43:netAccess(webServer,tcp,80):0 47:networkServiceInfo(webServer,httpd,tcp,80,apache):1 42:RULE 2 (remote exploit of a server program):0 39:RULE 5 (multi-hop access):0

58:RULE 5 (multi-hop access):0

58:RULE 5 (multi-hop access):0

90:RULE 5 (multi-hop access):0

100:RULE 5 (multi-hop access):0

124:RULE 5 (multi-hop access):0

128:RULE 5 (multi-hop access):0 55:RULE 17 (NFS shell):0 113:RULE 5 (multi-hop access):0 82:RULE 5 (multi-hop access):0 78:RULE 5 (multi-hop access):0 49:networkServiceInfo(fileServer,mountd,rpc,100005,root):1 50:vulExists(fileServer,'CVE-2013-2093',mountd,remoteExploit,privEscalation):1 38:netAccess(fileServer,rpc,100005):0 37:RULE 2 (remote exploit of a server program):0 54:canAccessFile(fileServer,root,write,'/export'):1 36:execCode(fileServer,root):0 34:RULE 5 (multi-hop access):0 53:RULE 10 (execCode implies file access):0 52:accessFile(fileServer,write,'/export'):0

65:nfsMounted(n0Inter,'/usr/local/share',fileServer,'/export',read):1

60:networkServiceInfo(n0Inter,httpd,tcp,80,root):1

61:vulExists(n0Inter,'CVE-2013-6648',httpd,remoteExploit,privEscalation):1 32:RULE 2 (remote exploit of a server program):0 51:RULE 4 (Trojan horse installation):0 64:RULE 16 (NFS semantics):0 63:accessFile(n0Inter,write,'/usr/local/share'):0 76:RULE 5 (multi-hop access):0 73:execCode(n1Inter,root):0 72:hacl(n1Inter,n2Inter,tcp,80):1 85:vulExists(n2Inter,'CVE-2013-4303',httpd,remoteExploit,privEscalation):1 70:netAccess(n2Inter,tcp,80):0 84:networkServiceInfo(n2Inter,httpd,tcp,80,root):1 26:execCode(n3Inter,root):0 [553.9, 666.4, 383.6, 271.1] 99:vulExists(n13Inter,'CVE-2013-6362',httpd,remoteExploit,privEscalation):1 = 18:netAccess(n13Inter,tcp,80):0 = 98:networkServiceInfo(n13Inter,httpd,tcp,80,root):1 [743.0, 553.9, 460.2, 271.1, 855.5, 666.4, 572.7, 383.6] 17:RULE 2 (remote exploit of a server program):0 [896.9, 803.2, 614.1, 1198.5, 1009.4, 915.7, 726.6, 1086.0] 16:execCode(n13Inter,root):0 110:hacl(n13Inter,n31Inter,tcp,80):1 [896.9, 803.2, 614.1, 1198.5, 1009.4, 915.7, 726.6, 1086.0] [896.9, 803.2, 614.1, 1198.5, 1009.4, 915.7, 726.6, 1086.0] 109:RULE 5 (multi-hop access):0 14:RULE 5 (multi-hop access):0 [896.9, 803.2, 614.1, 1198.5, 1009.4, 915.7, 726.6, 1086.0] [896.9, 803.2, 614.1, 1198.5, 1009.4, 915.7, 726.6, 1086.0] 12:RULE 2 (remote exploit of a server program):0 [896.9, 803.2, 614.1, 1198.5, 1009.4, 915.7, 726.6, 1086.0] [1378.5, 1189.4, 1095.7, 906.6, 1491.0, 1301.9, 1208.2, 1019.1] 112:hacl(n29Inter,n31Inter,tcp,80):1 [1378.5, 1189.4, 1095.7, 906.6, 1491.0, 1301.9, 1208.2, 1019.1] [1378.5, 1189.4, 1095.7, 906.6, 1491.0, 1301.9, 1208.2, 1019.1] 111:RULE 5 (multi-hop access):0 9:RULE 5 (multi-hop access):0 122:RULE 5 (multi-hop access):0 [1378.5, 1189.4, 1095.7, 906.6, 1491.0, 1301.9, 1208.2, 1019.1] ([1378.5, 1189.4, 1095.7, 906.6, 1491.0, 1301.9, 1208.2, 1019.1]116:vulExists(n31Inter,'CVE-2013-0283',httpd,remoteExploit,privEscalation):1 115:networkServiceInfo(n31Inter,httpd,tcp,80,root):1 [1378.5, 1189.4, 1095.7, 906.6, 1491.0, 1301.9, 1208.2, 1019.1] [896.9, 1378.5, 803.2, 1189.4, 614.1, 1095.7, 906.6, 1198.5, 1009.4, 915.7, 1491.0, 1301.9, 726.6, 1208.2, 1019.1, 1086.0] 107:RULE 2 (remote exploit of a server program):0 120:RULE 2 (remote exploit of a server program):0 [1186.1, 1770.5, 1581.4, 1487.7, 1298.6, 1658.0, 1468.9, 1375.2][1378.5, 1189.4, 1095.7, 906.6, 1491.0, 1301.9, 1208.2, 1019.1] [1440.4, 1251.3, 1318.2, 1129.1, 1610.7, 1035.4, 1421.6, 846.3, 1327.9, 1138.8, 958.8, 1430.7, 1241.6, 1147.9, 1723.2, 1534.1] 105:hacl(n31Inter,n37Inter,tcp,80):1 106:execCode(n31Inter,root):0 [1440.4, 1251.3, 1318.2, 1129.1, 1610.7, 1035.4, 1421.6, 846.3, 1327.9, 1138.8, 958.8, 1430.7, 1241.6, 1147.9, 1723.2, 1534.1] [1186.1, 1770.5, 1581.4, 1487.7, 1298.6, 1658.0, 1468.9, 1375.2] 104:RULE 5 (multi-hop access):0 117:RULE 5 (multi-hop access):0 [1019.1, 906.6, 1035.4, 1421.6, 1298.6, 1301.9, 1430.7, 1440.4, 1186.1, 1189.4, 1318.2, 1581.4, 1327.9, 1208.2, 1723.2, 1468.9, 958.8, 1095.7, 1610.7, 846.3, 1487.7, 1491.0, 1241.6, 1375.2, 1378.5, 1251.3, 1129.1, 1770.5, 1138.8, 1658.0, 1147.9, 1534.1]7:RULE 2 (remote exploit of a server program):0 $\llbracket 1792.1, 1664.9, 1542.7, 2184.1, 1552.4, 2071.6, 1432.7, 1561.5, 1947.7, 1320.2, 1449.0, 1835.2, 1712.2, 1715.5, 1844.3, 1854.0, 1599.7, 1603.0, 1731.8, 1995.0, 1741.5, 1621.8, 2136.8, 1882.5, 1372.4, 1509.3, 2024.3, 1259.9, 1901.3, 1904.6, 1655.2, 1788.8 \rrbracket$ 6:execCode(n37Inter,root):0 5:hacl(n37Inter,n65Inter,tcp,80):1 (1792.1, 1664.9, 1542.7, 2184.1, 1552.4, 2071.6, 1432.7, 1561.5, 1947.7, 1320.2, 1449.0, 1835.2, 1712.2, 1715.5, 1844.3, 1854.0, 1599.7, 1603.0, 1731.8, 1995.0, 1741.5, 1621.8, 2136.8, 1882.5, 1372.4, 1509.3, 2024.3, 1259.9, 1901.3, 1904.6, 1655.2, 1788.8])4:RULE 5 (multi-hop access):0 [1792.1, 1664.9, 1542.7, 2184.1, 1552.4, 2071.6, 1432.7, 1561.5, 1947.7, 1320.2, 1449.0, 1835.2, 1712.2, 1715.5, 1844.3, 1854.0, 1599.7, 1603.0, 1731.8, 1995.0, 1741.5, 1621.8, 2136.8, 1882.5, 1372.4, 1509.3, 2024.3, 1259.9, 1901.3, 1904.6, 1655.2, 1788.8]3:netAccess(n65Inter,tcp,80):0 [1792.1, 1664.9, 1542.7, 2184.1, 1552.4, 2071.6, 1432.7, 1561.5, 1947.7, 1320.2, 1449.0, 1835.2, 1712.2, 1715.5, 1844.3, 1854.0, 1599.7, 1603.0, 1731.8, 1995.0, 1741.5, 1621.8, 2136.8, 1882.5, 1372.4, 1509.3, 2024.3, 1259.9, 1901.3, 1904.6, 1655.2, 1788.8]

45:hacl(internet,webServer,tcp,80):1 46:attackerLocated(internet):1

44:RULE 6 (direct network access):0

Attack cost:

max = 2556.4

min = 1632.2

aver = 2097.55

yar = 53280.8975

2:RULE 2 (remote exploit of a server program):0

134:networkServiceInfo(n65Inter,httpd,tcp,80,root):1 | 135:vulExists(n65Inter,'CVE-2013-4035',httpd,remoteExploit,privEscalation):1

 $\llbracket 1924.7, 2443.9, 1805.0, 1933.8, 2320.0, 1692.5, 1821.3, 2207.5, 2084.5, 2087.8, 2216.6, 2226.3, 1972.0, 1975.3, 2104.1, 2367.3, 2113.8, 1994.1, 2509.1, 2254.8, 1744.7, 1881.6, 2396.6, 1632.2, 2273.6, 2276.9, 2027.5, 2161.1, 2164.4, 2037.2, 1915.0, 2556.4 \end{bmatrix}$