

# EXHIBIT D

# APPENDIX F

## US Patent No. 8,225,408

## Method and System for Adaptive Rule-based Content Scanners

## Claim 1

1a. A computer processor-based multi-lingual method for scanning incoming program code, comprising:

1b. receiving, by a computer, an incoming stream of program code;

1c. determining, by the computer, any specific one of a plurality of programming languages in which the incoming stream is written;

1d. instantiating, by the computer, a scanner for the specific programming language, in response to said determining, the scanner comprising parser rules and analyzer rules for the specific programming language, wherein the parser rules define certain patterns in terms of tokens, tokens being lexical constructs for the specific programming language, and wherein the analyzer rules identify certain combinations of tokens and patterns as being indicators of potential exploits, exploits being portions of program code that are malicious;

1e. identifying, by the computer, individual tokens within the incoming stream;

1f. dynamically building, by the computer while said receiving receives the incoming stream, a parse tree whose nodes represent tokens and patterns in accordance with the parser rules;

1g. dynamically detecting, by the computer while said dynamically building builds the parse tree, combinations of nodes in the parse tree which are indicators of potential exploits, based on the analyzer rules; and

1h. indicating, by the computer, the presence of potential exploits within the incoming stream, based on said dynamically detecting.

The Qualys Accused Products perform a multi-lingual method for scanning incoming program code that a user attempts to download from the Internet. The program code is diverted to the Accused Products for analysis if the program code appears suspicious or is of a certain file type. Each Accused Product performs static, dynamic and behavioral analysis of received downloaded program code to identify exploits, and uses internal databases (as described below) to parse and analyze program code to detect exploits indicating that the program code is suspicious or malicious.

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1h. indicating, by the computer, the presence of potential exploits within the incoming stream, based on said dynamically detecting.

**1b. Contention 1 – The Accused Products, each resident on the Qualys Cloud, receive an incoming stream of computer code**

Each of the Accused Products, executed on a node that is part of the Qualys Cloud computing environment, includes a receiver component on a node that receives content based on a client device requesting the content from a source computer, such as the Internet. As shown below, the content is received by each Accused Product, (via the receiver) when a particular client device requests content provided by a source computer.



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1e. identifying, by the computer, individual tokens within the incoming stream;

1f. dynamically building, by the computer while said receiving receives the incoming stream, a parse tree whose nodes represent tokens and patterns in accordance with the parser rules;

1g. dynamically detecting, by the computer while said dynamically building builds the parse tree, combinations of nodes in the parse tree which are indicators of potential exploits, based on the analyzer rules; and

1h. indicating, by the computer, the presence of potential exploits within the incoming stream, based on said dynamically detecting.

### 1b. Contention 2 – The Accused Products, each resident on Appliance Scanners, receive an incoming stream of computer code

Each of the Accused Products executed on Appliance Scanners, dispersed over a computer network, includes a receiver component that receives content based on a client device requesting the content from a source computer, such as the Internet. As shown below, the content is received by each Accused Product (via the receiver of the Appliance Scanner) when a particular client device requests content provided by a source computer.



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