In the past decade, software architecture has emerged as a major research area in software engineering. Many architecture description languages and analysis techniques have been proposed. Software Architecture Model (SAM), a graphical software architecture description model has been developed at FIU since 1998. SAM is a general software architecture development framework based on two complementary formalisms - Petri nets and temporal logic. Petri nets are used to visualize the structure and model the behavior of s/w architectures while temporal logic is used to specify the required properties of s/w architectures. These two formal methods are nicely integrated through the SAM software architecture framework. Furthermore, SAM provides the flexibility to choose different compatible Petri net and temporal logic models according to the nature of system under study. Most importantly, SAM supports formal analysis of software architecture properties in a variety of well-established techniques – simulation, model checking, and testing.