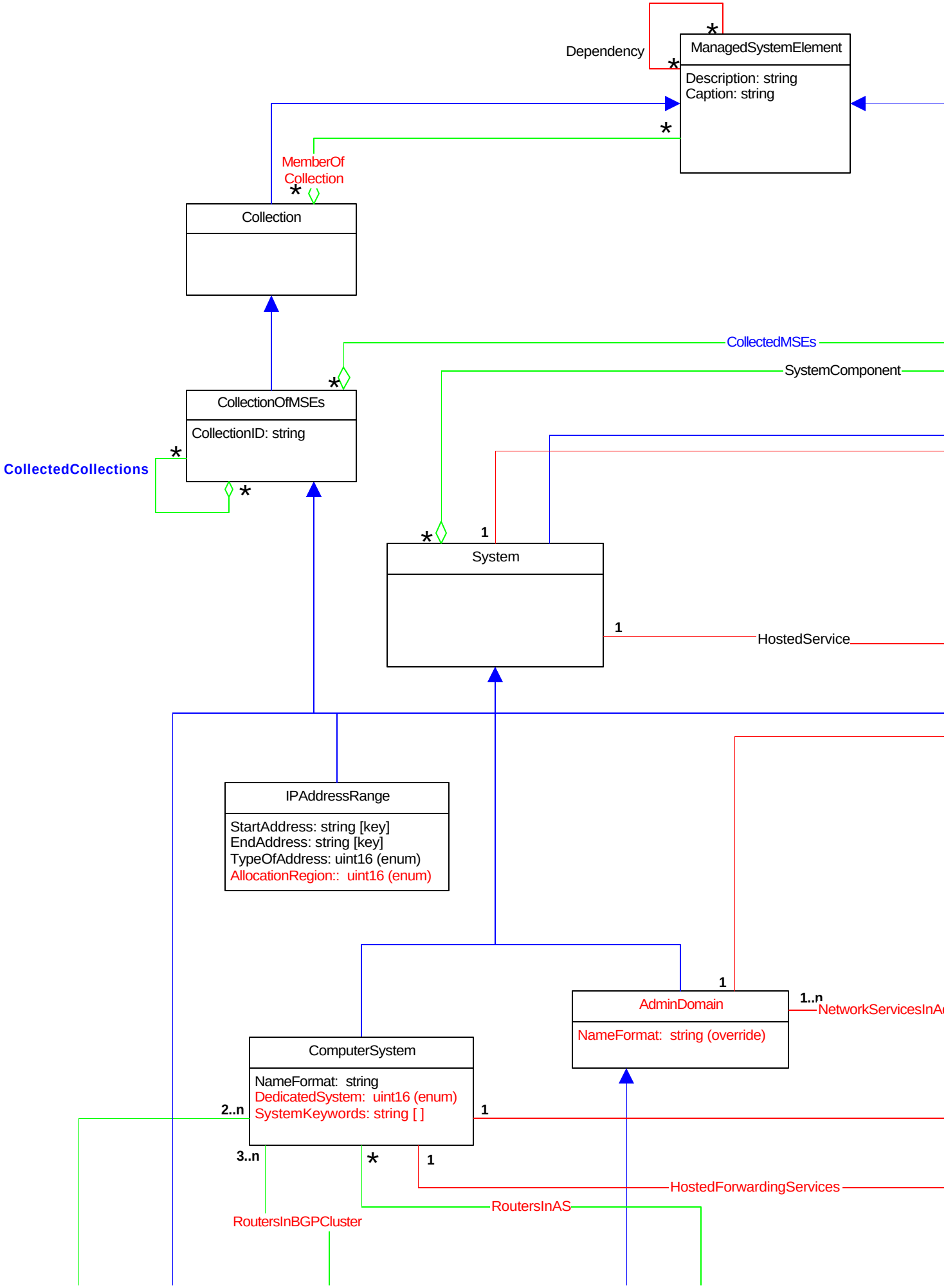
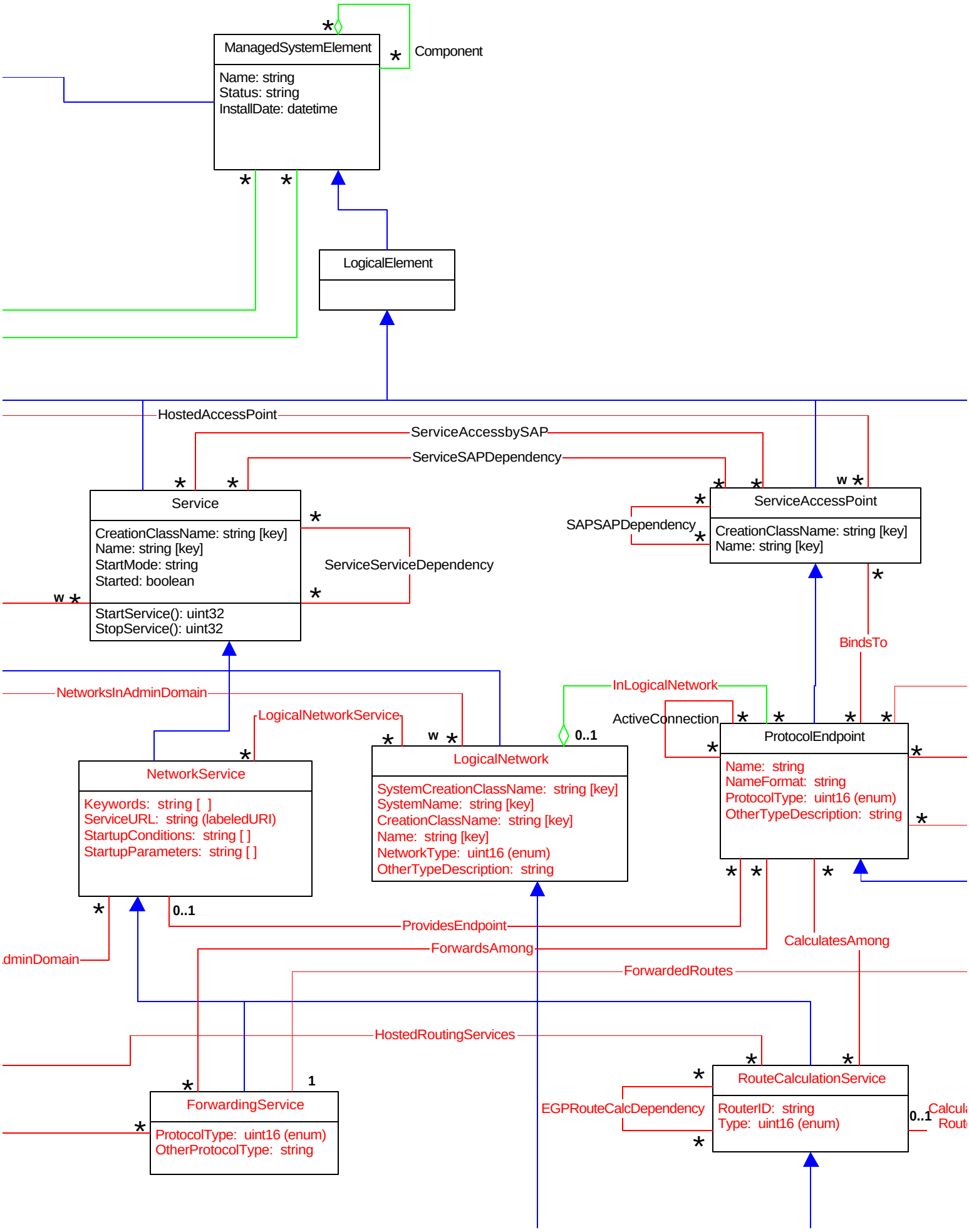
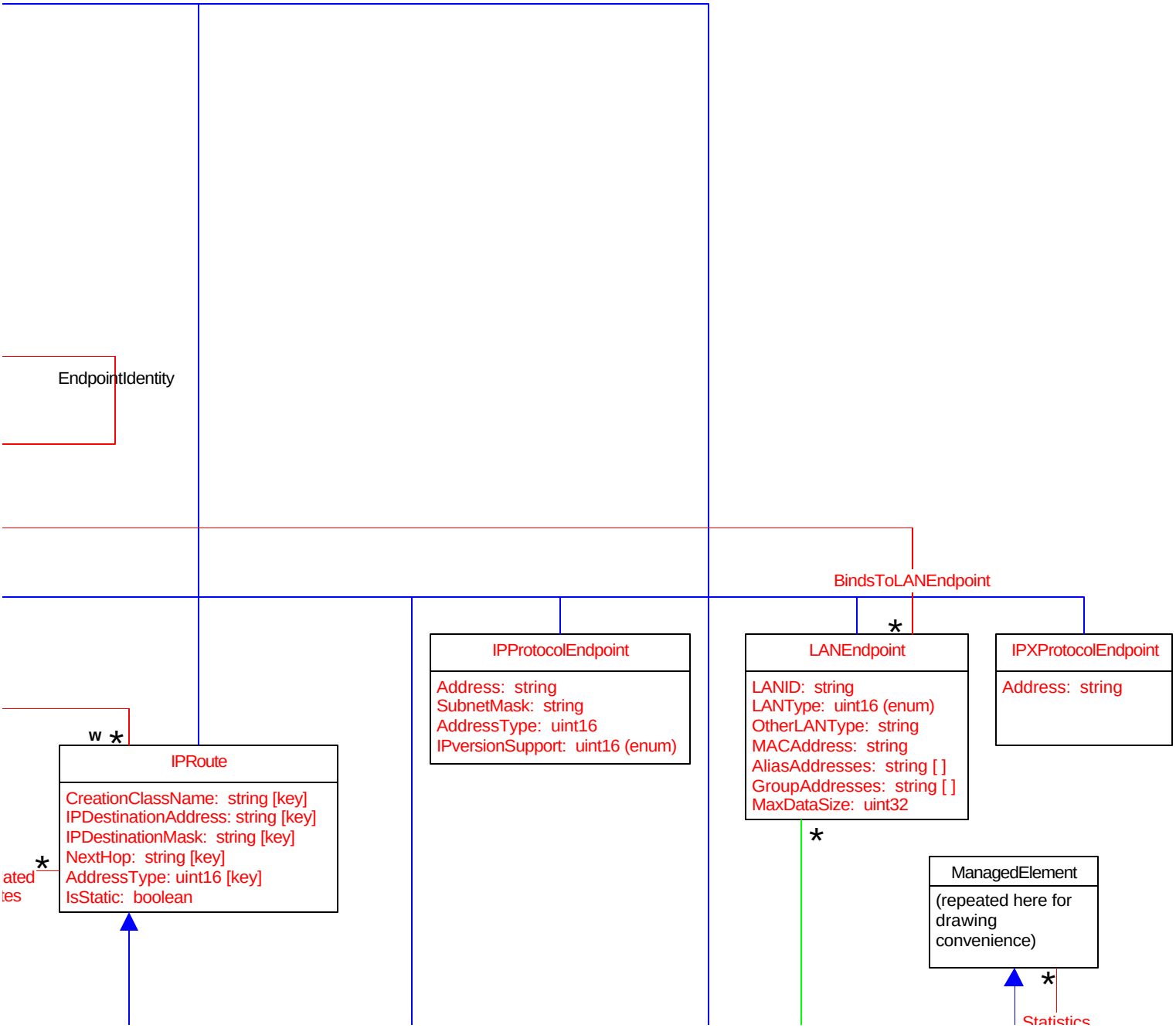
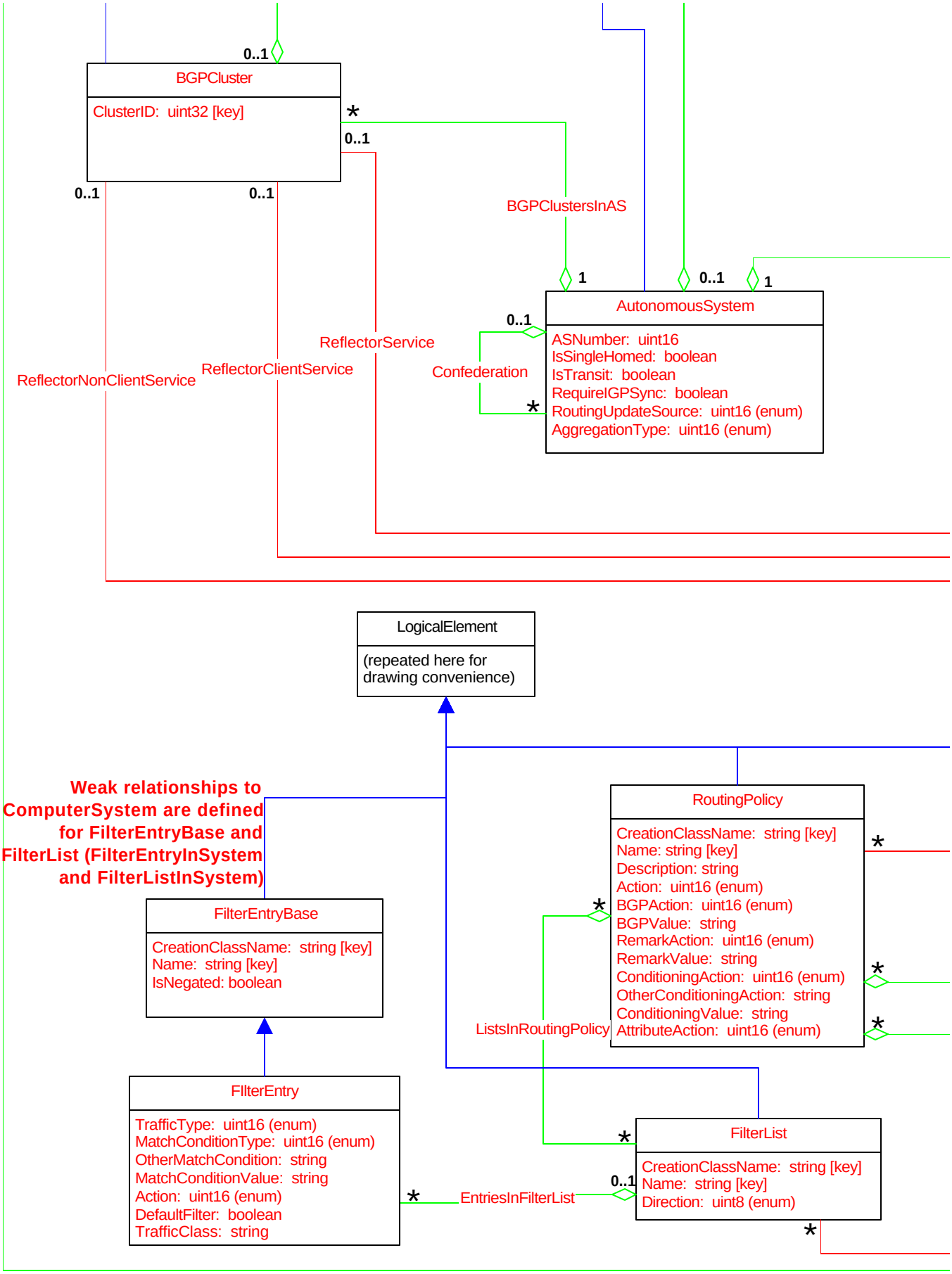

Dependency
ManagedSystemElement
Description: string
Caption: string
MemberOf
Collection
Collection
CollectedMSEs
SystemComponent
CollectionOfMSEs
CollectionID: string
CollectedCollections
System
HostedService
IPAddressRange
StartAddress: string [key]
EndAddress: string [key]
TypeOfAddress: uint16 (enum)
AllocationRegion:: uint16 (enum)
AdminDomain
NameFormat: string (override)
NetworkServicesInA
ComputerSystem
NameFormat: string
DedicatedSystem: uint16 (enum)
SystemKeywords: string [ ]
HostedForwardingServices
RoutersInAS
RoutersInBGPCluster

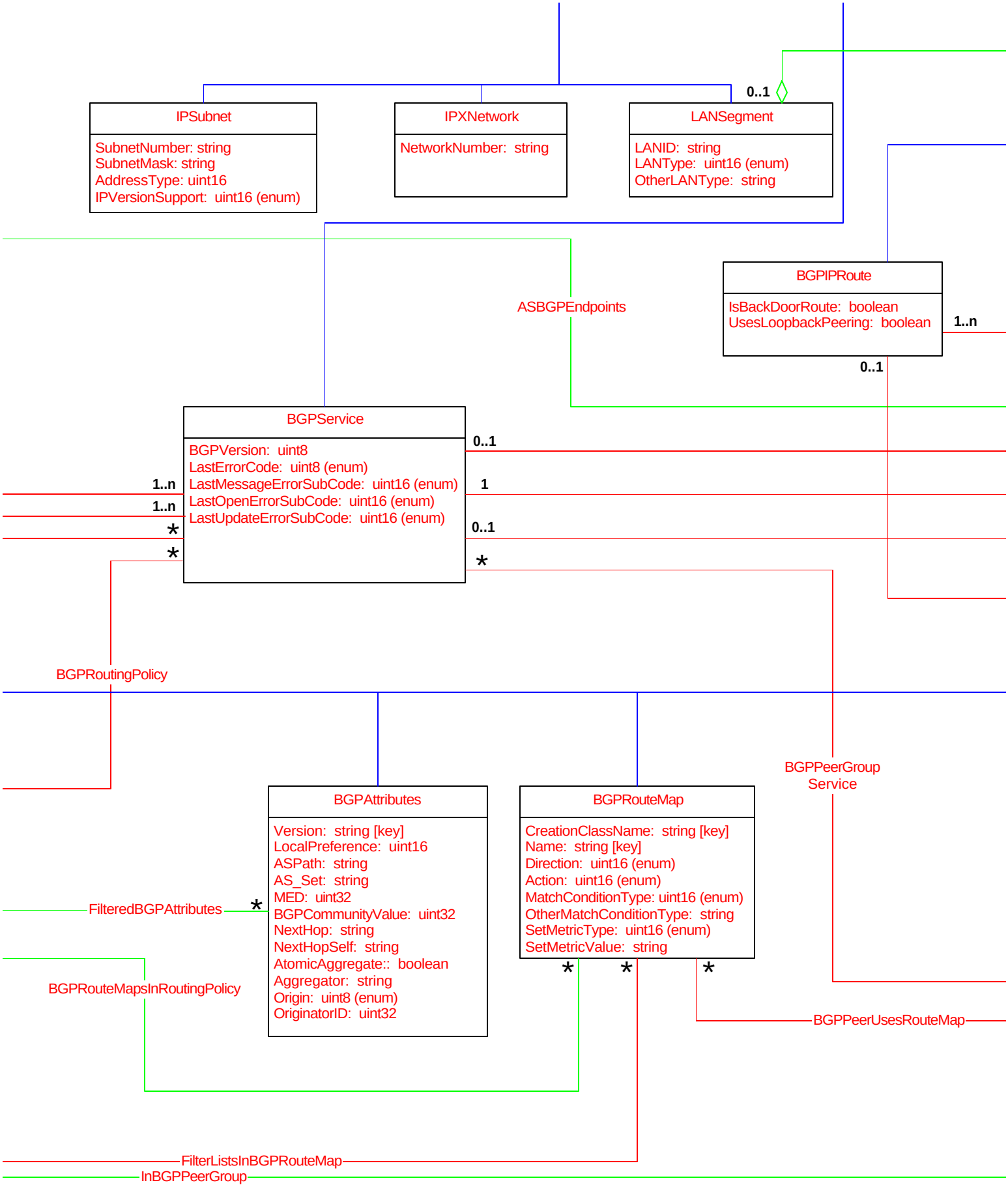

ManagedSystemElement
Name: string
Status: string
InstallDate: datetime
Component
LogicalElement
HostedAccessPoint
ServiceAccessbySAP
ServiceSAPDependency
Service
CreationClassName: string [key]
Name: string [key]
StartMode: string
Started: boolean
StartService(): uint32
StopService(): uint32
ServiceServiceDependency
ServiceAccessPoint
CreationClassName: string [key]
Name: string [key]
SAPSAPDependency
BindsTo
NetworksInAdminDomain
LogicalNetworkService
InLogicalNetwork
ActiveConnection
NetworkService
Keywords: string [ ]
ServiceURL: string (labeledURI)
StartupConditions: string [ ]
StartupParameters: string [ ]
LogicalNetwork
SystemCreationClassName: string [key]
SystemName: string [key]
CreationClassName: string [key]
Name: string [key]
NetworkType: uint16 (enum)
OtherTypeDescription: string
ProtocolEndpoint
Name: string
NameFormat: string
ProtocolType: uint16 (enum)
OtherTypeDescription: string
ProvidesEndpoint
ForwardsAmong
CalculatesAmong
ForwardedRoutes
HostedRoutingServices
ForwardingService
ProtocolType: uint16 (enum)
OtherProtocolType: string
RouteCalculationService
RouterID: string
Type: uint16 (enum)
EGPRouteCalcDependency

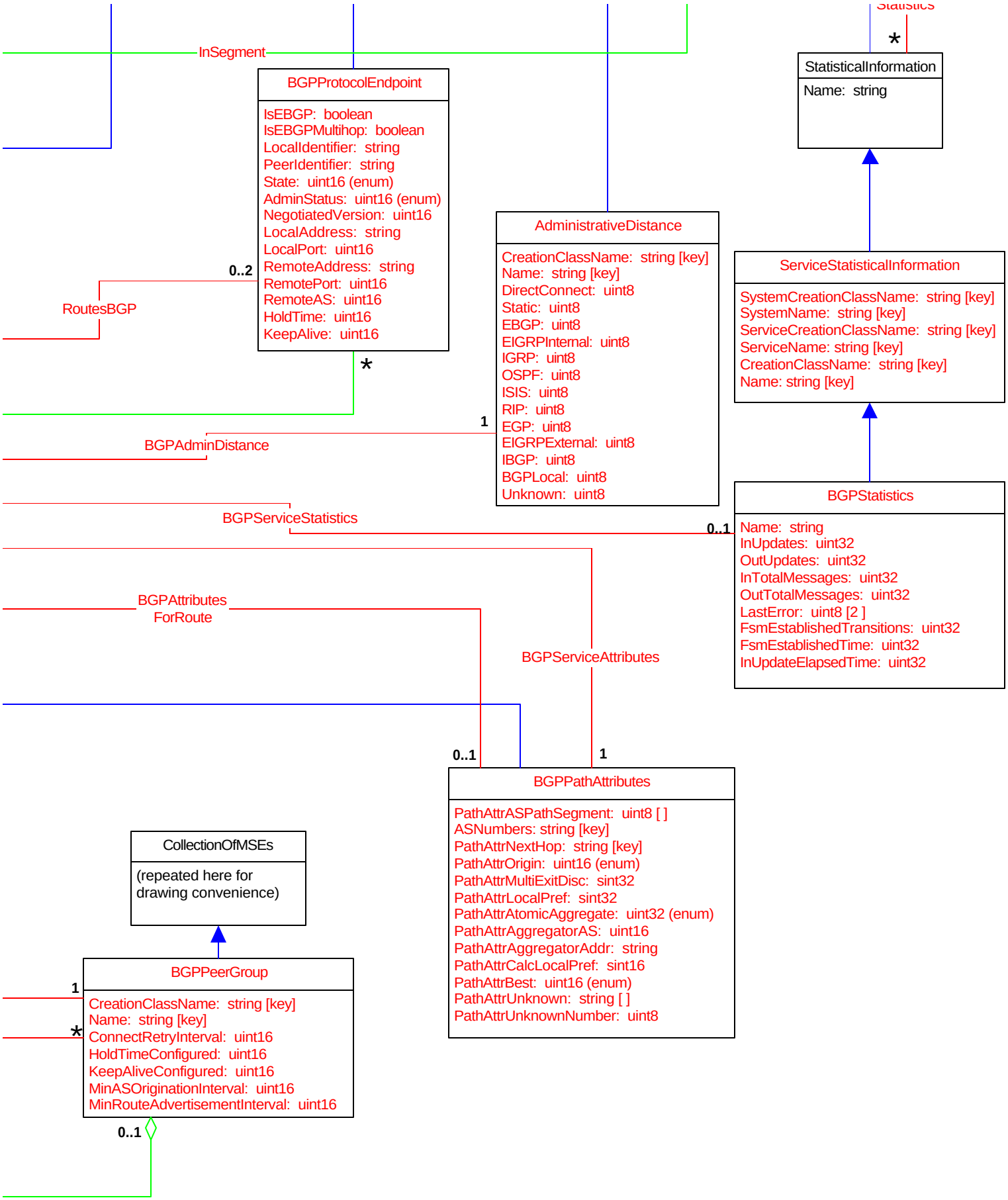
Title : BGP Sub-model (UML diagram)
Filename: CIM_Network-BGP24.vsd
Author : John Strassner
Date : 06/02/1999
Updated: 06/18/2000, Andrea Westerinen
Page 1 of 2

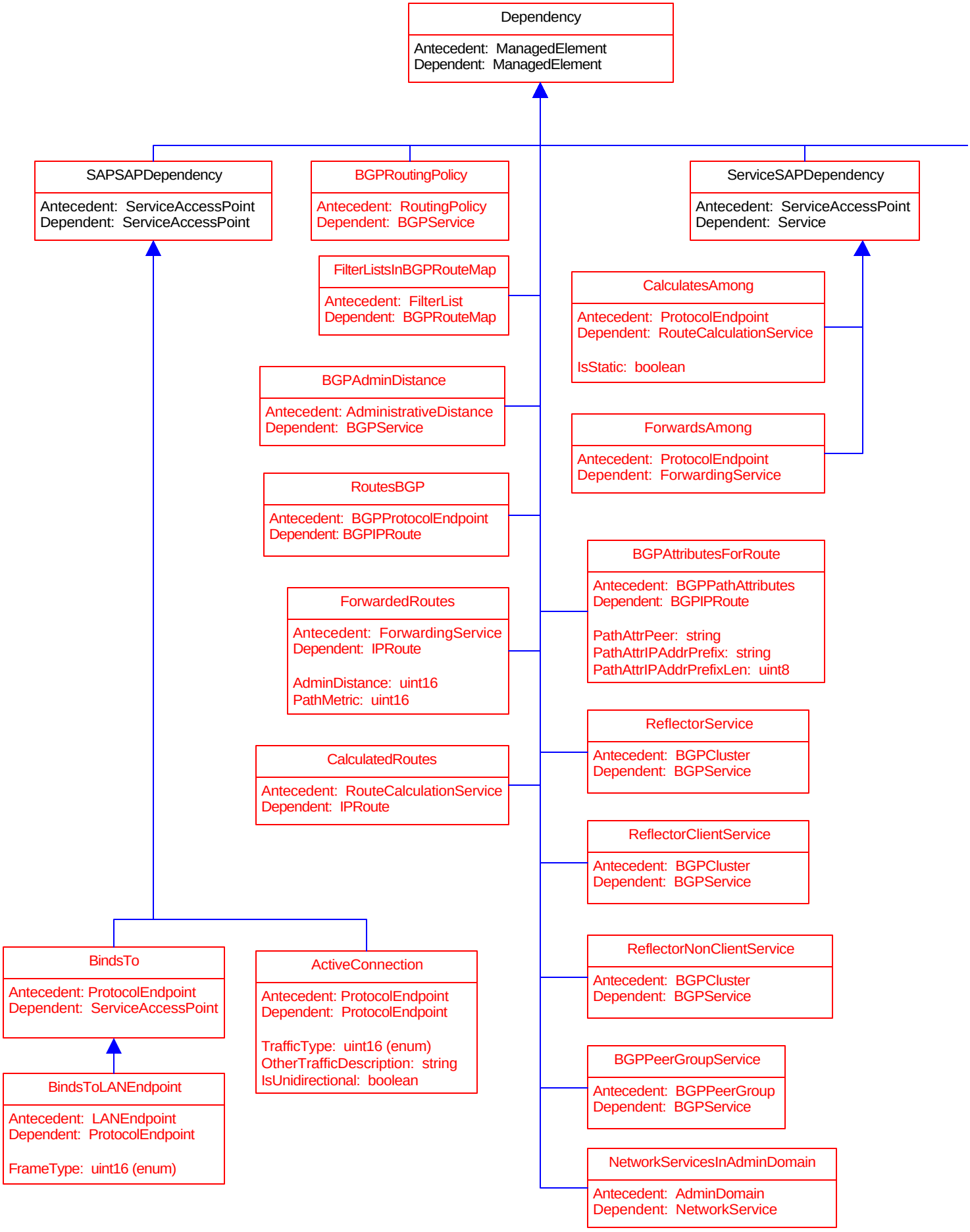
Inheritance
Association
w Association with WEAK reference
Aggregation
w Aggregation with WEAK reference
* equivalent to: 0 .. n

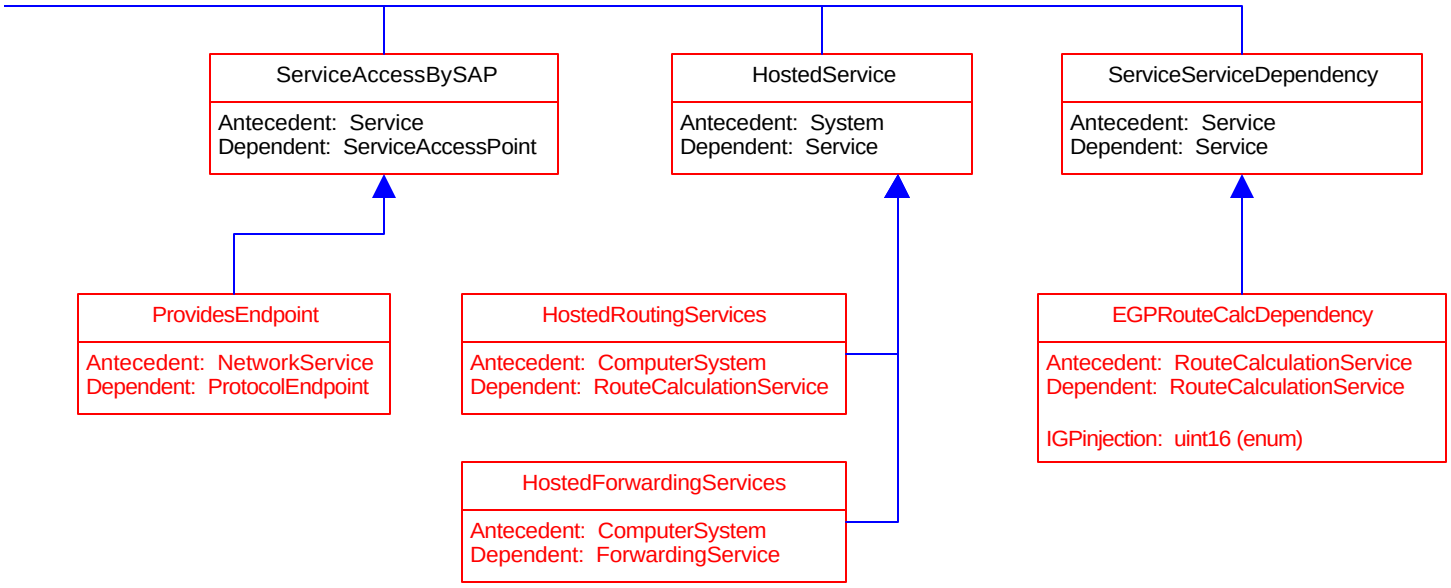


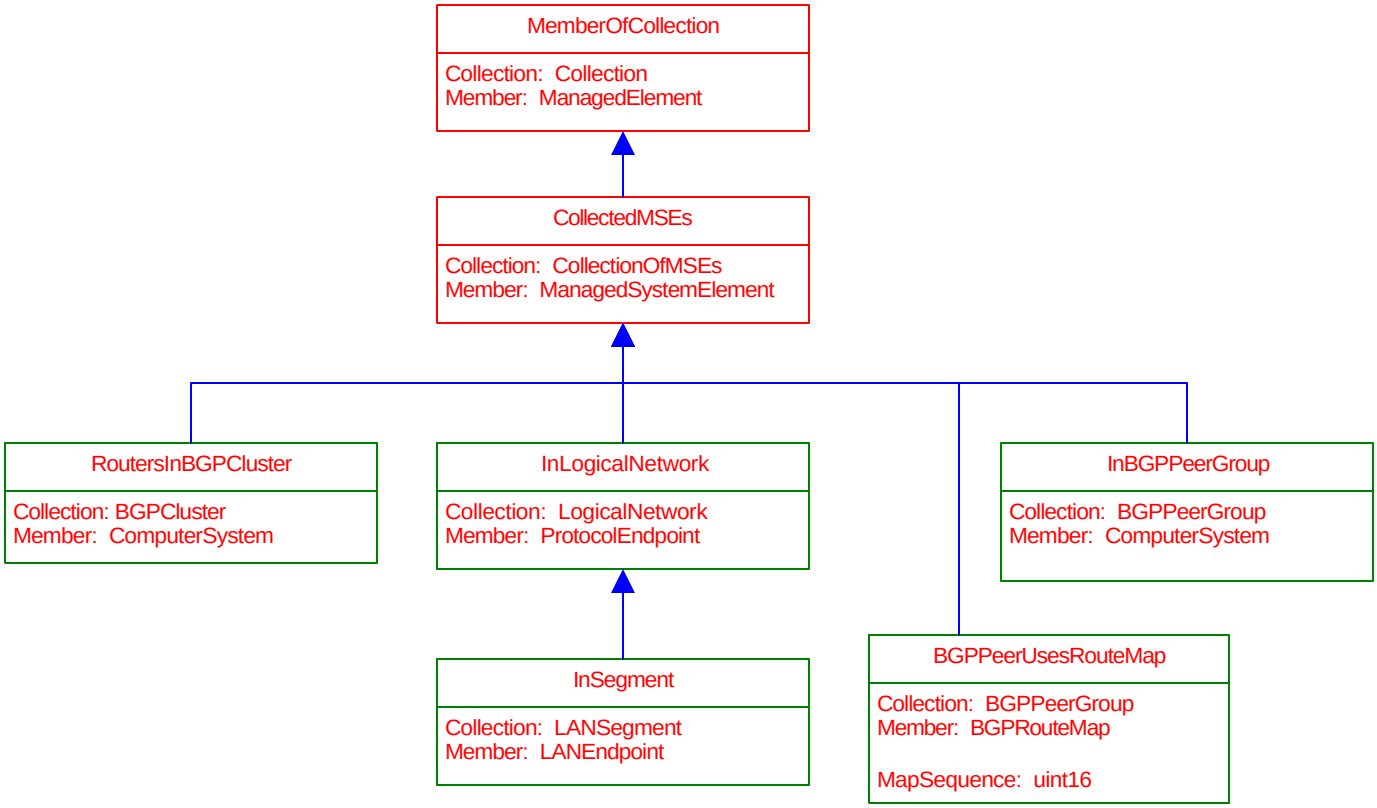

BGPCluster
ClusterID: uint32 [key]
0..1
*
0..1
0..1
0..1
BGPClustersInAS
1
0..1
1
AutonomousSystem
ASNumber: uint16
IsSingleHomed: boolean
IsTransit: boolean
RequireIGPSync: boolean
RoutingUpdateSource: uint16 (enum)
AggregationType: uint16 (enum)
0..1
*
Confederation
ReflectorService
ReflectorClientService
ReflectorNonClientService
LogicalElement
(repeated here for drawing convenience)
Weak relationships to ComputerSystem are defined for FilterEntryBase and FilterList (FilterEntryInSystem and FilterListInSystem)
FilterEntryBase
CreationClassName: string [key]
Name: string [key]
IsNegated: boolean
RoutingPolicy
CreationClassName: string [key]
Name: string [key]
Description: string
Action: uint16 (enum)
BGPAction: uint16 (enum)
BGPValue: string
RemarkAction: uint16 (enum)
RemarkValue: string
ConditioningAction: uint16 (enum)
OtherConditioningAction: string
ConditioningValue: string
AttributeAction: uint16 (enum)
*
*
*
*
ListsInRoutingPolicy
FIlterEntry
TrafficType: uint16 (enum)
MatchConditionType: uint16 (enum)
OtherMatchCondition: string
MatchConditionValue: string
Action: uint16 (enum)
DefaultFilter: boolean
TrafficClass: string
*
EntriesInFilterList
0..1
*
FilterList
CreationClassName: string [key]
Name: string [key]
Direction: uint8 (enum)
*


IPSubnet
SubnetNumber: string
SubnetMask: string
AddressType: uint16
IPVersionSupport: uint16 (enum)
IPXNetwork
NetworkNumber: string
LANSegment
LANID: string
LANType: uint16 (enum)
OtherLANType: string
0..1
BGPIPRoute
IsBackDoorRoute: boolean
UsesLoopbackPeering: boolean
1..n
0..1
ASBGPEndpoints
BGPService
BGPVersion: uint8
LastErrorCode: uint8 (enum)
LastMessageErrorSubCode: uint16 (enum)
LastOpenErrorSubCode: uint16 (enum)
LastUpdateErrorSubCode: uint16 (enum)
0..1
1
0..1
*
1..n
1..n
*
*
BGPRoutingPolicy
BGPPeerGroup
Service
BGPAttributes
Version: string [key]
LocalPreference: uint16
ASPath: string
AS_Set: string
MED: uint32
BGPCommunityValue: uint32
NextHop: string
NextHopSelf: string
AtomicAggregate:: boolean
Aggregator: string
Origin: uint8 (enum)
OriginatorID: uint32
BGPRouteMap
CreationClassName: string [key]
Name: string [key]
Direction: uint16 (enum)
Action: uint16 (enum)
MatchConditionType: uint16 (enum)
OtherMatchConditionType: string
SetMetricType: uint16 (enum)
SetMetricValue: string
FilteredBGPAttributes
*
BGPRouteMapsInRoutingPolicy
*
*
*
BGPPeerUsesRouteMap
FilterListsInBGPRouteMap
InBGPPeerGroup

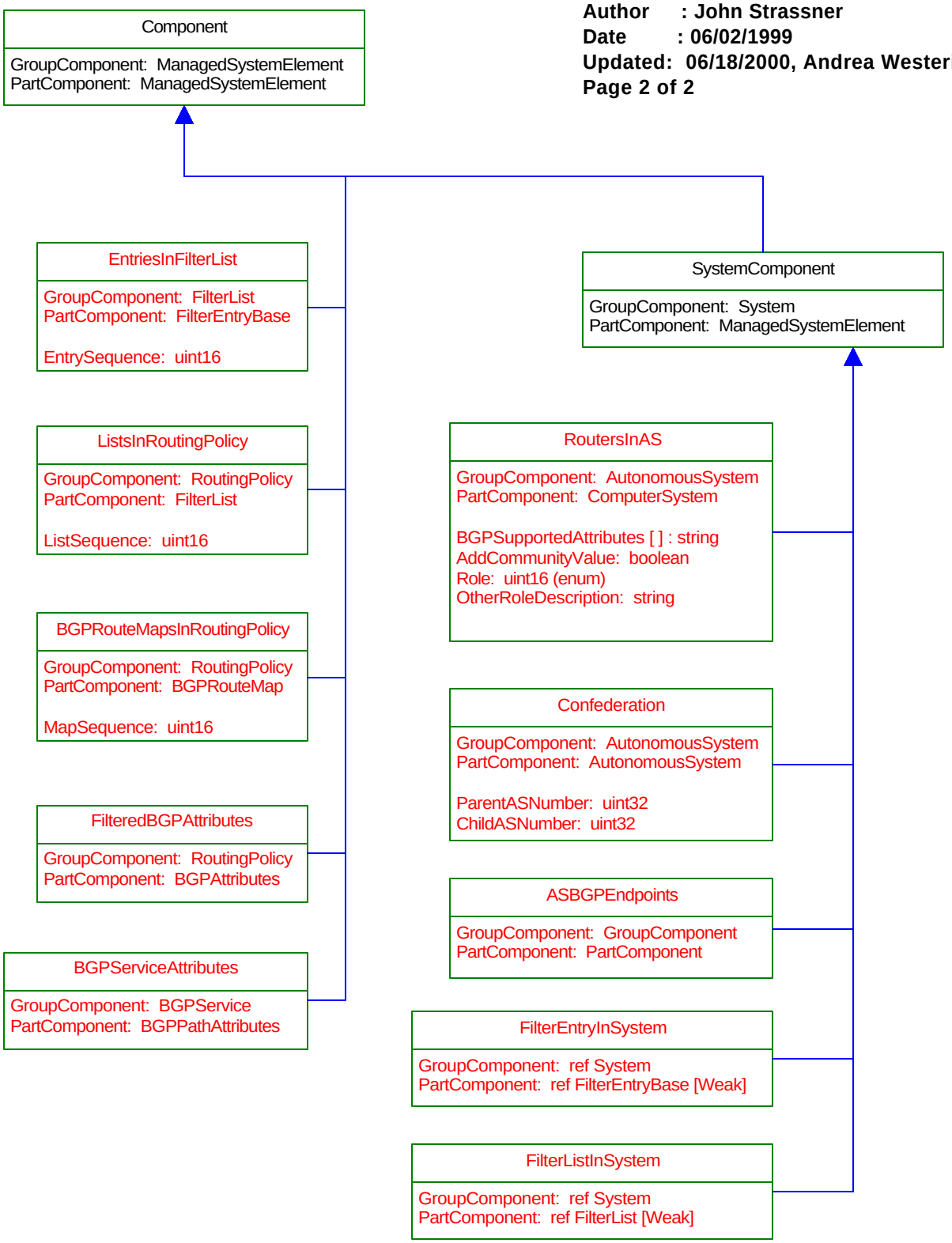

Statistics
*
StatisticalInformation
Name: string
InSegment
BGPProtocolEndpoint
IsEBGP: boolean
IsEBGPMultihop: boolean
LocalIdentifier: string
PeerIdentifier: string
State: uint16 (enum)
AdminStatus: uint16 (enum)
NegotiatedVersion: uint16
LocalAddress: string
LocalPort: uint16
RemoteAddress: string
RemotePort: uint16
RemoteAS: uint16
HoldTime: uint16
KeepAlive: uint16
0..2
RoutesBGP
*
AdministrativeDistance
CreationClassName: string [key]
Name: string [key]
DirectConnect: uint8
Static: uint8
EBGP: uint8
EIGRPInternal: uint8
IGRP: uint8
OSPF: uint8
ISIS: uint8
RIP: uint8
EGP: uint8
EIGRPExternal: uint8
IBGP: uint8
BGPLocal: uint8
Unknown: uint8
ServiceStatisticalInformation
SystemCreationClassName: string [key]
SystemName: string [key]
ServiceCreationClassName: string [key]
ServiceName: string [key]
CreationClassName: string [key]
Name: string [key]
1
BGPAdminDistance
BGPServiceStatistics
0..1
BGPStatistics
Name: string
InUpdates: uint32
OutUpdates: uint32
InTotalMessages: uint32
OutTotalMessages: uint32
LastError: uint8 [2]
FsmEstablishedTransitions: uint32
FsmEstablishedTime: uint32
InUpdateElapsedTime: uint32
BGPAttributes
ForRoute
BGPServiceAttributes
0..1
1
BGPPathAttributes
PathAttrASPathSegment: uint8 [ ]
ASNumbers: string [key]
PathAttrNextHop: string [key]
PathAttrOrigin: uint16 (enum)
PathAttrMultiExitDisc: sint32
PathAttrLocalPref: sint32
PathAttrAtomicAggregate: uint32 (enum)
PathAttrAggregatorAS: uint16
PathAttrAggregatorAddr: string
PathAttrCalcLocalPref: sint16
PathAttrBest: uint16 (enum)
PathAttrUnknown: string [ ]
PathAttrUnknownNumber: uint8
CollectionOfMSEs
(repeated here for
drawing convenience)
BGPPeerGroup
1
*
CreationClassName: string [key]
Name: string [key]
ConnectRetryInterval: uint16
HoldTimeConfigured: uint16
KeepAliveConfigured: uint16
MinASOriginationInterval: uint16
MinRouteAdvertisementInterval: uint16
0..1


Dependency
Antecedent: ManagedElement
Dependent: ManagedElement
SAPSAPDependency
Antecedent: ServiceAccessPoint
Dependent: ServiceAccessPoint
BGPRoutingPolicy
Antecedent: RoutingPolicy
Dependent: BGPService
ServiceSAPDependency
Antecedent: ServiceAccessPoint
Dependent: Service
FilterListsInBGPRouteMap
Antecedent: FilterList
Dependent: BGPRouteMap
CalculatesAmong
Antecedent: ProtocolEndpoint
Dependent: RouteCalculationService
IsStatic: boolean
BGPAdminDistance
Antecedent: AdministrativeDistance
Dependent: BGPService
ForwardsAmong
Antecedent: ProtocolEndpoint
Dependent: ForwardingService
RoutesBGP
Antecedent: BGPProtocolEndpoint
Dependent: BGPIPRoute
BGPAttributesForRoute
Antecedent: BGPPathAttributes
Dependent: BGPIPRoute
PathAttrPeer: string
PathAttrIPAddrPrefix: string
PathAttrIPAddrPrefixLen: uint8
ForwardedRoutes
Antecedent: ForwardingService
Dependent: IPRoute
AdminDistance: uint16
PathMetric: uint16
ReflectorService
Antecedent: BGPCluster
Dependent: BGPService
CalculatedRoutes
Antecedent: RouteCalculationService
Dependent: IPRoute
ReflectorClientService
Antecedent: BGPCluster
Dependent: BGPService
BindsTo
Antecedent: ProtocolEndpoint
Dependent: ServiceAccessPoint
ActiveConnection
Antecedent: ProtocolEndpoint
Dependent: ProtocolEndpoint
TrafficType: uint16 (enum)
OtherTrafficDescription: string
IsUnidirectional: boolean
ReflectorNonClientService
Antecedent: BGPCluster
Dependent: BGPService
BindsToLANEndpoint
Antecedent: LANEndpoint
Dependent: ProtocolEndpoint
FrameType: uint16 (enum)
BGPPeerGroupService
Antecedent: BGPPeerGroup
Dependent: BGPService
NetworkServicesInAdminDomain
Antecedent: AdminDomain
Dependent: NetworkService

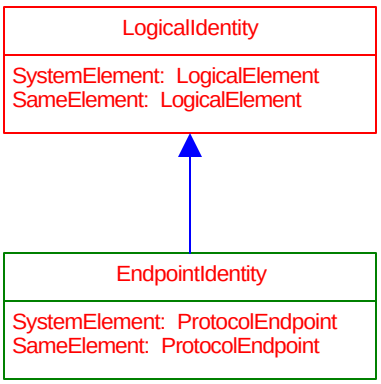

ServiceAccessBySAP
Antecedent: Service
Dependent: ServiceAccessPoint
HostedService
Antecedent: System
Dependent: Service
ServiceServiceDependency
Antecedent: Service
Dependent: Service
ProvidesEndpoint
Antecedent: NetworkService
Dependent: ProtocolEndpoint
HostedRoutingServices
Antecedent: ComputerSystem
Dependent: RouteCalculationService
EGPRouteCalcDependency
Antecedent: RouteCalculationService
Dependent: RouteCalculationService
IGPinjection: uint16 (enum)
HostedForwardingServices
Antecedent: ComputerSystem
Dependent: ForwardingService


MemberOfCollection
Collection: Collection
Member: ManagedElement
CollectedMSEs
Collection: CollectionOfMSEs
Member: ManagedSystemElement
RoutersInBGPCluster
Collection: BGPCluster
Member: ComputerSystem
InLogicalNetwork
Collection: LogicalNetwork
Member: ProtocolEndpoint
InBGPPeerGroup
Collection: BGPPeerGroup
Member: ComputerSystem
InSegment
Collection: LANSegment
Member: LANEndpoint
BGPPeerUsesRouteMap
Collection: BGPPeerGroup
Member: BGPRouteMap
MapSequence: uint16

Title : BGP Sub-model (UML diagram)
Filename: CIM_NetworkBGPV24.vsd
Author : John Strassner
Date : 06/02/1999
Updated: 06/18/2000, Andrea Westerinen



BGPClustersInAS
GroupAS: AutonomousSystem
PartAS: BGPCluster
LogicalNetworkService
Network: LogicalNetwork
NetworkService: NetworkService
ContainmentType: uint16 (enum)
NetworksInAdminDomain
Domain: AdminDomain
Network: LogicalNetwork
Statistics
Stats: StatisticalInformation
Element: ManagedElement
ServiceStatistics
Stats: ServiceStatisticalInformation
Element: Service
BGPServiceStatistics
Stats: BGPStatistics
Element: BGPService


LogicalIdentity
SystemElement: LogicalElement
SameElement: LogicalElement
EndpointIdentity
SystemElement: ProtocolEndpoint
SameElement: ProtocolEndpoint