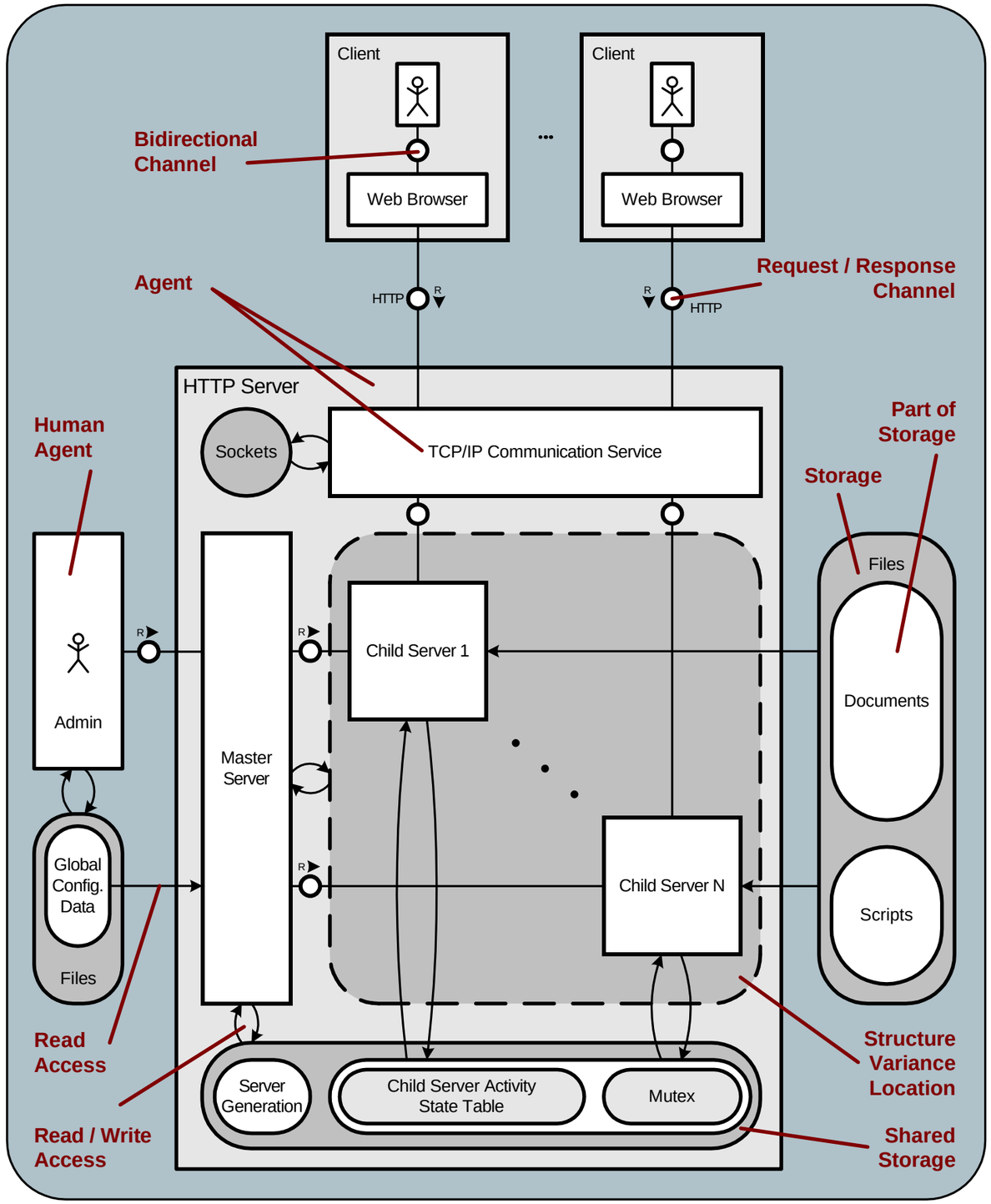
FMC

Compositional Structures

Block diagrams - Reference Sheet



FMC Block diagrams show the compositional structures as a composition of collaborating system components.

There are active system components called agents and passive system components called locations. Each agent processes information and thus serves a well-defined purpose. Therefore an agent stores information in storages and communicates via channels or shared storages with other agents. Channels and storages are (virtual) locations where information can be observed.

basic elements		
A	active system component : agent, human agent	Serves a well-defined purpose and therefore has access to adjacent passive system components and only those may be connected to it. A human agent is an active system component exactly like an agent but the only difference that it depicts a human. (Note 1: nouns should be used for identifier "A" Note 2: do not need to be depicted as rectangle or square but has to be angular)
S	passive system component (location) : storage, channel	A storage is used by agents to store data. (Note: do not need to be depicted as ellipse or circle but has to be rounded) A channel is used for communication purposes between at least two active system components. (Note: channels are usually depicted as smaller circles but may also vary like the graphical representation of storage places)
	access type	Directed and undirected edges represent the kind of access an active system component has to a passive system component. The types of access are read access, write access and a combination of both. (Note: usually undirected edges depicting read/write access are used on channels whereas two directed edges also depicting read/write access are used on storages)
common structures		
A S	read access	Agent A has read access to storage S.
A S	write access	Agent A has write access to storage S. In case of writing all information stored in S is overwritten.
A S	read / write access (modifying access)	Agent A has modifying access to storage S. That means that some particular information of S can be changed.
A1 A2	unidirectional communication channel	Information can only be passed from agent A1 to agent A2.
A1 A2	bidirectional communication channel	Information can be exchanged in both directions (from agent A1 to agent A2 and vice versa).
A1 RES REQ A2 A1 R A2	request / response communication channel (detailed and abbreviation)	Agent A1 can request information from agent A2 which in turn responds (e.g. function calls or http request/responses). Because it is very common, the lower figure shows an abbreviation of the request/response channel.
A1 S A2	shared storage	Agent A1 and agent A2 can communicate via the shared storage S much like bidirectional communication channels.
advanced		
A1 A2	structure variance	Structure variance deals with the creation and disappearance of system components. An agent (A1) changes the system structure (creation/deletion of A2) at a location depicted as dotted storage. System structure change is depicted as modifying access. After creation agent A1 can communicate with agent A2 or vice versa.