PowerSimulator Basecase Formats

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PsmCaseOverview — PowerSimulator Basecase Formats

PowerSimulator Basecase Formats Overview

PowerSimulator Basecase Formats describe a set of comma-separated-value (CSV) files used to transfer the state of an electrical model previously described with PowerSimulator Model Formats.

A separate CSV file is used for each of the object types below. If no objects exist for a given type, that CSV file can be omitted. The first line of each CSV file is a header containing the attribute names for that object as described in this documentation, and each object of that type is written to the file in the subsequent lines.

Usage Guidelines

- Only include information that is actually available from the source data. Any unused attributes can be left blank. If no object in a CSV file uses an attribute, that entire column can be omitted.
- Avoid invented data.
- There can be one file per object type, and the filenames must be exactly as documented.
- Object ID strings must be those previously described in a model transfer using the PowerSimulator Model Formats.
- The import mechanism relies on the name, not the order of the columns.
- Attributes within each file must be spelled exactly as documented.
- Attributes within each file can appear in any order.

Revision History
Revision 1.9 September 29, 2014
Add MW and MVAr flows to branches
Revision 1.8 August 28, 2014
Remove device characteristics from case for SVC (slope, var limits)

Remove device characteristics from case for PhaseTapChanger (var limits), and add optional continuous shift value

Remove device characteristics from case for RatioTapChanger (var limits), and add optional continuous ratio
Revision 1.7 June 4, 2013
rename AreaLoadCurve to LoadAreaCurve to support new LoadArea records
Revision 1.6 May 28, 2013
Add area load curve
Revision 1.5 Apr 25, 2013
Add case MVAr to synchronous machine
Revision 1.4 Apr 18, 2013
Remove RegulatingKV since it is a duplicate of AVRMode for synchronous machine .
Revision 1.3 Apr 17, 2013
Correct synchronous machine operating mode description.
Revision 1.2 Nov 19, 2012
Add ACE control mode to Control Area record. Add PsmCaseParameter.csv to allow transfer of case metadata such as name, description, and timestamp

Revision 1.1 May 4, 2012
Add kv setpoint to synchronous machine, add shunt capacitor and shunt reactor
Revision 1.0 April 25, 2012
Initial Revision

Name

PsmCaseParameter.csv — File definition for PsmCaseParameter.csv

Description

This file allows for general parameter / value pairs. The file should have two columns described in the "Attributes" section below. Recognized parameters are described in the second section

Attributes

ParameterName	Parameter Name
ParameterValue	Parameter Value

Allowed Parameters

CaseFormatVersion	Version of PowerSimulatorCaseFormat used.
CaseName	Name of case
CaseDescription	Case description
CaseTimestamp	Timestamp of case used. Format is `YYYY-MM-DD HH:MM:SS Z`
	YYYY Year
	MM Month
	DD Day
	HH Hour
	MM Minutes
	SS Seconds
	Z timezone name, abbreviation or offset from UTC

Name

PsmCaseControlArea.csv — File definition for PsmCaseControlArea.csv

Description

Base case information for Control Area measurements

Attributes

ID	Control Area ID
NetInterchange	Area net interchange (MW)
ACEControlMode	ACE Control Mode • TieLineBias • ConstantNetInterchange • ConstantFrequency

Name

PsmCaseGeneratingUnit.csv — File definition for PsmCaseGeneratingUnit.csv

Description

Base case information for Generating Unit measurements

Attributes

ID	Generating Unit ID
MW	Generator Output MW
GeneratorOperatingMode	Generator Operating Mode • OFF • MAN • AGC • EDC • LFC

Name

PsmCaseLoadAreaCurve.csv — File definition for PsmCaseLoadAreaCurve.csv

Description

Base case information for Load Area Curves. A curve requires the Load Area MW to be defined at each 5-minute interval for a 24-hour period, or 288 intervals unless the LoadArea has been defined as nonconformin.

Nonconforming LoadAreas can provide a single entry to define the total load.

Attributes

LoadArea	ID of load area
Interval	Interval number (1-288)
AreaLoad	MW for interval

Name

PsmCaseLoad.csv — File definition for PsmCaseLoad.csv

Description

Base case information for Load Devices

Attributes

ID Load ID

MW Load MW

MVAr Load MVAr

Name

PsmCaseLine.csv — File definition for PsmCaseLine.csv

Description

Base case information for Line Devices

Attributes

ID	Line ID
FromMW	Case MW Flow on Node 1
FromMVAr	Case MVAr Flow Node 1
ToMW	Case MW Flow on Node 2
ToMVAr	Case MVAr Flow Node 2

Name

PsmCaseRatioTapChanger.csv — File definition for PsmCaseRatioTapChanger.csv

Description

Base case information for Ratio TapChanger Devices

Attributes

ID	Tap Changer ID
TapPosition	Tap position.
LTCEnable	Has LTC Enabled (true / false)
Ratio	tap ratio at the given position in per-unit on bus base KV (optional)

Name

PsmCasePhaseTapChanger.csv — File definition for PsmCasePhaseTapChanger.csv

Description

Base case information for Phase TapChanger Devices

Attributes

ID	Phase Tap Changer ID
TapPosition	Tap position.
ControlStatus	Control enabled? (true / false)
PhaseShift	Phase shift at the given tap position in degrees (optional)

Name

PsmCaseSeriesCapacitor.csv — File definition for PsmCaseSeriesCapacitor.csv

Description

Base case information for SeriesCapacitor Devices

Attributes

ID	SeriesCapacitor ID
FromMW	Case MW Flow on Node 1
FromMVAr	Case MVAr Flow Node 1
ToMW	Case MW Flow on Node 2
ToMVAr	Case MVAr Flow Node 2

Name

PsmCaseSeriesReactor.csv — File definition for PsmCaseSeriesReactor.csv

Description

Base case information for SeriesReactor Devices

Attributes

ID	SeriesReactor ID
FromMW	Case MW Flow on Node 1
FromMVAr	Case MVAr Flow Node 1
ToMW	Case MW Flow on Node 2
ToMVAr	Case MVAr Flow Node 2

Name

PsmCaseShuntCapacitor.csv — File definition for PsmCaseShuntCapacitor.csv

Description

Base case information for Shunt Capacitor

Attributes

ID	Shunt Capacitor ID
Enabled	KV regulation enabled? true or false

Name

PsmCaseShuntReactor.csv — File definition for PsmCaseShuntReactor.csv

Description

Base case information for Shunt Reactor measurements

Attributes

ID	Shunt Reactor ID
Enabled	KV regulation enabled? true or false

Name

PsmCaseSVC.csv — File definition for PsmCaseSVC.csv

Description

Base case information for SVC measurements

Attributes

ID	SVC ID
Mode	• Volt • MVAr
MVArSetpoint	SVC MVAr Setpoint.
VoltageSetpoint	SVC Voltage Setpoint.

Name

PsmCaseSwitch.csv — File definition for PsmCaseSwitch.csv

Description

Base case information for Switch Devices

Attributes

ID	Switch ID
SwitchPosition	Switch Position. • Open • Closed

Name

PsmCaseSynchronousMachine.csv — File definition for PsmCaseSynchronousMachine.csv

Description

Base case information for Synchronous Machine

Attributes

ID	Synchronous Machine ID
SynchronousMachineOperatingMode	SynchronousMachine Operating Mode • GEN • CON • PMP
AVRMode	Automatic Voltage Regulation mode • ON • OFF
KVSetPoint	KV Setpoint if regulating KV is enabled (AVR Mode = ON)
MVArSetpoint	MVAr setpoint used if regulating MVAr (AVR Mode = OFF)
MVAr	case MVAr

Name

PsmCaseTransformerWinding.csv — File definition for PsmCaseTransformerWinding.csv

Description

Base case information for TransformerWinding Devices

Attributes

ID	TransformerWinding ID
FromMW	Case MW Flow on Node 1
FromMVAr	Case MVAr Flow Node 1
ToMW	Case MW Flow on Node 2
ToMVAr	Case MVAr Flow Node 2