
AIMMS Function Reference - Constraint Suffices

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Constraint Suffices

AIMMS constraints support the following collection of suffices.

- `.ShadowPrice`
- `.Convex`
- `.RelaxationOnly`
- `.SmallestShadowPrice`
- `.LargestShadowPrice`
- `.SmallestRightHandSide`
- `.NominalRightHandSide`
- `.LargestRightHandSide`

See also Section [14.2](#) of the Language Reference.

.ShadowPrice

Definition:

When the property `ShadowPrice` of a constraint is set or when the option `Always store marginals` is set to on, the `.ShadowPrice` suffix contains the shadow price of the constraint as computed by the solver. The shadow price of a constraint is the marginal change in the objective value with respect to a change in the right-hand side of the constraint.

Datatype:

The value of the `.ShadowPrice` suffix is numeric.

Dimension:

The `.ShadowPrice` suffix has the same dimension and domain as that of the constraint at hand.

Remarks:

- When a variable X has a definition the suffix can also be applied to X but this is not encouraged by the syntax highlighting. The preferred notation is `X_definition.ShadowPrice`.
- The GAMS equivalent suffix name is `.m`.
- The default of the option `Always store basics` is off.
- See also Section [14.2](#) of the Language Reference.

.Convex**Definition:**

The constraint suffix `.Convex` is an indicator to the solver Baron that this constraint is convex.

Datatype:

The value of the `.Convex` suffix is an integer in the range $\{0,1\}$ and the default is 0.

Dimension:

The `.Convex` suffix has the same dimension and domain as that of the constraint at hand.

Remarks:

- See also Section [14.2.6](#) of the Language Reference.

.RelaxationOnly**Definition:**

The constraint suffix `.RelaxationOnly` is an indicator to the solver Baron that this constraint should be included as a relaxation to the branch-and-bound algorithm, while it should be excluded from the local search.

Datatype:

The value of the `.RelaxationOnly` suffix is an integer in the range $\{0,1\}$ and the default is 0.

Dimension:

The `.RelaxationOnly` suffix has the same dimension and domain as that of the constraint at hand.

Remarks:

- See also Section [14.2.6](#) of the Language Reference.

.SmallestShadowPrice**Definition:**

When the property `SmallestShadowPrice` of a constraint is set and when the option `Calculate Sensitivity Ranges` is set to on, the `.SmallestShadowPrice` suffix contains the smallest shadow price of the constraint while holding the objective value constant.

Datatype:

The value of the `.SmallestShadowPrice` suffix is numeric.

Dimension:

The `.SmallestShadowPrice` suffix has the same dimension and domain as that of the constraint at hand.

Remarks:

- When a variable `X` has a definition the suffix can also be applied to `X` but this is not encouraged by the syntax highlighting. The preferred usage is `X.definition.SmallestShadowPrice`.
- The default of the option `Calculate Sensitivity Ranges` is on.
- See also Section [14.2](#) of the Language Reference.

.LargestShadowPrice

Definition:

When the property `LargestShadowPrice` of a constraint is set and when the option `Calculate Sensitivity Ranges` is set to on, the `.LargestShadowPrice` suffix contains the largest shadow price of the constraint while holding the objective value constant.

Datatype:

The value of the `.LargestShadowPrice` suffix is numeric.

Dimension:

The `.LargestShadowPrice` suffix has the same dimension and domain as that of the constraint at hand.

Remarks:

- When a variable `X` has a definition the suffix can also be applied to `X` but this is not encouraged by the syntax highlighting. The preferred usage is `X.definition.LargestShadowPrice`.
- The default of the option `Calculate Sensitivity Ranges` is on.
- See also Section [14.2](#) of the Language Reference.

.SmallestRightHandSide**Definition:**

When the property `RightHandSideRange` of a constraint is set and the option `Calculate Sensitivity Ranges` is not set to off the `.SmallestRightHandSide` suffix contains the smallest right hand side such that the basis remains constant.

Datatype:

The value of the `.SmallestRightHandSide` suffix is numeric.

Dimension:

The `.SmallestRightHandSide` suffix has the same dimension and domain as that of the constraint at hand.

Remarks:

- When a variable X has a definition the suffix can also be applied to X but this is not encouraged by the syntax highlighting. The preferred usage is `X.definition.SmallestRightHandSide`.
- The default of the option `Calculate Sensitivity Ranges` is on.
- See also Section [14.2](#) of the Language Reference.

.NominalRightHandSide**Definition:**

When the property `RightHandSideRange` of a constraint is set and the option `Calculate Sensitivity Ranges` is not set to off the `.NominalRightHandSide` suffix contains the right hand side value of the constraint. In case of a ranged constraint it contains the largest of the two constraint bounds.

Datatype:

The value of the `.NominalRightHandSide` suffix is numeric.

Dimension:

The `.NominalRightHandSide` suffix has the same dimension and domain as that of the constraint at hand.

Remarks:

- When a variable `X` has a definition the suffix can also be applied to `X` but this is not encouraged by the syntax highlighting. The preferred usage is `X.definition.NominalRightHandSide`.
- The default of the option `Calculate Sensitivity Ranges` is on.
- See also Section [14.2](#) of the Language Reference.

.LargestRightHandSide**Definition:**

When the property `RightHandSideRange` of a constraint is set and the option `Calculate Sensitivity Ranges` is not set to off the `.LargestRightHandSide` suffix contains the largest right hand side such that the basis remains constant.

Datatype:

The value of the `.LargestRightHandSide` suffix is numeric.

Dimension:

The `.LargestRightHandSide` suffix has the same dimension and domain as that of the constraint at hand.

Remarks:

- When a variable X has a definition the suffix can also be applied to X but this is not encouraged by the syntax highlighting. The preferred usage is `X.definition.LargestRightHandSide`.
- The default of the option `Calculate Sensitivity Ranges` is on.
- See also Section [14.2](#) of the Language Reference.