

## Report of Vulnerabilities in Benchmark

Tipos de Vulnerabilidades	Descrição
INIT	Initialization
CAST	Cast
PVAL	Parameter Validation
BUFFER	Buffer Overflow or Underflow
FORMAT	Format String
BOUND	Array out of bound
INTEGER	Integer Overflow or Underflow
ZERO	Division by Zero
LOOP	Infinite Cycle
RET	Return Values
MEM	Memory Management
FILA	File Access
LEAST	Least Privileges
RANDOM	Weak Number by Generation

**Linhas a preto** -- são vulnerabilidades

**Linhas a vermelho** -- são falsos alertas

Vulnerabilidades	Linha da vul. no teste	Crystal	Deputy	Flawfinder	ITS4	MOPS	Pscan	RATS	Sparse	UNO
INIT	88		X							
INIT	90									X
<b>FORMAT</b>	<b>91</b>				X					
INIT	97		X							
<b>FORMAT</b>	<b>99</b>				X					
INIT	99									X
MEM	100	X								
<b>FORMAT</b>	<b>102</b>				X					
INIT	109		X							

CAST	112									
INIT	112									X
FORMAT	113				X					
FORMAT	115				X					
LOOP	117									
FORMAT	118				X					
FORMAT	121					X				
PVAL	121		X							
MEM	122	X								
BUFFER	123		X							
FORMAT	124		X	X	X		X	X		
INIT	127		X							
INIT	128		X							
BUFFER	129		X							
INIT	129									X
PVAL	132		X							
FORMAT	133		X	X	X		X	X		
INIT	137									
MEM	137							X		
BUFFER	138		X							
CAST	153									
CAST	170								X	
PVAL	174		X							
CAST	175									
FORMAT	177				X					
MEM	198							X		
MEM	199							X		
MEM	200							X		
MEM	201							X		
BUFFER	204							X		
RET	204									
BUFFER	207		X	X	X			X		
BUFFER	208		X	X				X		
BUFFER	209		X	X	X		X	X		
BUFFER	210		X	X	X		X	X		
FORMAT	213			X	X			X		



BUFFER	269		X					X		
FORMAT	271		X							
BUFFER	283		X					X		
BUFFER	284		X					X		
INTEGER	285									
INTEGER	286									
MEM	295							X		
BUFFER	296							X		
RET	296									
BUFFER	300		X							
CAST	300		X							
BUFFER	301							X		
BUFFER	323		X					X		
BUFFER	324		X					X		
ZERO	325									
BUFFER	330		X					X		
BUFFER	331		X					X		
FORMAT	343		X	X	X		X	X		
FORMAT	344		X	X	X		X	X		
MEM	348							X		
BUFFER	349							X		
FORMAT	350		X	X	X		X	X		
FORMAT	351				X					
FORMAT	353				X					
FORMAT	359				X					
MEM	364							X		
BUFFER	365			X	X			X		
INIT	365									X
LEAST	366			X	X			X		
BUFFER	367			X						
LEAST	367					X				
LEAST	368			X	X			X		
FORMAT	369		X	X	X		X	X		
FORMAT	370				X					
FORMAT	371				X					
FORMAT	372				X					



MEM	443							X		
BOUND	446									
BUFFER	447									
MEM	451							X		
BOUND	452									X
MEM	456							X		
BUFFER	459			X	X			X		
RET	459									X
BUFFER	462									
BOUND	474								X	X
FORMAT	475				X					
BOUND	476								X	X
FORMAT	477				X					
FORMAT	479				X					
LOOP	485									
BUFFER	487									
BOUND	498								X	X
BOUND	499								X	X
BOUND	500									X
BOUND	501									
RANDOM	501				X					
BOUND	506									X
BOUND	507									X
BOUND	508									X
BUFFER	509									
RANDOM	509				X					
BOUND	513									
BOUND	514									
BOUND	515									
BOUND	516									
RANDOM	516				X					
BUFFER	521									
BUFFER	522									
BUFFER	523									
BUFFER	524									
RANDOM	524				X					



INTEGER	656									
INTEGER	657									
INTEGER	658									
INTEGER	659									
INTEGER	661									
INTEGER	662									
INTEGER	663									
INTEGER	664									
INTEGER	677									
INTEGER	678									
INTEGER	679									
INTEGER	680									
INTEGER	682									
INTEGER	683									
INTEGER	684									
INTEGER	685									
INTEGER	706									
INTEGER	707									
INTEGER	708									
INTEGER	709									
INTEGER	716									
INTEGER	717									
INTEGER	718									
INTEGER	719									
MEM	726							X		
LOOP	729									
BOUND	730									X
BOUND	731									X
MEM	737							X		
LOOP	740									
BOUND	741									X
BOUND	742									X
MEM	750	X								
LOOP	753									
BUFFER	754									
BOUND	775			X				X		







MEM	1085									
MEM	1086									
MEM	1093	X								
MEM	1105	X								
MEM	1106	X								
MEM	1107	X								
MEM	1114	X								
MEM	1115	X								
MEM	1138							X		
MEM	1139							X		
BUFFER	1140							X		
RET	1140									
BUFFER	1141			X	X			X		
MEM	1145							X		
MEM	1146							X		
BUFFER	1147							X		
RET	1147									
BUFFER	1148			X				X		
MEM	1152							X		
BUFFER	1153		X	X	X			X		
MEM	1157							X		
BUFFER	1158							X		
RET	1158									
FILA	1185			X				X		
BUFFER	1186			X	X			X		
RET	1186									X
FILA	1197			X				X		
BUFFER	1199			X	X			X		
RET	1199									X
FILA	1205					X				
PVAL	1205		X							
FILA	1207		X	X	X			X		
FILA	1208		X	X	X			X		
FILA	1214		X	X	X	X		X		
FILA	1225				X			X		
FILA	1226			X		X				

FILA	1227		X	X		X				
FILA	1242		X	X				X		
FILA	1243				X					
FILA	1244				X					
BUFFER	1246			X	X			X		
RET	1246									X
FILA	1250				X					
MEM	1260							X		
FILA	1263		X	X				X		
FILA	1265			X	X	X				
FILA	1268				X					
BUFFER	1270			X	X			X		
RET	1270									X
FILA	1289		X	X				X		
FILA	1290			X				X		
BUFFER	1292			X	X			X		
RET	1292									X
FILA	1304		X	X				X		
FILA	1305				X					
BUFFER	1307			X	X			X		
RET	1307									X
FILA	1319			X	X	X		X		
FILA	1320			X		X				
RET	1320									X
FILA	1333			X		X				
FILA	1334			X	X			X		
RET	1334									X
INIT	1349									
FILA	1350			X	X			X		
BUFFER	1353		X	X	X			X		
INIT	1353									X
FILA	1354			X	X					
INIT	1360									
FILA	1361			X				X		
FILA	1362				X	X				
BUFFER	1365		X	X	X			X		

INIT	1365									X
FILA	1366			X	X			X		
FILA	1375			X	X			X		
FILA	1376			X	X	X				
PVAL	1383		X							
FILA	1385			X	X			X		
FORMAT	1386				X					
FILA	1396			X	X					
FILA	1405			X	X			X		
FILA	1406			X	X					
RET	1425									X
LEAST	1426									
FORMAT	1428				X					
LEAST	1434		X	X	X			X		
RET	1440									X
FORMAT	1441				X					
LEAST	1444		X	X	X			X		
PVAL	1447		X							
FORMAT	1449				X					
LEAST	1450			X	X			X		
LEAST	1456			X	X			X		
LEAST	1462			X	X			X		
PVAL	1465		X							
LEAST	1468			X	X			X		
LEAST	1472			X	X			X		
LEAST	1478			X	X			X		
PVAL	1488		X							
LEAST	1490							X		
LEAST	1492			X	X			X		
PVAL	1498		X							
LEAST	1501							X		
LEAST	1503			X	X			X		
PVAL	1509		X							
LEAST	1514							X		
LEAST	1516			X	X			X		
RANDOM	1537				X					

FORMAT	1538				X					
INIT	1540								X	
RANDOM	1540			X	X			X		
RANDOM	1541				X					
FORMAT	1542				X					
INIT	1544								X	
RANDOM	1544			X				X		
RANDOM	1545			X	X			X		
FORMAT	1546				X					
RANDOM	1548			X				X		
RANDOM	1549			X	X			X		
FORMAT	1550				X					
PVAL	1556		X							
FORMAT	1559				X					
FORMAT	1560				X					
FORMAT	1561				X					
FORMAT	1562				X					
FORMAT	1563				X					
FORMAT	1566				X					
FORMAT	1567				X					
FORMAT	1568				X					
FORMAT	1569				X					
FORMAT	1572				X					
FORMAT	1573				X					
FORMAT	1574				X					
FORMAT	1575				X					
FORMAT	1576				X					
FORMAT	1577				X					
FORMAT	1578				X					
FORMAT	1579				X					
FORMAT	1580				X					
FORMAT	1581				X					
FORMAT	1582				X					
FORMAT	1583				X					
FORMAT	1584				X					
FORMAT	1585				X					

FORMAT	1586				X					
FORMAT	1587				X					
FORMAT	1588				X					
FORMAT	1589				X					
FORMAT	1590				X					
FORMAT	1591				X					
FORMAT	1592				X					
FORMAT	1593				X					
FORMAT	1594				X					
FORMAT	1595				X					
FORMAT	1596				X					
FORMAT	1597				X					
FORMAT	1598				X					
FORMAT	1599				X					
FORMAT	1600				X					
FORMAT	1601				X					
FORMAT	1603				X					
FORMAT	1604				X					
FORMAT	1605				X					
FORMAT	1607				X					
FORMAT	1608				X					
FORMAT	1609				X					
FORMAT	1612				X					
FORMAT	1613				X					
FORMAT	1614				X					
FORMAT	1617				X					
FORMAT	1618				X					
FORMAT	1619				X					
FORMAT	1620				X					
FORMAT	1621				X					
FORMAT	1622				X					
FORMAT	1623				X					
FORMAT	1624				X					
FORMAT	1625				X					
FORMAT	1626				X					
FORMAT	1627				X					

FORMAT	1630				X					
FORMAT	1631				X					
FORMAT	1632				X					
FORMAT	1633				X					
FORMAT	1636				X					
FORMAT	1637				X					
FORMAT	1638				X					
FORMAT	1639				X					
FORMAT	1640				X					
FORMAT	1641				X					
FORMAT	1642				X					
FORMAT	1643				X					
FORMAT	1644				X					
FORMAT	1645				X					
FORMAT	1646				X					
FORMAT	1647				X					
FORMAT	1648				X					
FORMAT	1649				X					
FORMAT	1650				X					
FORMAT	1651				X					
FORMAT	1654				X					
FORMAT	1655				X					
FORMAT	1656				X					
FORMAT	1657				X					
FORMAT	1658				X					
FORMAT	1659				X					
FORMAT	1660				X					
FORMAT	1661				X					
FORMAT	1664				X					