We complete the work of Kovacic and others by defining and establishing the basic properties of DiffSpec and differential schemes. We then introduce the $\Delta$-flat topology and show that it agrees with Kolchin’s constrained cohomology for a $\Delta$ field $K$. We finish by explaining and generalizing Kolchin’s result that $H^*(K_{cnstrd}, \Delta G) = H^*(K_{Gal}, G)$ for a $\Delta$ field $K$ and an ordinary linear algebraic group $G$ where $\Delta G$ is the differential group scheme obtained by adding the differential operators $\Delta$ to $G$. (Received September 17, 2011)