Do you need to define bus voltage bases?

From OpenDSSWiki

Question

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Answer

Generally, no. The OpenDSS does not use per unit voltages for its calculations. However, it uses per unit/percent values for some input data and some reports. Therefore, you do not have to define voltage bases for the buses just to get a solution in volts and amps, although some reports will make more sense if you do.

The nominal way to set the voltage base from a script is to issue the **SetkVBase** command after the buses exist (after a Solve for example):

```
SetkVBase Bus=MyBus  kVLL=line-line-kV

-or-

SetkVBase Bus=MyBus  kVLN=line-neutral-kV
```

Issue a command for each bus for which you wish to define the voltage base.

Alternatively, we have provided the **CalcVoltageBases** command so you don't have to make a large script. It is designed to work on circuits in which the voltage bases are easily discerned from a no-load solution. It works in concert with the **Set VoltageBases** option in which you define the legal voltage bases in an array. Use only L-L kV for 3-phase systems in the array.

Example

```
Set VoltageBases=[115  12.47  0.48  0.208]
CalcVoltageBases
```

Note that 0.208 is the voltage base you would use for typical 120V buses. 208V is the voltage you would get if the 120V systems were connected in 3-phase wye.

Occasionally, the CalcVoltageBases command will guess wrong because two voltage levels are close together, for example, 25 kV and 27 kV. You can make a script to correct the wrong guesses and execute it immediately after the CalcVoltageBases command.

--Rdugan 19:13, 29 September 2010 (UTC)

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