A Model of GIS Virtual Machine

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Abstract

This paper presents a model of Geographic Information System Virtual Machine. The GIS VM is a software architectural model that facilitates the development of Web-based GIS applications. It is a three-tiered system. Java applets or ActiveX objects, with Web browsers as the container, form the presentation tier that interacts with the user. The core of the GIS VM is the servers in the middle and third tiers. The middle tier includes server components for basic GIS functions and data discovery. The third tire mainly contains the spatial data access server. In addition to these basic servers, the GIS VM includes a model object manager (MOM) that establishes linkages with external models and other application programs. The MOM can also extract metadata about models and carry out the execution process on a user's behalf.