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 90:RULE 5 (multi-hop access):0 90: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-2013-4857',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

[68.6] 35:hacl(fileServer,n0Inter,tcp,80):1 34:RULE 5 (multi-hop access):0 53:RULE 10 (execCode implies file access):0 65:nfsMounted(n0Inter,'/usr/local/share',fileServer,'/export',read):1 60:networkServiceInfo(n0Inter,httpd,tcp,80,root):1 61:vulExists(n0Inter,'CVE-2013-0180',httpd,remoteExploit,privEscalation):1 52:accessFile(fileServer,write,'/export'):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 26:execCode(n3Inter,root):0 99:vulExists(n13Inter,'CVE-2013-6878',httpd,remoteExploit,privEscalation):1 18:netAccess(n13Inter,tcp,80):0 98:networkServiceInfo(n13Inter,httpd,tcp,80,root):1 [512.8, 899.1, 518.2, 296.9, 816.6, 595.3, 214.4, 600.7] 17:RULE 2 (remote exploit of a server program):0 [1030.1, 808.8, 427.9, 814.2, 726.3, 1112.6, 731.7, 510.4] 16:execCode(n13Inter,root):0 110:hacl(n13Inter,n31Inter,tcp,80):1 [1030.1, 808.8, 427.9, 814.2, 726.3, 1112.6, 731.7, 510.4] [1030.1, 808.8, 427.9, 814.2, 726.3, 1112.6, 731.7, 510.4] 109:RULE 5 (multi-hop access):0 14:RULE 5 (multi-hop access):0 [1030.1, 808.8, 427.9, 814.2, 726.3, 1112.6, 731.7, 510.4] 103:vulExists(n29Inter,'CVE-2013-1607',httpd,remoteExploit,privEscalation):1 = 13:netAccess(n29Inter,tcp,80):0 = 102:networkServiceInfo(n29Inter,httpd,tcp,80,root):1 [1030.1, 808.8, 427.9, 814.2, 726.3, 1112.6, 731.7, 510.4] 12:RULE 2 (remote exploit of a server program):0 [1030.1, 808.8, 427.9, 814.2, 726.3, 1112.6, 731.7, 510.4] [1412.3, 1191.0, 810.1, 1196.4, 1108.5, 1494.8, 1113.9, 892.6] 112:hacl(n29Inter,n31Inter,tcp,80):1 [1412.3, 1191.0, 810.1, 1196.4, 1108.5, 1494.8, 1113.9, 892.6] [1412.3, 1191.0, 810.1, 1196.4, 1108.5, 1494.8, 1113.9, 892.6] 111:RULE 5 (multi-hop access):0 9:RULE 5 (multi-hop access):0 122:RULE 5 (multi-hop access):0 [1412.3, 1191.0, 810.1, 1196.4, 1108.5, 1494.8, 1113.9, 892.6] (1412.3, 1191.0, 810.1, 1196.4, 1108.5, 1494.8, 1113.9, 892.6)116:vulExists(n31Inter,'CVE-2013-4101',httpd,remoteExploit,privEscalation):1 127:vulExists(n36Inter,'CVE-2013-3023',httpd,remoteExploit,privEscalation):1 = 121:netAccess(n36Inter,tcp,80):0 = 126:networkServiceInfo(n36Inter,httpd,tcp,80,root):1 [1412.3, 1191.0, 810.1, 1196.4, 1108.5, 1494.8, 1113.9, 892.6] 2.3, 1030.1, 1191.0, 808.8, 810.1, 427.9, 1196.4, 814.2, 1108.5, 726.3, 1494.8, 1112.6, 1113.9, 731.7, 892.6, 510.4] 107:RULE 2 (remote exploit of a server program):0 120:RULE 2 (remote exploit of a server program):0 [1120.5, 738.3, 1640.2, 1258.0, 1418.9, 1036.7, 1038.0, 655.8, 1424.3, 1042.1, 1722.7, 1336.4, 954.2, 1340.5, 1341.8, 959.6] [1760.6, 1539.3, 1158.4, 1544.7, 1456.8, 1843.1, 1462.2, 1240.9] [1412.3, 1191.0, 810.1, 1196.4, 1108.5, 1494.8, 1113.9, 892.6] 105:hacl(n31Inter,n37Inter,tcp,80):1 106:execCode(n31Inter,root):0 118:hacl(n36Inter,n37Inter,tcp,80):1 = 119:execCode(n36Inter,root):0 [1120.5, 738.3, 1640.2, 1258.0, 1418.9, 1036.7, 1038.0, 655.8, 1424.3, 1042.1, 1722.7, 1336.4, 954.2, 1340.5, 1341.8, 959.6] [1760.6, 1539.3, 1158.4, 1544.7, 1456.8, 1843.1, 1462.2, 1240.9] 104:RULE 5 (multi-hop access):0 117:RULE 5 (multi-hop access):0 [1539.3, 1412.3, 1158.4, 1544.7, 1418.9, 1036.7, 1038.0, 655.8, 1424.3, 1042.1, 1191.0, 810.1, 1196.4, 1456.8, 1843.1, 1462.2, 1336.4, 954.2, 1722.7, 1340.5, 1341.8, 959.6, 1108.5, 1494.8, 1240.9, 1113.9, 1120.5, 1760.6, 738.3, 1640.2, 1258.0, 892.6]7:RULE 2 (remote exploit of a server program):0  $\llbracket 1025.0, 1926.9, 1544.7, 1179.3, 1826.0, 1699.0, 1445.1, 1831.4, 1705.6, 1323.4, 1324.7, 942.5, 1711.0, 1328.8, 2047.3, 1477.7, 1096.8, 1483.1, 1743.5, 2129.8, 1748.9, 1623.1, 1240.9, 2009.4, 1627.2, 1628.5, 1246.3, 1395.2, 1781.5, 1527.6, 1400.6, 1407.2 \rrbracket$ 6:execCode(n37Inter,root):0 5:hacl(n37Inter,n65Inter,tcp,80):1 (1025.0, 1926.9, 1544.7, 1179.3, 1826.0, 1699.0, 1445.1, 1831.4, 1705.6, 1323.4, 1324.7, 942.5, 1711.0, 1328.8, 2047.3, 1477.7, 1096.8, 1483.1, 1743.5, 2129.8, 1748.9, 1623.1, 1240.9, 2009.4, 1627.2, 1628.5, 1246.3, 1395.2, 1781.5, 1527.6, 1400.6, 1407.2]4:RULE 5 (multi-hop access):0 3:netAccess(n65Inter,tcp,80):0

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

44:RULE 6 (direct network access):0

1:execCode(n65Inter,root):0

 $\llbracket 1926.5, 1545.6, 1931.9, 2192.3, 2578.6, 2197.7, 2071.9, 1689.7, 2458.2, 2076.0, 2077.3, 1695.1, 1844.0, 2230.3, 1976.4, 1849.4, 2496.1, 1473.8, 1856.0, 2375.7, 1993.5, 1628.1, 2274.8, 2147.8, 1893.9, 2280.2, 2154.4, 1772.2, 1773.5, 1391.3, 2159.8, 1777.6 \rrbracket$