I describe the wonderful compactification of loop groups. These compactifications are obtained by adding normal-crossing boundary divisors to the group $LG$ of loops in a reductive group $G$ (or more accurately, to the semi-direct product $C^* \times LG$) in a manner equivariant for the left and right $C^* \times LG$-actions. The analogue for a torus group $T$ is the theory of toric varieties; for an adjoint group $G$, this is the wonderful compactifications of De Concini and Procesi. The loop group analogue is suggested by work of Faltings in relation to the compactification of moduli of $G$-bundles over nodal curves. Using the loop analogue one can construct a ‘wonderful’ completion of the moduli stack of $G$-bundles over nodal curves. (Received August 30, 2012)