

5.158 gcd

	DESCRIPTION	LINKS
Origin	[137]	
Constraint	$\text{gcd}(X, Y, Z)$	
Arguments	X : dvar Y : dvar Z : dvar	
Restrictions	$X > 0$ $Y > 0$ $Z > 0$	
Purpose	Enforce the fact that Z is the greatest common divisor of X and Y.	
Example	(24, 60, 12)	
	The gcd constraint holds since 12 is the greatest common divisor of 24 and 60.	
Typical	$X > 1$ $Y > 1$	
Symmetry	Arguments are permutable w.r.t. permutation (X, Y) (Z).	
Arg. properties	Functional dependency : X determined by Y and Z.	
Algorithm	In [137] a filtering algorithm for the gcd constraint was automatically derived from the Euclidian algorithm by using constructive disjunction and abstract interpretation in order to approximate the behaviour of the while loop of the Euclidian algorithm.	
See also	common keyword : power (abstract interpretation).	
Keywords	constraint arguments : ternary constraint, pure functional dependency. constraint type : arithmetic constraint, predefined constraint. filtering : abstract interpretation. modelling : functional dependency.	

20070930

1225