TABLE I Model Parameters: Input Variables

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| Symbol | Description |
| *N* | The nodes within the network, consisting of a set of computational nodes *Nc* and a set of PNF nodes *Np*. |
| *E* | The edges within the network. |
| *Ein*(*n*) | The edges that are incoming in node *n*∈*N*. |
| *Eout*(*n*) | The edges that are outgoing from node *n*∈*N*. |
| *C*(*e*) | The bandwidth capacity of an edge *e*∈*E*. |
| S | The collection of all NFs that exist within the model. |
| *T* | The collection of resoure types. *Tn* represents the resoure types that are available on a node *n*∈*N*, while *Ts* represents the resource types provided by a NF *s*∈*S*. |
| *Ct* | The resource capacity of a node is defined as *Ct*(*n*). An NF type *s* provides *Ct*(*s*) resources of types *t*∈*Ts*. |
| *NC*(*n*) | The cost of using a node *n*∈*N* during resource allocation. |
| *NCt*(*n*) | The cost of using resources of type *t*∈*Ts* on node *n*∈*N.* |
| *H* | The CFCs that must be allocated on the network. |
| *F*(*h*) | The feature model of a service chain *h*∈*H*, containing a collection of features *f*∈*F*(*h*) and the relations between these features. |
| *Fp*(*h*) | This collection contains the physical features in the feature model of service chain *h*∈*H*, i.e. the features that are directly related to an asset request. |
| *It*(*f1, f2*) | The impact on the resource demands of feature *f2* when feature *f1* is included. |
| *G* | The segment (*fm, fn*) between source associated with feature *fm*∈*F*(*h*) and the sink associated with feature *fn*∈*F*(*h*). |
| *I*(*f1,* (*fm, fn*)) | The impact on the network demand between segment (*fm, fn*). |
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