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## second countable

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Entry type	Definition
Classification	msc 54D70
Synonym	second axiom of countability
Synonym	completely separable
Synonym	perfectly separable
Synonym	second-countable
Related topic	Separable
Related topic	Lindelof
Related topic	EverySecondCountableSpaceIsSeparable
Related topic	LindelofTheorem
Related topic	UrysohnMetrizationTheorem
Related topic	FirstAxiomOfCountability
Related topic	LocallyCompactGroupoids
Related topic	FirstCountable

A topological space is said to be *second* if it has a countable <http://planetmath.org/BasisTop>. It can be shown that a space is both Lindelöf and separable, although the converses fail. For instance, the lower limit topology on the real line is both Lindelöf and separable, but not second countable.