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Nota di contenuto	1 Introduction -- 2 Background -- 3 Overview -- 4 Providing Flow Protection in SCORE -- 5 Providing Guaranteed Services in SCORE -- 6 Providing Relative Service Differentiation in SCORE -- 7 Making SCORE More Robust and Scalable -- 8 Prototype Implementation Description -- 9 Conclusions and Future Work -- A Performance Bounds for CSFQ -- B Performance Bounds for Guaranteed Services.
Sommario/riassunto	The fundamental aspect of the Internet architecture that distinguishes it from other network technologies (such as X. 25 and ATM) is that it is c- nectionless (vs. connection-oriented) and stateless (vs. stateful). The

heated debateofwhetherconnection-orientedorconnectionlessarchitectureisbetter has lasted for several decades. Proponents of the connectionless architecture point out the great robustness and scalability properties of the architecture, as demonstratedby the Internet. Onewell-knownarticulationofthis philo- phy is the “End-to-End Arguments”. Opponents argue, rightfully, that there is no known solution that can provide quantitative performance assurances or guaranteed QoS in a connectionless network. It has been widely rec- nized that QoS is a must-have feature as the Internet technology evolves to the next stage. However, all existing solutions that provide guaranteed QoS require routers to maintain per ?ow (another name for connection used by the Internet community) state, which is the fundamental element of a connection-oriented architecture. The apparent con?icting goals of having a stateless network and supporting QoS have presented a great dilemma for Internet architects. As an example, Dave Clark, one of the most respected Internet architects and the author of the famous “End-to-End Arguments” paper, wasalsoakeydesigneroftheInternetIntegratedServicesArchitecture that requires routers to maintain per ?ow state. Dr. Ion Stoica’s dissertation addresses this most pressing and di?cult problem facing the Internet community today: how to enhance the Internet to support rich functionalities (such as QoS and tra?c management) while still maintaining the scalability and robustness properties embodied in the original Internet architecture. Inhisdissertation,Dr.