

FPolicy XML Notification Schema

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Overview

This document covers the XML schemas for different FPolicy notification messages.

Protocol Version Changes

The protocol version is negotiated in the handshake messages when the controller (ontap) establishes a connection with the FPolicy server. Below are the additions in the versions.

* Version 1.0 :
* Initial version
* Version 1.1 :
* Additional response values supported in FPolicy notification response.
* Version 1.2 :
* RdBytes and WrBytes tags supported in SMB\_CLOSE notifications.
* GenerationTime tag supported in SCREEN\_REQ notifications.
* Version 2.0 :
* OUTAGE\_MSG notifications are supported for FPolicy resiliency feature.

Message Schema

Header Message

Table ) XML Schema for Header message.

|  |
| --- |
| XML schema for Header message |
| <?xml version="1.0"?>  <xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">  <xs:simpleType name="NotfTypeE">  <xs:restriction base="xs:string">  <xs:enumeration value="NEGO\_REQ"/>  <xs:enumeration value="NEGO\_RESP"/>  <xs:enumeration value="SCREEN\_REQ"/>  <xs:enumeration value="SCREEN\_RESP"/>  <xs:enumeration value="VOL\_NOTFICATION"/>  <xs:enumeration value="SCREEN\_CANCEL"/>  <xs:enumeration value="STATUS\_QUERY\_REQ"/>  <xs:enumeration value="STATUS\_QUERY\_RESP"/>  <xs:enumeration value="BACK\_PRESSURE\_APPLY"/>  <xs:enumeration value="BACK\_PRESSURE\_REM"/>  <xs:enumeration value="KEEP\_ALIVE"/>  <xs:enumeration value="ALERT\_MSG"/>  <xs:enumeration value="OUTAGE\_MSG"/>  </xs:restriction>  </xs:simpleType>  <xs:simpleType name="DataFormatE">  <xs:restriction base="xs:string">  <xs:enumeration value="XML"/>  </xs:restriction>  </xs:simpleType>  <xs:element name="Header">  <xs:complexType>  <xs:sequence>  <xs:element name="NotfType" type="NotfTypeE" nillable="true"/>  <xs:element name="ContentLen" type="xs:unsignedInt" nillable="true"/>  <xs:element name="DataFormat" type="DataFormatE" nillable="true"/>  </xs:sequence>  </xs:complexType>  </xs:element>  </xs:schema> |

**Sample Header request will look as below :**

|  |
| --- |
| <?xml version="1.0"?><Header><NotfType>SCREEN\_REQ</NotfType><ContentLen>1049</ContentLen> <DataFormat>XML</DataFormat></Header> |

Handshake Request

Table ) XML Schema for Handshake Request.

|  |
| --- |
| XML Schema for Handshake Request |
| <?xml version="1.0"?>  <xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">  <xs:complexType name="ProtVersT">  <xs:sequence>  <xs:element name="Vers" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>  </xs:sequence>  </xs:complexType>  <xs:element name="Handshake">  <xs:complexType>  <xs:sequence>  <xs:element name="VsUUID" type="xs:string" nillable="true"/>  <xs:element name="PolicyName" type="xs:string" nillable="true"/>  <xs:element name="SessionId" type="xs:string" nillable="true"/>  <xs:element name="ProtVersion" type="ProtVersT"/>  </xs:sequence>  </xs:complexType>  </xs:element>  </xs:schema> |

**Each of the field in the above schema is described below :**

****VsUUID** : This field contains UUID of the vserver in which FPolicy is enabled.**

****PolicyName** : This field contains the policy name in the vserver for which an external connection is established with the FPolicy server for providing file notification.**

****SessionID** : This is a unique Id created by storage appliance once a secure connection is established with the FPolicy server. FPolicy server must store the session\_id to tag a connection for a policy. Storage appliance will use this session\_id in case the connection is broken and FSM re-establish the session. This session id will also be useful during VIF movement within the same node.**

****ProtVersions** : This field contains the protocol version number. Note that during a protocol handshake request, in future, there might be multiple protocol version which will be send by storage appliance to FPolicy server.**

**Sample Handshaek request :**

|  |
| --- |
| <?xml version="1.0"?><Handshake<VsUUID>5fd3260c-00af-11e2-b1a6-123478563412</VsUUID><PolicyName>pol0</PolicyName><SessionId>74b09629-d4ae-11e1-aea3-123478563412</SessionId><ProtVersion><Vers>1.0</Vers></ProtVersion></Handshake> |

Handshake Response

Table ) XML Schema for Handshake Response.

|  |
| --- |
| XML Schema for Handshake Response |
| <?xml version="1.0"?>  <xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">  <xs:element name="HandshakeResp">  <xs:complexType>  <xs:sequence>  <xs:element name="VsUUID" nillable="true">  <xs:simpleType>  <xs:restriction base="xs:string">  <xs:minLength value="1"/>  <xs:maxLength value="36"/>  </xs:restriction>  </xs:simpleType>  </xs:element>  <xs:element name="PolicyName" nillable="true">  <xs:simpleType>  <xs:restriction base="xs:string">  <xs:minLength value="1"/>  <xs:maxLength value="256"/>  </xs:restriction>  </xs:simpleType>  </xs:element>  <xs:element name="SessionId" nillable="true">  <xs:simpleType>  <xs:restriction base="xs:string">  <xs:minLength value="1"/>  <xs:maxLength value="36"/>  </xs:restriction>  </xs:simpleType>  </xs:element>  <xs:element name="ProtVersion" type="xs:string" nillable="true"/>  </xs:sequence>  </xs:complexType>  </xs:element>  </xs:schema> |

**All the fields in the handshake response has same meaning as described in handshake request except protocol\_version.**

****ProtVersion** : While sending handshake response, FPolicy server must return one protocol from the list of**

**protocol mentioned in protocol handshake request..**

**Sample Handshake response :**

|  |
| --- |
| <?xml version="1.0"?><HandshakeResp><VsUUID>705d9818-1845-11e2-9b34-123478563412</VsUUID><PolicyName>cp1</PolicyName><SessionId>5078a3ef-45cd-11e2-a9e3-123478563412</SessionId><ProtVersion><Vers>1.0</Vers></ProtVersion></HandshakeResp> |

File Notification Request

Table ) XML Schema for File Notification Request

|  |
| --- |
| XML Schema for File Notification Request |
| <?xml version="1.0"?>  <xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">  <xs:simpleType name="ReqTypeE">  <xs:restriction base="xs:string">  <xs:enumeration value="SMB\_OPEN"/>  <xs:enumeration value="SMB\_CLOSE"/>  <xs:enumeration value="SMB\_CREAT"/>  <xs:enumeration value="SMB\_CREAT\_DIR"/>  <xs:enumeration value="SMB\_DEL"/>  <xs:enumeration value="SMB\_DEL\_DIR"/>  <xs:enumeration value="SMB\_REN"/>  <xs:enumeration value="SMB\_REN\_DIR"/>  <xs:enumeration value="SMB\_GET\_ATTR"/>  <xs:enumeration value="SMB\_SET\_ATTR"/>  <xs:enumeration value="SMB\_RD"/>  <xs:enumeration value="SMB\_WR"/>  <xs:enumeration value="NFS\_LOOKUP"/>  <xs:enumeration value="NFS\_CREAT"/>  <xs:enumeration value="NFS\_CREAT\_DIR"/>  <xs:enumeration value="NFS\_DEL"/>  <xs:enumeration value="NFS\_DEL\_DIR"/>  <xs:enumeration value="NFS\_REN"/>  <xs:enumeration value="NFS\_REN\_DIR"/>  <xs:enumeration value="NFS\_OPEN"/>  <xs:enumeration value="NFS\_CLOSE"/>  <xs:enumeration value="NFS\_RD"/>  <xs:enumeration value="NFS\_WR"/>  <xs:enumeration value="NFS\_GET\_ATTR"/>  <xs:enumeration value="NFS\_SET\_ATTR"/>  <xs:enumeration value="NFS\_LNK"/>  <xs:enumeration value="NFS\_SYM\_LNK"/>  </xs:restriction>  </xs:simpleType>  <xs:simpleType name="UsrIdE">  <xs:restriction base="xs:string">  <xs:enumeration value="UNIX\_ONLY"/>  <xs:enumeration value="WIN\_ONLY"/>  <xs:enumeration value="MAPPED\_ID"/>  </xs:restriction>  </xs:simpleType>  <xs:complexType name="MappedIdT">  <xs:sequence>  <xs:element name="Uid" type="xs:unsignedInt"/>  <xs:element name="WinSid" type="xs:string" nillable="true"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="UsrIdU">  <xs:choice>  <xs:element name="UnixUid" type="xs:unsignedInt"/>  <xs:element name="WinSid" type="xs:string" nillable="true"/>  <xs:element name="MappedId" type="MappedIdT"/>  </xs:choice>  </xs:complexType>  <xs:simpleType name="FileTypeE">  <xs:restriction base="xs:string">  <xs:enumeration value="FILE"/>  <xs:enumeration value="DIR"/>  <xs:enumeration value="STREAM"/>  <xs:enumeration value="SYMLINK"/>  </xs:restriction>  </xs:simpleType>  <xs:simpleType name="PathNameE">  <xs:restriction base="xs:string">  <xs:enumeration value="WIN\_NAME"/>  <xs:enumeration value="WIN\_8\_3\_NAME"/>  <xs:enumeration value="UNIX\_NAME"/>  </xs:restriction>  </xs:simpleType>  <xs:complexType name="PathNameT">  <xs:sequence>  <xs:element name="PathNameType" type="PathNameE" nillable="true"/>  <xs:element name="PathName" type="xs:string"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="AccessPathT">  <xs:sequence>  <xs:element name="Path" type="PathNameT" minOccurs="0" maxOccurs="3"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="ProtCommonInfoT">  <xs:sequence> **// GenerationTime tag added in protocol version 1.2**  <xs:element name="ClientIp" type="xs:string" nillable="true"/>  <xs:element name=\"GenerationTime\" minOccurs=\"0\" maxOccurs=\"1\" type=\"xs:unsignedLong\"/>"  <xs:element name="UsrIdType" type="UsrIdE"/>  <xs:element name="UsrContext" type="UsrIdU"/>  <xs:element name="FileOwner" type="UsrIdU" />  <xs:element name="AccessPath" type="AccessPathT"/>  <xs:element name="VolMsid" type="xs:unsignedLong"/>  <xs:element name="FileSize" type="xs:unsignedLong"/>  <xs:element name="NumHardLnk" type="xs:unsignedInt"/>  <xs:element name="IsOfflineAttr" type="xs:boolean"/>  <xs:element name="FileType" type="xs:FileTypeE"/>  <xs:element name="IsSparse" type="xs:boolean"/>  <xs:element name="IsDense" type="xs:boolean"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="SmbProtVerT">  <xs:sequence>  <xs:element name="MajorNum" type="xs:unsignedInt"/>  <xs:element name="MinorNum" type="xs:unsignedInt"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="SmbCommonInfoT">  <xs:sequence>  <xs:element name="ProtCommonInfo" type="ProtCommonInfoT"/>  <xs:element name="DisplayPath" type="xs:string"/>  <xs:element name="ProtVer" type="SmbProtVerT"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="NfsProtVerT">  <xs:sequence>  <xs:element name="MajorNum" type="xs:unsignedInt"/>  <xs:element name="MinorNum" type="xs:unsignedInt"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="NfsCommonInfoT">  <xs:sequence>  <xs:element name="ProtCommonInfo" type="ProtCommonInfoT"/>  <xs:element name="ProtVer" type="NfsProtVerT"/>  <xs:element name="UserGids" type="xs:unsignedInt"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="SmbOpenT">  <xs:sequence>  <xs:element name="CommonInfo" type="SmbCommonInfoT"/>  <xs:element name="OpenAccmode" type="xs:unsignedInt"/>  <xs:element name="OpenSharemode" type="xs:unsignedInt"/>  <xs:element name="OpenOptions" type="xs:unsignedInt"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="SmbCloseT">  <xs:sequence> **// RdBytes and WrBytes tags added in protocol version 1.2**  <xs:element name="CommonInfo" type="SmbCommonInfoT"/>  <xs:element name="RdBytes" minOccurs="0" maxOccurs="1" type="xs:unsignedLong"/>  <xs:element name="WrBytes" minOccurs="0" maxOccurs="1" type="xs:unsignedLong"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="SmbDeleteT">  <xs:sequence>  <xs:element name="CommonInfo" type="SmbCommonInfoT"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="SmbCreatT">  <xs:sequence>  <xs:element name="CommonInfo" type="SmbCommonInfoT"/>  <xs:element name="CreatAccmode" type="xs:unsignedInt"/>  <xs:element name="CreatSharemode" type="xs:unsignedInt"/>  <xs:element name="CreatDisposition" type="xs:unsignedInt"/>  <xs:element name="CreatOptions" type="xs:unsignedInt"/>  <xs:element name="CreatNewObject" type="xs:boolean"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="SmbRenT">  <xs:sequence>  <xs:element name="CommonInfo" type="SmbCommonInfoT"/>  <xs:element name="TargetAccessPath" type="AccessPathT" nillable="true"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="SetAttrTimeT">  <xs:sequence>  <xs:element name="Secs" type="xs:long"/>  <xs:element name="NanoSecs" type="xs:unsignedInt"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="SmbSetAttrT">  <xs:sequence>  <xs:element name="CommonInfo" type="SmbCommonInfoT"/>  <xs:element name="SetAttrChangeAttr" type="xs:unsignedInt"/>  <xs:element name="SetAttrNewOwner" type="UsrIdU" minOccurs="0"/>  <xs:element name="SetAttrNewGroup" type="UsrIdU" minOccurs="0"/>  <xs:element name="SetAttrFileSize" type="xs:unsignedLong" minOccurs="0"/>  <xs:element name="SetAttrFileAllocSize" type="xs:unsignedLong" minOccurs="0"/>  <xs:element name="SetAttrMtime" type="SetAttrTimeT" minOccurs="0"/>  <xs:element name="SetAttrAtime" type="SetAttrTimeT" minOccurs="0"/>  <xs:element name="SetAttrCtime" type="SetAttrTimeT" minOccurs="0"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="SmbReadT">  <xs:sequence>  <xs:element name="CommonInfo" type="SmbCommonInfoT"/>  <xs:element name="RdOffset" type="xs:unsignedLong"/>  <xs:element name="RdLength" type="xs:unsignedInt"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="SmbWriteT">  <xs:sequence>  <xs:element name="CommonInfo" type="SmbCommonInfoT"/>  <xs:element name="WrOffset" type="xs:unsignedLong"/>  <xs:element name="WrLength" type="xs:unsignedInt"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="SmbGetAttrT">  <xs:sequence>  <xs:element name="CommonInfo" type="SmbCommonInfoT"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="NfsRenT">  <xs:sequence>  <xs:element name="CommonInfo" type="NfsCommonInfoT"/>  <xs:element name="TargetAccessPath" type="AccessPathT" nillable="true"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="NfsSetAttrCommonT">  <xs:sequence>  <xs:element name="SetAttrMode" type="xs:unsignedInt" minOccurs="0"/>  <xs:element name="SetAttrUid" type="xs:unsignedInt" minOccurs="0"/>  <xs:element name="SetAttrGid" type="xs:unsignedInt" minOccurs="0"/>  <xs:element name="SetAttrSize" type="xs:unsignedLong" minOccurs="0"/>  <xs:element name="SetAttrMtime" type="SetAttrTimeT" minOccurs="0"/>  <xs:element name="SetAttrAtime" type="SetAttrTimeT" minOccurs="0"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="NfsSetAttrT">  <xs:sequence>  <xs:element name="CommonInfo" type="NfsCommonInfoT"/>  <xs:element name="ChangeAttr" type="xs:unsignedInt"/>  <xs:element name="SetAttrCommon" type="NfsSetAttrCommonT"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="NfsReadT">  <xs:sequence>  <xs:element name="CommonInfo" type="NfsCommonInfoT"/>  <xs:element name="RdOffset" type="xs:unsignedLong"/>  <xs:element name="RdLength" type="xs:unsignedInt"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="NfsWriteT">  <xs:sequence>  <xs:element name="CommonInfo" type="NfsCommonInfoT"/>  <xs:element name="WrOffset" type="xs:unsignedLong"/>  <xs:element name="WrLength" type="xs:unsignedInt"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="NfsCreatT">  <xs:sequence>  <xs:element name="CommonInfo" type="NfsCommonInfoT"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="NfsDelT">  <xs:sequence>  <xs:element name="CommonInfo" type="NfsCommonInfoT"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="NfsGetAttrT">  <xs:sequence>  <xs:element name="CommonInfo" type="NfsCommonInfoT"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="NfsLinkT">  <xs:sequence>  <xs:element name="CommonInfo" type="NfsCommonInfoT"/>  <xs:element name="TargetAccessPath" type="AccessPathT" nillable="true"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="NfsSymLinkT">  <xs:sequence>  <xs:element name="CommonInfo" type="NfsCommonInfoT"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="NfsOpenT">  <xs:sequence>  <xs:element name="CommonInfo" type="NfsCommonInfoT"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="NfsCloseT">  <xs:sequence>  <xs:element name="CommonInfo" type="NfsCommonInfoT"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="NfsLookupT">  <xs:sequence>  <xs:element name="CommonInfo" type="NfsCommonInfoT"/>  </xs:sequence>  </xs:complexType>  <xs:complexType name="FileNotfInfoT">  <xs:choice>  <xs:element name="SmbCreatReq" type="SmbCreatT"/>  <xs:element name="SmbOpenReq" type="SmbOpenT"/>  <xs:element name="SmbCloseReq" type="SmbCloseT"/>  <xs:element name="SmbRenReq" type="SmbRenT"/>  <xs:element name="SmbSetAttrReq" type="SmbSetAttrT"/>  <xs:element name="SmbRdReq" type="SmbReadT"/>  <xs:element name="SmbWrReq" type="SmbWriteT"/>  <xs:element name="SmbDelReq" type="SmbDeleteT"/>  <xs:element name="SmbGetAttrReq" type="SmbGetAttrT"/>  <xs:element name="NfsRenReq" type="NfsRenT"/>  <xs:element name="NfsSetAttrReq" type="NfsSetAttrT"/>  <xs:element name="NfsGetAttrReq" type="NfsGetAttrT"/>  <xs:element name="NfsRdReq" type="NfsReadT"/>  <xs:element name="NfsWrReq" type="NfsWriteT"/>  <xs:element name="NfsCreatReq" type="NfsCreatT"/>  <xs:element name="NfsDelReq" type="NfsDelT"/>  <xs:element name="NfsLnkReq" type="NfsLinkT"/>  <xs:element name="NfsSymLnkReq" type="NfsSymLinkT"/>  <xs:element name="NfsOpenReq" type="NfsOpenT"/>  <xs:element name="NfsCloseReq" type="NfsCloseT"/>  <xs:element name="NfsLookupReq" type="NfsLookupT"/>  </xs:choice>  </xs:complexType>  <xs:element name="FscreenReq">  <xs:complexType>  <xs:sequence>  <xs:element name="ReqId" type="xs:unsignedLong" nillable="true"/>  <xs:element name="ReqType" type="ReqTypeE"/>  <xs:element name="NotfInfo" type="FileNotfInfoT"/>  </xs:sequence>  </xs:complexType>  </xs:element>  </xs:schema> |
| SetAttrChangeAttr // mask can take the following values:  FPOLICY\_FILE\_OWNER\_CHANGED = 0x0001,  FPOLICY\_FILE\_GROUP\_CHANGED = 0x0002,  FPOLICY\_FILE\_SACL\_CHANGED = 0x0004,  FPOLICY\_FILE\_DACL\_CHANGED = 0x0008,  FPOLICY\_FILE\_MODIFY\_TIME\_CHANGED = 0x0010,  FPOLICY\_FILE\_ACCESS\_TIME\_CHANGED = 0x0020,  FPOLICY\_FILE\_CREATION\_TIME\_CHANGED = 0x0040,  FPOLICY\_FILE\_MODE\_CHANGED = 0x0080,  FPOLICY\_FILE\_SIZE\_CHANGED = 0x0100,  FPOLICY\_FILE\_ALLOC\_SIZE\_CHANGED = 0x0200 |

**Sample File notification request:**

|  |
| --- |
| <?xml version="1.0"?><FscreenReq><ReqId>3244068</ReqId><ReqType>SMB\_REN</ReqType><NotfInfo> <SmbRenReq><CommonInfo><ProtCommonInfo><ClientIp>10.72.68.132</ClientIp><GenerationTime>9685710478</GenerationTime><UsrIdType>MAPPED\_ID</UsrIdType><UsrContext><WinSid>administrator</WinSid></UsrContext><FileOwner><UnixUid>0</UnixUid></FileOwner><AccessPath><Path><PathNameType>WIN\_NAME</PathNameType><PathName>\FILE1.TXT</PathName></Path><Path><PathNameType>UNIX\_NAME</PathNameType><PathName>/FILE1.TXT</PathName></Path></AccessPath><VolMsid>2147484673</VolMsid><FileSize>5</FileSize><NumHardLnk>1</NumHardLnk><IsOfflineAttr>0</IsOfflineAttr><FileType>FILE</FileType><IsSparse>0</IsSparse><IsDense>0</IsDense></ProtCommonInfo><DisplayPath>-</DisplayPath><ProtVer><MajorNum>2</MajorNum> <MinorNum>1</MinorNum></ProtVer></CommonInfo><TargetAccessPath><Path><PathNameType>WIN\_NAME</PathNameType><PathName>\FILE1RENAMED.TXT</PathName></Path><Path><PathNameType>UNIX\_NAME</PathNameType><PathName>/FILE1RENAMED.TXT</PathName></Path></TargetAccessPath></SmbRenReq></NotfInfo></FscreenReq> |

File Notification Response

Table ) XML Schema for File Notification Response.

|  |
| --- |
| XML Schema for File Notification Response |
| <?xml version="1.0"?>  <xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">  <xs:simpleType name="ReqTypeE">  <xs:restriction base="xs:string">  <xs:enumeration value="SMB\_OPEN"/>  <xs:enumeration value="SMB\_CLOSE"/>  <xs:enumeration value="SMB\_CREAT"/>  <xs:enumeration value="SMB\_CREAT\_DIR"/>  <xs:enumeration value="SMB\_DEL"/>  <xs:enumeration value="SMB\_DEL\_DIR"/>  <xs:enumeration value="SMB\_REN"/>  <xs:enumeration value="SMB\_REN\_DIR"/>  <xs:enumeration value="SMB\_GET\_ATTR"/>  <xs:enumeration value="SMB\_SET\_ATTR"/>  <xs:enumeration value="SMB\_RD"/>  <xs:enumeration value="SMB\_WR"/>  <xs:enumeration value="NFS\_LOOKUP"/>  <xs:enumeration value="NFS\_CREAT"/>  <xs:enumeration value="NFS\_CREAT\_DIR"/>  <xs:enumeration value="NFS\_DEL"/>  <xs:enumeration value="NFS\_DEL\_DIR"/>  <xs:enumeration value="NFS\_REN"/>  <xs:enumeration value="NFS\_REN\_DIR"/>  <xs:enumeration value="NFS\_OPEN"/>  <xs:enumeration value="NFS\_CLOSE"/>  <xs:enumeration value="NFS\_RD"/>  <xs:enumeration value="NFS\_WR"/>  <xs:enumeration value="NFS\_GET\_ATTR"/>  <xs:enumeration value="NFS\_SET\_ATTR"/>  <xs:enumeration value="NFS\_LNK"/>  <xs:enumeration value="NFS\_SYM\_LNK"/>  </xs:restriction>  </xs:simpleType>  <xs:element name="FscreenResp">  <xs:complexType>  <xs:sequence>  <xs:element name="ReqId" type="xs:unsignedLong" nillable="true"/>  <xs:element name="ReqType" type="ReqTypeE"/>  <xs:element name="NotfResp" type="xs:unsignedInt"/>  </xs:sequence>  </xs:complexType>  </xs:element>  </xs:schema> |

****NotfResp** : Notification response can be any of the following values.**

1. **Allow the request = 1,**
2. **Deny the request = 2,**
3. **FPOLICY\_ERR\_DISK\_FULL = 3,**
4. **FPOLICY\_ERR\_DISK\_QUOTA\_EXCEEDED = 4,**
5. **FPOLICY\_ERR\_CONTENT\_BLOCKED = 5,**
6. **FPOLICY\_ERR\_BAD\_FILE\_TYPE = 6,**
7. **FPOLICY\_ERR\_QUOTA\_EXCEEDED = 7**

**Note: Response values 3 – 7 are supported from version 1.1 onwards.**

**Sample File Notification Response:**

|  |
| --- |
| <?xml version="1.0"?><FscreenResp><ReqId>3240772</ReqId><ReqType>SMB\_CLOSE</ReqType><NotfResp>1 </NotfResp></FscreenResp> |

File Notification Cancel Request

Table ) XML Schema for File Notification Cancel Request.

|  |
| --- |
| XML schema for File Notification Cancel Request |
| <?xml version="1.0"?>  <xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">  <xs:simpleType name="ReqTypeE">  <xs:restriction base="xs:string">  <xs:enumeration value="SMB\_OPEN"/>  <xs:enumeration value="SMB\_CLOSE"/>  <xs:enumeration value="SMB\_CREAT"/>  <xs:enumeration value="SMB\_CREAT\_DIR"/>  <xs:enumeration value="SMB\_DEL"/>  <xs:enumeration value="SMB\_DEL\_DIR"/>  <xs:enumeration value="SMB\_REN"/>  <xs:enumeration value="SMB\_REN\_DIR"/>  <xs:enumeration value="SMB\_GET\_ATTR"/>  <xs:enumeration value="SMB\_SET\_ATTR"/>  <xs:enumeration value="SMB\_RD"/>  <xs:enumeration value="SMB\_WR"/>  <xs:enumeration value="NFS\_LOOKUP"/>  <xs:enumeration value="NFS\_CREAT"/>  <xs:enumeration value="NFS\_CREAT\_DIR"/>  <xs:enumeration value="NFS\_DEL"/>  <xs:enumeration value="NFS\_DEL\_DIR"/>  <xs:enumeration value="NFS\_REN"/>  <xs:enumeration value="NFS\_REN\_DIR"/>  <xs:enumeration value="NFS\_OPEN"/>  <xs:enumeration value="NFS\_CLOSE"/>  <xs:enumeration value="NFS\_RD"/>  <xs:enumeration value="NFS\_WR"/>  <xs:enumeration value="NFS\_GET\_ATTR"/>  <xs:enumeration value="NFS\_SET\_ATTR"/>  <xs:enumeration value="NFS\_LNK"/>  <xs:enumeration value="NFS\_SYM\_LNK"/>  </xs:restriction>  </xs:simpleType>  <xs:element name="FscreenCancel">  <xs:complexType>  <xs:sequence>  <xs:element name="ReqId" type="xs:unsignedLong" nillable="true"/>  <xs:element name="ReqType" type="ReqTypeE"/>  <xs:element name="CancelReason" type="xs:string"/>  </xs:sequence>  </xs:complexType>  </xs:element>  </xs:schema> |

**CancelReason'** : The following integer values specifies different cancel reasons :

1 : Abort Timeout was hit.

2 : Cancel Timeout was hit.

3 : File screen status request was not acknowledged.

4 : Policy was disabled and all the requests sent to FPolicy servers are cancelled

**Sample File Notification Cancle request:**

|  |
| --- |
| <?xml version="1.0"?><FscreenCancel><ReqId>3252228</ReqId><ReqType>SMB\_OPEN</ReqType> <CancelReason>Cancel Timedout</CancelReason></FscreenCancel> |

File Notification Status Query Request

Table ) XML Schema for File Notification Status Query Request.

|  |
| --- |
| XML Schema for File Notification Status Query Request |
| <?xml version="1.0"?>  <xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">  <xs:simpleType name="ReqTypeE">  <xs:restriction base="xs:string">  <xs:enumeration value="SMB\_OPEN"/>  <xs:enumeration value="SMB\_CLOSE"/>  <xs:enumeration value="SMB\_CREAT"/>  <xs:enumeration value="SMB\_CREAT\_DIR"/>  <xs:enumeration value="SMB\_DEL"/>  <xs:enumeration value="SMB\_DEL\_DIR"/>  <xs:enumeration value="SMB\_REN"/>  <xs:enumeration value="SMB\_REN\_DIR"/>  <xs:enumeration value="SMB\_GET\_ATTR"/>  <xs:enumeration value="SMB\_SET\_ATTR"/>  <xs:enumeration value="SMB\_RD"/>  <xs:enumeration value="SMB\_WR"/>  <xs:enumeration value="NFS\_LOOKUP"/>  <xs:enumeration value="NFS\_CREAT"/>  <xs:enumeration value="NFS\_CREAT\_DIR"/>  <xs:enumeration value="NFS\_DEL"/>  <xs:enumeration value="NFS\_DEL\_DIR"/>  <xs:enumeration value="NFS\_REN"/>  <xs:enumeration value="NFS\_REN\_DIR"/>  <xs:enumeration value="NFS\_OPEN"/>  <xs:enumeration value="NFS\_CLOSE"/>  <xs:enumeration value="NFS\_RD"/>  <xs:enumeration value="NFS\_WR"/>  <xs:enumeration value="NFS\_GET\_ATTR"/>  <xs:enumeration value="NFS\_SET\_ATTR"/>  <xs:enumeration value="NFS\_LNK"/>  <xs:enumeration value="NFS\_SYM\_LNK"/>  </xs:restriction>  </xs:simpleType>  <xs:element name="FscreenQueryStatus">  <xs:complexType>  <xs:sequence>  <xs:element name="ReqId" type="xs:unsignedLong" nillable="true"/>  <xs:element name="ReqType" type="ReqTypeE"/>  </xs:sequence>  </xs:complexType>  </xs:element>  </xs:schema> |

**Sample File Notification Status Query request:**

|  |
| --- |
| <?xml version="1.0"?> <FscreenQueryStatus><ReqId>3250212</ReqId><ReqType>SMB\_OPEN</ReqType> </FscreenQueryStatus> |

File Notification Status Query Response

Table ) XML Schema for File Notification Status Query Response.

|  |
| --- |
| XML Schema for File Notification Status Query Response |
| <?xml version="1.0"?>  <xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">  <xs:simpleType name="ReqTypeE">  <xs:restriction base="xs:string">  <xs:enumeration value="SMB\_OPEN"/>  <xs:enumeration value="SMB\_CLOSE"/>  <xs:enumeration value="SMB\_CREAT"/>  <xs:enumeration value="SMB\_CREAT\_DIR"/>  <xs:enumeration value="SMB\_DEL"/>  <xs:enumeration value="SMB\_DEL\_DIR"/>  <xs:enumeration value="SMB\_REN"/>  <xs:enumeration value="SMB\_REN\_DIR"/>  <xs:enumeration value="SMB\_GET\_ATTR"/>  <xs:enumeration value="SMB\_SET\_ATTR"/>  <xs:enumeration value="SMB\_RD"/>  <xs:enumeration value="SMB\_WR"/>  <xs:enumeration value="NFS\_LOOKUP"/>  <xs:enumeration value="NFS\_CREAT"/>  <xs:enumeration value="NFS\_CREAT\_DIR"/>  <xs:enumeration value="NFS\_DEL"/>  <xs:enumeration value="NFS\_DEL\_DIR"/>  <xs:enumeration value="NFS\_REN"/>  <xs:enumeration value="NFS\_REN\_DIR"/>  <xs:enumeration value="NFS\_OPEN"/>  <xs:enumeration value="NFS\_CLOSE"/>  <xs:enumeration value="NFS\_RD"/>  <xs:enumeration value="NFS\_WR"/>  <xs:enumeration value="NFS\_GET\_ATTR"/>  <xs:enumeration value="NFS\_SET\_ATTR"/>  <xs:enumeration value="NFS\_LNK"/>  <xs:enumeration value="NFS\_SYM\_LNK"/>  </xs:restriction>  </xs:simpleType>  <xs:element name="FscreenStatusResp">  <xs:complexType>  <xs:sequence>  <xs:element name="ReqId" type="xs:unsignedLong" nillable="true"/>  <xs:element name="ReqType" type="ReqTypeE"/>  <xs:element name="Resp" type="xs:unsignedInt"/>  </xs:sequence>  </xs:complexType>  </xs:element>  </xs:schema> |

**'Resp** : Status Notification response can take following values :

1 : FPolicy server is working on the request.   
2 : FPolicy server lost the request.

**Sample File Notification Status Query response:**

|  |
| --- |
| <?xml version="1.0"?> <FscreenStatusResp><ReqId>3250212</ReqId><ReqType>SMB\_OPEN</ReqType><Resp>1 </Resp></FscreenStatusResp> |

Apply/Remove Back Pressure

Table ) XML Schema for Apply/Remove Back Pressure

|  |
| --- |
| XML Schema for Apply/Remove Back Pressure |
| <?xml version="1.0"?>  <xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">  <xs:element name="BackPressure">  <xs:complexType>  <xs:sequence>  <xs:element name="SessionId" type="xs:string" nillable="true"/>  <xs:element name="Apply" type="xs:unsignedLong" nillable="true"/>  </xs:sequence>  </xs:complexType>  </xs:element>  </xs:schema> |

**Sample Back pressure message:**

|  |
| --- |
| <?xml version="1.0"?> <BackPressure><SessionId>74b09629-d4ae-11e1-aea3-123478563412</SessionId> <Apply>1</Apply></BackPressure>  <?xml version="1.0"?> <BackPressure><SessionId>74b09629-d4ae-11e1-aea3-123478563412</SessionId> <Apply>0</Apply></BackPressure> |

Alerts

Table ) XML Schema for Alerts

|  |
| --- |
| XML schema for Alerts |
| <?xml version="1.0"?>  <xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">  <xs:simpleType name="SeverityE">  <xs:restriction base="xs:string">  <xs:enumeration value="FATAL"/>  <xs:enumeration value="WARNING"/>  </xs:restriction>  </xs:simpleType>  <xs:element name="Alert">  <xs:complexType>  <xs:sequence>  <xs:element name="SessionId" type="xs:string" nillable="true"/>  <xs:element name="Severity" type="SeverityE"/>  <xs:element name="AlertMsg" type="xs:string" nillable="true"/>  </xs:sequence>  </xs:complexType>  </xs:element>  </xs:schema> |

Among above fields, vserver\_id, policy\_name, and session\_id is already describe in preceding section[citation needed]. Details on severity and alert\_message can be found below :

**severity** : This field defines the severity of the message. If severity is 0 it is an alert message, 1 is a fatal error message and If severity is 2 then it is a warning message.

**alert\_message** : This field defines the alert message type. Details on different types of alerts are mentioned in the preceding section.[citation needed]

**Sample Alert message:**

|  |
| --- |
| <?xml version="1.0"?><Alert><SessionId>74b09629-d4ae-11e1-aea3-123478563412</SessionId> <Severity>FATAL</Severity><AlertMsg>FPolicy Handshake failed.</AlertMsg></Alert> |

Volume Notification

Table ) XML Schema for Volume Notification

|  |
| --- |
| XML schema for Volume Notification |
| <?xml version="1.0"?>  <xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">  <xs:simpleType name="VolOpT">  <xs:restriction base="xs:string">  <xs:enumeration value="MOUNT"/>  <xs:enumeration value="UNMOUNT"/>  <xs:enumeration value="MODIFY"/>  </xs:restriction>  </xs:simpleType>  <xs:element name="VolNotf">  <xs:complexType>  <xs:sequence>  <xs:element name="VolMsid" type="xs:unsignedLong" nillable="true"/>  <xs:element name="Action" type="VolOpT" nillable="true"/>  <xs:element name="IsActive" type="xs:boolean" nillable="true"/>  </xs:sequence>  </xs:complexType>  </xs:element>  </xs:schema> |

**'Action'** : Action can be any of the following values   
MOUNT  : Volume was mounted to global namespace.  
UNMOUNT : Volume was unmounted from global namespace.   
MODIFY  : global namespace was modified.

**Sample Volume Notification:**

|  |
| --- |
| <?xml version="1.0"?><VolNotf><VolMsid>2147484674</VolMsid><Action>MOUNT</Action><IsActive>1 </IsActive></VolNotf>  <?xml version="1.0"?><VolNotf><VolMsid>2147484674</VolMsid><Action>UNMOUNT</Action><IsActive>1 </IsActive></VolNotf> |

FPolicy Resiliency Outage message Schema

**This message is supported from protocol version 2.0 onwards.**

Table ) XML schema for Outage message Schema

|  |
| --- |
| XML schema for Outage message Schema |
| <?xml version="1.0"?>  <xs:schema xmlns:xs="<http://www.w3.org/2001/XMLSchema>">      <xs:element name="Outage">           <xs:complexType>               <xs:sequence>                   <xs:element name="FilePath" type="xs:string" nillable="true"/>                   <xs:element name="PolicyName" type=" xs:string "/>                   <xs:element name="Status" type="xs:string" nillable="true"/>               </xs:sequence>           </xs:complexType>      </xs:element>  </xs:schema> |

Status - Status can be “incomplete” or “done”. There can be multiple outage files generated for a single network outage. For each file one such notification is sent with status as “incomplete”. A message with status “done” will be sent when all the outage files for a single network outage are sent.

FilePath - Path of the file storing stored notifications.

**Sample Notification**

<?xml version="1.0"?><Outage><FilePath>**//dest\_volume/sti8200-205-testpolicy-06-30-2016-12\_53\_25-425251.txt</**FilePath><PolicyName>testpolicy</PolicyName><Status>**incomplete**</Status></Outage>

<?xml version="1.0"?><Outage><FilePath>**sti8200205**</FilePath><PolicyName>testpolicy</PolicyName><Status>**Done**</Status></Outage>