

# Description of components and functions

(schema/SecurityPatternCatalogNaiveSchema.owl)

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<i>Component Tree</i>	<i>Function Tree</i>	<i>Description</i>
<b><i>Common component &amp; function schema</i></b>		
<u>Class: Component</u>  <u>Class: SoftwareComponent</u> <b><i>component_Software</i></b> (stub) <u>Class: ApplicationComponent</u> <b><i>component_Application</i></b> (stub) <u>Class: LocalApplicationComponent</u> <b><i>component_LocalApplication</i></b> (stub) <u>Class: NetworkApplicationComponent</u> <b><i>component_NetworkApplication</i></b> (stub) <u>Class: ServerApplicationComponent</u> <b><i>component_ServerApplication</i></b> (stub) <b><i>component_WEBBasedApplication</i></b> <b><i>component_Database</i></b> <b><i>component_Filestore</i></b> <u>Class: ClientApplicationComponent</u> <b><i>component_ClientApplication</i></b> (stub) <b><i>component_WEBbrowser</i></b> <b><i>component_RemoteCLI</i></b> <u>Class: DistributedApplicationComponent</u> <b><i>component_DistributedApplication</i></b> (stub)  <u>Class: SystemSoftwareComponent</u> <b><i>component_SystemSoftware</i></b> (stub) <b><i>component_SystemService</i></b> <b><i>component_OperatingSystem</i></b> <b><i>component_Middleware</i></b> <b><i>component_Firmware</i></b>  <u>Class: ActorComponent</u> <b><i>component_Actor</i></b> (stub) <b><i>component_RemoteUser</i></b> <b><i>component_SystemAdministrator</i></b> <b><i>component_Developer</i></b>  <u>Class: HardwareComponent</u>	<u>Class: SoftwareFunction</u> <u>Class: UserManagementFunction</u> <b><i>function_CredentialsManagement</i></b> <b><i>function_Permissions Management</i></b> <b><i>function_Authentication</i></b> <b><i>function_Authorization</i></b> <u>Class: InterfaceFunction</u> <u>Class: UserInterface</u> <b><i>function_InterfaceCLI</i></b> <b><i>function_InterfaceGUI</i></b> <b><i>function_InterfaceWEB</i></b> <u>Class: APIInterface</u> <b><i>function_InterfaceAPI</i></b> <u>Class DataManipulationFunction</u> <b><i>function_DataProcess</i></b> <b><i>function_DataStore</i></b> <b><i>function_DataTransfer</i></b> <b><i>function_DataBackup</i></b>  <u>Class: SecurityFunction</u> <b><i>function_AccessControl</i></b> <b><i>function_EventLogging</i></b>  <u>Class: ActorFunction</u> <b><i>function_ActorBehaviorModel</i></b> <b><i>function_ActorCredentialsManagement</i></b>  <u>Class: HardwareFunction</u>	To do, to research, to change

<b><i>component_Hardware</i></b> (stub) <b>component_Server</b> <b>component_Node</b> <b>component_Workstation</b> <b>component_MobileDevice</b> <b>component_ClusterSystem</b> <b>component_BladeSystem</b> <b>component_BladeSystemNode</b> <b>component_Supercomputer</b> <b>component_StorageSystem</b> <b>component_NetworkSwitch</b> <b>component_NetworkRouter</b>		
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## ***Cloud Computing schema***

<u>Class:</u> CloudComponent <b><i>component_Cloud</i></b> (stub) <u>Class:</u> CloudPlatformComponent <b><i>component_CloudPlatform</i></b> (stub) <b>component_CloudPortal</b> <b>component_CloudSystem</b> <b>component_CloudZone</b> (= <b>component_CloudFederation</b> ) <b>component_Hypervisor</b> (= <b>component_VirtualMachineManager</b> ) <u>Class:</u> CloudSupportService <b>component_CloudSupportService</b> (stub) <b>component_CloudBusinessSupportService</b> <b>component_CloudOperationaSupportService</b> <b>component_CloudNonFunctionalSupportService</b> <u>Class:</u> CloudService <b><i>component_CloudService</i></b> (stub) <b>component_SaaSService</b> <b>component_PaaSService</b> <b>component_IaaSService</b> <b>component_ContainerService</b>  <u>Class:</u> CloudApplication <b><i>component_CloudApplication</i></b> (stub) <b>component_IaaSApplication</b> <b>component_PaaSApplication</b> <b>component_SaaSApplication</b> <b>component_VirtualMachine</b> <b>component_VirtualNetwork</b> <b>component_VirtualStorage</b>	<u>Class:</u> <a href="#">CloudFunction</a>  <u>Class:</u> CloudPlatformFunction <b>function_OnDemandSelfService</b> <b>function_BroadNetworkAccess</b> <b>function_ResourcePooling</b> <b>function_RapidElasticity</b> <b>function_MeasuredService</b>  <u>Class:</u> CloudServiceFunction <b>function_TenantManagement</b> <b>function_VirtualResourceManagement</b> <b>function_VirtualResourceScaling</b> <b>function_UserBilling</b>  <u>Class:</u> IaaSServiceFunction <b>function_VMtemplateManagement</b> <b>function_VMimageManagement</b> <b>function_VirtualNetworkManagement</b> <b>function_VirtualStorageManagement</b>  <u>Class:</u> HypervisorFunction <b>function_VMmanagement</b> <b>function_VMmigration</b> <b>function_VMsnapshot</b> <b>function_VMcloning</b> <b>function_VMstorageManagement</b> <b>function_VMimport</b> <b>function_VMexport</b> <b>function_VirtualSwitchManagement</b>	<u>References:</u> [Fernandez, 2016] Fernandez E. B., Monge R., Hashizume K. Building a security reference architecture for cloud systems //Requirements Engineering. – 2016. – T. 21. – №. 2. – C. 225-249.  [NIST] Liu F. et al. NIST cloud computing reference architecture //NIST special publication. – 2011. – T. 500. – №. 2011. – C. 292.
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<div><div><div>component_VirtualTenant</div><div>component_Container</div></div><div><div>Class: CloudActorComponent</div><div>component_CloudActor (stub)</div><div>component_ServiceConsumer</div><div>component_ServiceProvider</div><div>component_CloudAdministrator</div><div>component_CloudZoneAdministrator</div><div>component_CloudAuditor</div><div>component_ServiceBroker</div><div>component_CloudBuilder</div><div>component_CloudApplicationBuilder</div></div></div>	<div><div>function_VirtualNetworkAdapterManagement</div></div>	
<div><div>Common network schema</div></div>		
<div><div>Class: NetworkComponent</div></div>		<div>To do, to research, to change</div>
<div><div>Common middleware schema</div></div>		
	<div><div>Class: MiddlewareFunction</div><div>function_DistributeEventInformation</div></div>	<div>To do, to research, to change</div>
<div><div>Fog Computing Schema</div></div>		
<div><div>Class: FogComponent</div><div>component_FogApplication</div></div>		<div>To do, to research, to change</div>
<div><div>Internet of Things schema</div></div>		
<div><div>Class: IoTComponent</div><div>component_IoTApplication</div><div>component_HoTApplication</div></div>	<div><div>Class: IoTFunction</div><div>function_DistributeSensorData</div></div>	<div>To do, to research, to change</div>