# Executing the Emulated Watt Meter

The emulated Watt meter is a tool that is designed to emulate the presence of a Watt meter been attached to a physical host inside a Zabbix based environment. Its usage is as follows:

**java –jar host-power-emulator-0.0.1-SNAPSHOT.jar [hostname] [host-name-to-clone]**

**<hostname>:** This is an optional argument that states which host to emulate the Watt meter for. If no hostname is specified the tool will work for all calibrated hosts.

**[host-name-to-clone]:** This is an optional argument that allows the named host to have its data cloned for the purpose of emulating the named host.

**[stop-on-clone]:** This parameter stops the emulated Watt meter as soon as the cloning of the host calibration data has been completed. Thus it may be used to simply copy calibration data for one host to another.

# Settings Files

There are 4 configuration files that need to be created. These are:

energy-modeller-db.properties  
energy-modeller-db-zabbix.properties  
energy-modeller-predictor.properties  
watt-meter-emulator.properties

The first two provide access to the Zabbix and energy modeller databases respectively. The latter two settings files provider further configuration details of the model and the watt meter respectively.

**energy-modeller-db.properties**

iaas.energy.modeller.db.driver = com.mysql.jdbc.Driver  
iaas.energy.modeller.db.url = jdbc:mysql://testnode1:3306/energy\_modeller  
iaas.energy.modeller.db.user = energy-modeller  
iaas.energy.modeller.db.password = XXXXX

This settings file contains the details to connect to the energy modeller’s database. This allows calibration data to be used as part of the estimations.

**energy-modeller-db-zabbix.properties**

iaas.energy.modeller.zabbix.db.driver = com.mysql.jdbc.Driver  
iaas.energy.modeller.zabbix.db.url = jdbc:mysql://testnode1/zabbix  
iaas.energy.modeller.zabbix.db.user = zabbix  
iaas.energy.modeller.zabbix.db.password = XXXXX  
iaas.energy.modeller.filter.begins = Wally  
iaas.energy.modeller.filter.isHost = true

This settings file contains the details to connect to the Zabbix database directly. This allows current metric values to guide the estimated power value. Zabbix doesn’t distinguish between hosts and VMs. The property “iaas.energy.modeller.filter.begins” indicates what a node’s name should begin with for it to be a physical host. The property “iaas.energy.modeller.filter.isHost” indicates that the nodes detected that start with this name are hosts i.e. not VMs. True = host, False = VM.

**energy-modeller-predictor.properties**

iaas.energy.modeller.cpu.energy.predictor.default\_load = -1.0  
iaas.energy.modeller.cpu.energy.predictor.datasource = ZabbixDirectDbDataSourceAdaptor  
iaas.energy.modeller.cpu.energy.predictor.utilisation.observe\_time.min = 0  
iaas.energy.modeller.cpu.energy.predictor.utilisation.observe\_time.sec = 30

This settings file configures the Emulated Watt meter’s internal model.

iaas.energy.modeller.cpu.energy.predictor.default\_load: Range: 0..1 or -1. -1 Takes readings of CPU utilisation directly. Use this for general usage.  
iaas.energy.modeller.cpu.energy.predictor.datasource: The default is ZabbixDirectDbDataSourceAdaptor. This controls which datasource is used in order to get metric values to drive the Watt meter’s internal model. Additional possibilities are: ZabbixDataSourceAdaptor and SigarDataSourceAdaptor.

**watt-meter-emulator.properties**

#Settings  
#Tue May 05 16:39:29 BST 2015  
output\_name=power-estimated  
poll\_interval=1

This settings file changes the name of the metric to push into Zabbix the default is “power-estimated”. It also changes the interval at which a new value is produced.