The Bass-Quillen conjecture states that every vector bundle over $\mathbb{A}^n_R$ is extended from $\text{Spec}(R)$ for a regular noetherian ring $R$. Lindel proved that this conjecture has an affirmative solution when $R$ is essentially of finite type over a field. We will discuss an equivariant version of this conjecture for the action of a diagonalizable group scheme. We prove a general result about $G$-equivariant vector bundles on affine $G$-toric schemes and derive the equivariant analog of the Bass-Quillen conjecture as a corollary for various cases of $R$. This talk is based on joint work with Amalendu Krishna.