



# locally closed subgroups of topological groups are closed

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Let  $G$  be a Hausdorff topological group and  $H \subseteq G$  a subgroup (which is a topological group itself under the subspace topology).

**Theorem -** If  $H$  is locally closed in  $G$  then  $H$  is closed.

In particular we see that if  $H$  is either

- open, or
- <http://planetmath.org/Discretediscrete>, or
- locally compact,

then  $H$  is closed.