Use the following parameter when reading 1+ time	
	series using filters	
DataType	The data type to read as ObjectType -	None – must be
	DataTypeCommonName. The object type is	specified.
	shown to help with selections. * can be specified	
Title a see NI	to read all data types.	If not one officed the
WhereN	The "where" clauses to be applied when querying data, which match the values in the Where fields in	If not specified, the query will not be
	the TSTool main interface. The parameters should	limited and very large
	be specified as Where1, Where2, etc., with no	numbers of time series
	intervening gaps in numbering. All clauses are	may result from the
	joined as "and" and are therefore cumulative in	query (which may
	limiting the query. The format of each parameter	require a long time to
	value is:	perform the query).
	"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.	
	Use the following parameters when reading a	
	single time series or an ensemble of time series.	
SiteDataTypeID	The site_datatype_id value to match the	
	time series. Direct selection using the provided	
	choices is preferred because the other parameters	
	(below) are not guaranteed to be unique.	

Parameter	Description	Default
Site	The site common name for the time series location;	None – must be
CommonName	used with the data type common name to	specified unless
	determine the site datatype id in the	SiteDataTypeID
	database. This approach is discouraged and may	is specified.
	be removed in the future because	
	site_common_name is not unique in HDB.	
DataType	The data type common name for the time series;	None – must be
CommonName	used with the site common name to determine the	specified unless
	site datatype id in the database. This	SiteDataTypeID
	approach is discouraged and may be removed in	is specified.
	the future because datatype common name is	
	not unique in HDB.	
	Use the following parameters when reading a	
	single model time series.	
ModelRunID	The model_run_id value to match the time	
	series. Direct selection using the provided choices	
	is an option to specifying the equivalent multiple	
	parameters described below.	
ModelName	The model name for the time series; used with the	None – must be
	model run name, hydrologic indicator(s), and	specified unless
	model run date to determine the model_run_id	ModelRunID is
	in the database.	specified.
ModelRunName	The model run name for the time series; used with	None – must be
	the model name, hydrologic indicator(s), and	specified unless
	model run date to determine the model_run_id	ModelRunID is
	in the database.	specified.
ModelRunDate	The model run date (timestamp) to use for the time	None – must be
	series; used with the model name, model run name,	specified unless
	and hydrologic indicator(s) to determine the	ModelRunID is
	model_run_id in the database. The run date	specified.
	should be specified using the format YYYY-MM-	
	DD hh:mm (zero-padded with hour 0-23, minute	
	0-59).	
Hydrologic	The hydrologic indicator(s) to use for the time	None – must be
Indicator	series; used with the model name, model run name,	specified unless
	and model run date to determine the	ModelRunID is
	model_run_id in the database.	specified.
	Use the following parameters when reading an	
	ensemble of model time series.	
EnsembleName	The name of the ensemble to read. Corresponding	Must be specified if
	trace data are queried to determine	reading an ensemble.
	model_run_id to read individual time series.	
	The following parameters are always appropriate.	
Properties	String properties to be assigned to the time series	
	using syntax:	
	Property1:Value1, Property2:Value2	
InputStart	Start of the period to query, specified in format	Read all available
	YYYY-MM-DD hh:mm, with a precision	data.

Parameter	Description	Default
	appropriate for the interval. If not aligned with the	
	time series data records for NHour data, the input	
	start hour will be adjusted to the first interval in the	
	day that aligns with the time series data.	
InputEnd	End of the period to query, specified in format	Read all available
	YYYY-MM-DD hh:mm, with a precision	data.
	appropriate for the interval. If not aligned with the	
	time series data records for NHour data, the input	
	start hour will be adjusted to the last interval in the	
	day that aligns with the time series data.	
Alias	Indicate an alias to assign to time series, which can	No alias is assigned.
	result in shorter identifiers for time series when	
	referenced with other commands.	