The centralization of the control plane decision logic in Software Defined Networking (SDN) has raised concerns regarding the performance of the SDN Controller (SDNC) when the network scales up. A number of solutions have been proposed in the literature to address these concerns. This paper proposes a new approach for addressing the performance bottlenecks that arise from limited computational resources at the SDNC. The proposed approach is based on optimally configuring the operating parameters of the components residing inside the SDNC (network control functions such as monitoring, routing, etc.). A series of tests have been performed, and results confirm that by careful configurations, the computational overhead at the SDNC can be reduced without significantly affecting the efficiency of its components.