

**SISTEM PENDETEKSI SERANGAN
PADA JARINGAN KOMPUTER MENGGUNAKAN SNORT
BERBASIS SMS GATEWAY
(STUDI KASUS di TAMAN PINTAR YOGYAKARTA)**

Untuk Memenuhi Sebagian Syarat Memperoleh Gelar Sarjana
Strata Satu



SKRIPSI

Disusun oleh:

KHAIRUL ANAM

NIM. 05650023

**PROGRAM STUDI TEKNIK INFORMATIKA
FAKULTAS SAINS DAN TEKNOLOGI
UNIVERSITAS ISLAM NEGERI SUNAN KALIJAGA
YOGYAKARTA**

2011



Universitas Islam Negeri Sunan Kalijaga

FM-UINSK-BM-05-07/R0

PENGESAHAN SKRIPSI/TUGAS AKHIR

Nomor : UIN.02/D.ST/PP.01.1/1198/2011

Skripsi/Tugas Akhir dengan judul : Sistem Pendeteksi Serangan Pada Jaringan Komputer Menggunakan Snort Berbasis SMS Gateway (Studi Kasus di Taman Pintar Yogyakarta)

Yang dipersiapkan dan disusun oleh :
Nama : Khairul Anam
NIM : 05650023
Telah dimunaqasyahkan pada : 27 Juni 2011
Nilai Munaqasyah : A -

Dan dinyatakan telah diterima oleh Fakultas Sains dan Teknologi UIN Sunan Kalijaga

TIM MUNAQASYAH :

Ketua Sidang

Landung Suwardana, M.Kom
NIY.0527027001

Penguji I

Sumarsono, S.T, M.Kom
NIP.19710209 200501 1 003

Penguji II

Bambang Sugiantoro, M.T, CompTIA
NIP. 19751024 200912 1 002

Yogyakarta, 1 Juli 2011

UIN Sunan Kalijaga

Fakultas Sains dan Teknologi

Dekan



Prof. Susanto Akh. Mirhaji, M.A, Ph.D
NIP. 19580919 198603 1 002



SURAT PERSETUJUAN SKRIPSI/TUGAS AKHIR

Hal : Persetujuan Skripsi/Tugas Akhir

Lamp :

Kepada

Yth. Dekan Fakultas Sains dan Teknologi

UIN Sunan Kalijaga Yogyakarta

di Yogyakarta

Assalamu'alaikum wr. wb.

Setelah membaca, meneliti, memberikan petunjuk dan mengoreksi serta mengadakan perbaikan seperlunya, maka kami selaku pembimbing berpendapat bahwa skripsi Saudara:

Nama : Khairul Anam

NIM : 05650023

Judul Skripsi : ***Sistem Pendeteksi Serangan Pada Jaringan Komputer Menggunakan Snort Berbasis SMS Gateway (Studi Kasus di Taman Pintar Yogyakarta)***

sudah dapat diajukan kembali kepada Program Studi Teknik Informatika. Fakultas Sains dan Teknologi UIN Sunan Kalijaga Yogyakarta sebagai salah satu syarat untuk memperoleh gelar Sarjana Strata Satu dalam Teknik Informatika.

Dengan ini kami berharap agar skripsi/tugas akhir Saudara tersebut di atas dapat segera dimunaqsyahkan. Atas perhatiannya kami ucapkan terima kasih.

Yogyakarta, 18 Juni 2011

Pembimbing I

Landung Landung Sudarmana, ST., M.Kom

NIP.

PERNYATAAN KEASLIAN SKRIPSI

Yang bertanda tangan dibawah ini

Nama : Khairul Anam

NIM : 05650023

Program Studi : Teknik Informatika

Fakultas : Sains dan Teknologi UIN Sunan Kalijaga Yogyakarta

Menyatakan bahwa skripsi dengan judul "**SITEM PENDETEKSI SERANGAN PADA JARINGAN KOMPUTER MENGGUNAKAN SNORT BERBASIS SMS GATEWAY (STUDI KASUS DI TAMAN PINTAR YOGYAKARTA)**" tidak pernah terdapat karya yang diajukan untuk memperoleh gelar kesarjanaan di suatu Perguruan Tinggi, dan berdasarkan penelusuran saya tidak terdapat karya atau dokumentasi yang pernah ditulis dan diterbitkan orang lain, kecuali yang secara tertulis diacu dalam naskah ini dan disebutkan didalam daftar pustaka

Yogyakarta, Juni 2011

METERAI
TEMPEL
KEMENTERIAN KEHAKIMATAN
REPUBLIK INDONESIA
49914AAF402659202
6000
DJP
Khairul Anam
NIM. 05650023

MOTTO

Tak ada kesuksesan yang didapat dengan mudah

*Melakukan hal-hal yang tidak biasa
untuk mendapat sesuatu yang luar biasa*

*Investasikan waktu masa depan dengan mengerjakan hal-hal positif,
tidak ada kata terlambat untuk memulai hal baru.*

*Keberhasilan bukan ditentukan oleh besarnya otak seseorang, melainkan
oleh besarnya cara berfikir seseorang.*

HALAMAN PERSEMBAHAN

Skripsi ini kupersembahkan sepenuhnya untuk:

Ibu dan Bapakku tercinta

Adikku tersayang

Teman-teman seperjuangan di kota pelajar

Almamater tercinta

Program Studi Teknik Informatika Fakultas Sains dan teknologi

UIN Sunan Kalijaga Yogyakarta

Pondok Pesantren Darul Ulum Banyuwangi Madura

KATA PENGANTAR

Segala puji bagi Allah SWT yang telah memberikan pertolongan dan ilmunya kepada penulis sehingga dapat terselesaikan penelitian ini. Penelitian yang berjudul “Sistem Pendeteksi Serangan Pada Jaringan Komputer Menggunakan Snort Berbasis SMS Gateway” yang mengambil contoh studi kasus di Taman Pintar Yogyakarta. Selanjutnya penulis mengucapkan terima kasih kepada :

1. Prof. Drs. H. Akh Minhaji, M.A, Ph.D, selaku Dekan Fakultas Sains & Teknologi UIN Sunan Kalijaga.
2. Bapak Agus Mulyanto, M.Kom, sebagai kepala program studi teknik informatika UIN Sunan Kalijaga.
3. Landung Sudarmana, ST., M.Kom, sebagai Dosen Pembimbing I yang telah banyak membantu dalam penyusunan skripsi ini.
4. Bapak M. Didik R. Wahyudi, ST, MT, sebagai Dosen Pembimbing II yang membantu penulis dalam penelitian dan dengan kesabarannya telah membimbing, memberikan koreksi, masukan kepada penulis selama penyusunan skripsi ini.
5. Para Dosen Program Studi Teknik Informatika yang telah memberi bekal ilmu pengetahuan kepada penulis, semoga ilmunya menjadi amal sholeh yang berkesinambungan di dunia hingga akhirat.
6. Mas Riswinarno, Ridwan, Mas Ganang, Suhadi dan teman-teman Taman Pintar yang banyak membantu di memberikan bantuan fasilitas peralatan dan membantu di lapangan.

7. Kedua orang tuaku Buhasan dan Hosniyah yang telah rela mecucurkan keringat hanya untuk keberlangsungan masa studi ananda, serta adik-adikku tercinta Muhammad Iksan, Zainal Arifin, Abdurrahman dan keluarga besar yang selalu memberikan motivasi doa dan nasehat untuk senantiasa bersyukur atas semua nikmat yang diberikan Allah SWT.
8. Aji Kisworomukti, Ganjar Alfian, S.Kom, Sepran “indo-code” terima kasih banyak atas bantuan dan *sharing* ilmunya dalam penyelesaian dan persiapan skripsi ini.
9. Nurul Hidayati (terima kasih atas Motivasinya) M. Iqball Jalaluddin, Afriz, Novita Praci Putri, Ardhi 'kasdu', Nurul Bahiyah, serta teman-teman program Studi Teknik Informatika yang tidak bisa di tulis satu persatu khususnya angkatan 2005 yang telah banyak memberi dukungan.
10. Untuk Meli Amiati, terima kasih atas dukungan *support* dan motivasinya selama ini.
11. Teman-teman Kotrakan Forum Komunikasi Mahasiswa Santri Banyuwang (FKMSB) Tanzil “Geng”, Selamat “ slem” dll, rekan-rekan laboratorium Teknik Informatika, Kelompok Studi Linux UIN Sunan Kalijaga Yogyakarta, Infinity IT-Club, Suka-Press, Suka-News, LPKM Introspektif, Komunitas Ubuntu Indonesia Sub Loco Jogjakarta, Komunitas Plurker Jogjakarta dan teman-teman yang lain yang tidak bisa penulis tulis satu persatu terima kasih telah membantu dan menyemangati agar skripsi ini selesai.

12. Terima kasih Pinky yang telah setia menemani menghadirkan karya-karya dan membantu bertahan hidup di kota pelajar ini.

Penulis menyadari masih banyak kekurangan dan kelemahan dalam penelitian ini. Oleh karena itu demi perkembangan penelitian selanjutnya penulis sangat mengaharap kritik dan saran dari pembaca. Akhirnya semoga penelitian ini bermanfaat bagi pembaca.

Yogyakarta, Juni 2011

Penulis

DAFTAR ISI

HALAMAN JUDUL	i
HALAMAN PENGESAHAN	ii
HALAMAN PERSETUJUAN SKRIPSI.....	iii
PERNYATAAN KEASLIAN SKRIPSI.....	v
MOTTO.....	vi
HALAMAN PERSEMBAHAN	vii
KATA PENGANTAR	viii
DAFTAR ISI	xi
DAFTAR TABEL	xiv
DAFTAR GAMBAR	xv
DAFTAR LAMPIRAN.....	xvii
ABSTRAK	xviii
ABSTRAC	xix
BAB I PENDAHULUAN	
1.1 Latar Belakang.....	1
1.2 Rumusan Masalah.....	5
1.3 Batasan Masalah	5
1.4 Tujuan Penelitian	6
1.5 Manfaat Penelitian	6
1.6 Keaslian Penelitian.....	8

BAB II TINJAUAN PUSTAKA DAN LANDASAN TEORI

2.1 Tinjauan Pustaka.....	9
2.2 Landasan Teori	10
2.2.1 Intrusion Detection System.....	12
2.2.1.1 Macam-Macam IDS.....	13
2.2.1.2 Penempatan IDS.....	15
2.2.2 Snort.....	18
2.2.3 SMS Gateway.....	24
2.2.4 Gammu.....	27
2.2.5 AcidBase	28
2.2.6 MySQL	28
2.2.7 PHP Versi 5.....	31
2.2.8 Network Cloud/Cloud Computing	33

BAB III METODE PENELITIAN

3.1 Metode Penelitian	37
3.2 Bahan dan Alat Penelitian	38
3.2.1 Pendekatan Model Dari Sisi Hardware	38
3.2.2 Pendekatan Model Dari Sisi Software.....	39
3.3 Metode Pengumpulan Data	40
3.3.1 Metode Studi Pustaka	40
3.3.2 Metode Interview	40
3.3.3 Metode Eksperimen.....	41
3.4 Metode Analisis Data.....	41

BAB IV PEMBAHASAN DAN HASIL PENELITIAN

4.1 Pembahasan	42
4.1.1 Diagram Alir Penelitian.....	42
4.1.2 Detail Diagram Alir Perancangan Mesin Snort	43
4.1.3 Detail Diagram Alir Perancangan SMS.....	44
4.1.4 Cara Kerja Sistem.....	44
4.1.4.1 Cara Kerja Mesin Snort.....	45
4.1.4.2 Cara Kerja AcidBase.....	49
4.1.4.3 Cara Kerja Gammu SMS Gateway.....	50
4.1.5 Arsitektur Dan Desain Keamanan Jaringan Tampin.....	52
4.2 Hasil Penelitian.....	53
4.2.1 Gambaran Umum Hasil Penelitian.....	53
4.2.2 Hasil Mesin Snort.....	54
4.2.3 Hasil Analisis Acidbase.....	63
4.2.4 Hasil SMS Gateway Snort.....	65
4.3 Pengujian Penelitian.....	70
4.3.1 Pengujian Black Box Test.....	71

BAB V KESIMPULAN DAN SARAN

5.1 Kesimpulan	73
5.2 Saran	74

DAFTAR PUSTAKA.....	75
----------------------------	-----------

LAMPIRAN.....	77
----------------------	-----------

DAFTAR TABEL

Tabel 2.1 Tabel Fungsi layer OSI.....	12
Tabel 4.1 Daftar Responden <i>Black Box Test</i>	65
Tabel 4.2 Hasil Uji Coba <i>Black Box Test</i>	67

DAFTAR GAMBAR

Gambar 1.1 Arsitektur Jaringan Taman Pintar.....	3
Gambar 1.2 Konfigurasi IP Address Jaringan Taman Pintar.....	4
Gambar 2.1 penempatan IDS di belakang firewall atau router	15
Gambar 2.2 penempatan IDS berfungsi sebagai NIDS	15
Gambar 2.3 penempatan IDS berfungsi sebagai NIDS/HIDS	16
Gambar 2.4 IDS berfungsi sebagai HIDS melindungi sebuah server.....	17
Gambar 2.5 proses komponen SNORT.....	19
Gambar 2.6 Arsitektur PHP.....	31
Gambar 2.6 Ilustrasi Cloud Computing	35
Gambar 4.1 Diagram Alir Penelitian	39
Gambar 4.2 Diagram Alir Proses Pembangunan Mesin Snort dan AcidBase..	40
Gambar 4.3 Proses Gammu SMS Integrasi dengan Mesin Snort.....	41
Gambar 4.4 Gambaran Umum cara kerja Snort	42
Gambar 4.5 Mesin Sensor Snort dengan Centralisasi Database.....	43
Gambar 4.6 Penempatan Mesin Sensor Snort TamPin.....	44
Gambar 4.7 Konfigurasi HTTPInspect	44
Gambar 4.8 Path rule plugin snort.....	45
Gambar 4.9 Output alert dan log file	45
Gambar 4.10 Diagram Alir cara kerja AcidBase.....	46
Gambar 4.11 Cara Kerja Sms Gateway	47
Gambar 4.12 Diagram Alir Cara Kerja Sms Gateway Snort	48

Gambar 4.13 Desain Keamanan Jaringan Taman Pintar	49
Gambar 4.14 Gambaran Umum hasil alur kerja sistem.....	50
Gambar 4.15 IP Address Client Berbasis DHCP	52
Gambar 4.16 Halaman Utama AcidBase	58
Gambar 4.17 Penelusuran alert lebih detail	59
Gambar 4.18 Hasil Identifikasi modem	52
Gambar 4.19 Hasil Alert SMS Snort	64

DAFTAR LAMPIRAN

LAMPIRAN A

KODE SUMBER (SOURCE CODE) MESIN SNORT	77
Lampiran Source Code snort.conf	77
Lampiran Source Code sqlinjection.rule.....	90
Lampiran Source Code dos.rule	91
Lampiran Source Code interfaces.....	92

LAMPIRAN B

KODE SUMBAR (SOURCE CODE) ACIDBASE.....	93
Lampiran Source Code base_conf.php	93
Lampiran Source Code base_user.php.....	100

LAMPIRAN C

KODE SUMBER (SOURCE CODE) SMS GATEWAY	102
Lampiran Source Code smsalert.php	102
Lampiran Source Code smsalertd.sh	104
Lampiran Source Code gammurc	104

LAMPIRAN D

HASIL PENGUJIAN	106
Lampiran Hasil Tampilan AcidBase.....	106
Lampiran Hasil Snort SMS	107
Lampiran Form Kuisioner Pengujian Black Box Test.....	108
Curriculum Vitae	109

ABSTRAK

Kejahatan dari pencurian informasi atau lebih dikenal dengan sebutan *cybercrime*, mengganggu aktifitas jaringan, dan sampai pengrusakan sistem menjadi permasalahan yang juga dialami oleh TamPin. Seringkali jaringan di instansi pemerintah tersebut seringkali mengalami *down*, koneksi menjadi semakin lambat, dan dimungkinkan adanya penyusup yang mengakses informasi penting yang ada di instansi tersebut. Walau belum bisa dipastikan jaringan *trouble* dikarenakan kesalahan teknis, yang jelas di TamPin belum diterapkan manajemen keamanan sehingga keseluruhan sistem jaringan pada saat sekarang masih bias diakses oleh siapapun dan hal tersebut bias disalah gunakan oleh pihak yang tidak bertanggung jawab.

Untuk itu pada penelitian ini penulis menawarkan sistem pengamanan jaringan menggunakan *Intrusion Detection System* (IDS) untuk dipasang di TamPin. IDS sendiri bertugas sebagai pengawas sistem yang akan melakukan identifikasi akses oleh siapa saja yang menggunakan sistem. Mesin *tools* IDS yang akan digunakan pada studi kasus ini menggunakan snort yang akan diintegrasikan dengan SMS Gateway agar bisa memonitoring jaringan secara *realtime*.

Sistem keamanan yang ada di TamPin mampu memonitoring jaringan secara *realtime* dan memberikan report yang disimpan dalam bentuk log file. File-file yang tersimpan tersebut bisa di audit menggunakan AcidBase yang berbentuk grafis melalui web interface. Sedangkan smsgateway akan mengirimkan sms ke admin ketika terjadi serangan yang teridentifikasi oleh mesin snort.

Kata kunci : *cyber crime*, IDS, Snort, AcidBase, SMS Gateway.

ABSTRAC

Crime of theft of information or better known as cybercrime, disrupting network activity, and destruction of the system into the problems experienced by TamPin. Often these networks in government agencies often face down, connections become slowly, and the suspected presence of intruders who access the important information in that agency. Although not yet certain network trouble due to technical errors, which clearly TamPin not been applied so that the overall security management system in the present in network can still be accessed by anyone and it can be misused by irresponsible parties.

Therefore in this study the author offers a network security system using the Intrusion Detection System (IDS) to be installed in TamPin. IDS it self served as a supervisor system that will identify access by anyone using the system. IDS machine tools to be used in this case study is using snort to be integrated with the SMS Gateway in order to monitor the network in real time.

The existing system security in TamPin able to monitor the network in real time and provide a report that is stored in a log file. The files are stored can be audited using the form AcidBase graphics via the web interface. While SMS Gateway will send sms to admin when an attack is identified by the Snort engine.

Keywords : Cyber Crime, IDS, Snort, AcidBase, SMS Gateway.

BAB I

PENDAHULUAN

1.1 LATAR BELAKANG

Perkembangan teknologi dibidang pendidikan ataupun bisnis dewasa ini mengalami pertumbuhan sangat signifikan, seiring laju perkembangan Teknologi Informasi dan Komunikasi global, lembaga yang telah memutuskan untuk memasang perangkat Teknologi Informasi dan Komunikasi (TIK) harus benar mampu untuk mengimplementasikan secara tepat agar bisa meningkatkan laju organisasi agar lebih baik dan mempunyai daya saing tinggi.

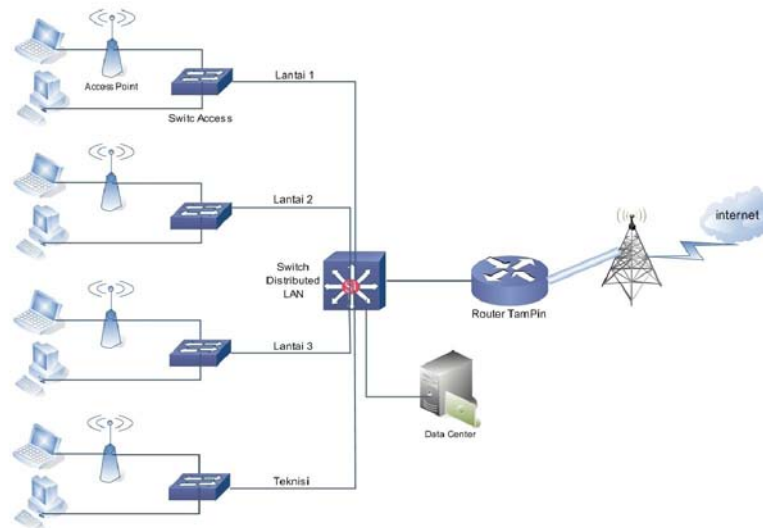
Adanya perangkat teknologi yang serba *modern* atau canggih akan tidak ada artinya tanpa diimbangi oleh pengaturan dan penggunaan secara tepat efektif dan efisien. Perangkat yang sederhana namun dikelola secara tepat bisa menstabilkan bahkan akan sangat membantu terhadap perkembangan perusahaan, hal tersebut disebabkan keterbatasan *resource* sehingga harus betul-betul memanfaatkan teknologi yang dimiliki. Dalam suatu teknologi jaringan diperlukan yang namanya manajemen jaringan yang fungsinya adalah untuk mengelola seluruh *resource* di jaringan agar bisa memberikan *good services* kepada penggunanya. Mengutip suatu definisi dari Mathews, D.C, bahwa proses suatu manajemen itu adalah “suatu proses yang ditujukan untuk merepresentasikan pengetahuan suatu organisasi kepada suatu langkah kongrit yang akan menghasilkan sesuatu yang diharapkan” (Kumar R, 2002). Oleh karena itu dibutuhkan startegi dan pengaturan yang tepat untuk mendapatkan

kehandalan jaringan dan bisa menjadi apa yang diinginkan oleh perusahaan. Yang tidak kalah penting, ketika desain dan proses manajemen jaringan selesai hendaknya diawasi oleh seorang penjaga gawang di jaringan yang khusus bertugas untuk melakukan perawatan dan pengawasan terhadap aktifitas jaringan.

Seorang *administrator* jaringan bertanggung jawab penuh atas segala sesuatu ketersediaan dan kerahasiaan informasi. Tidak hanya itu, pemeliharaan perangkat keras maupun lunak, menganalisa masalah, memantau kerja jaringan agar bisa selalu tersedia bagi pengguna menjadi aktivitas keseharian dari seorang *administrator* jaringan (cyberfreeforum.com). Untuk itu tugas dari seorang *administrator* cukup berat, sehingga dibutuhkan sebuah sistem *security* yang bisa diandalkan untuk membantu kerja sang admin.

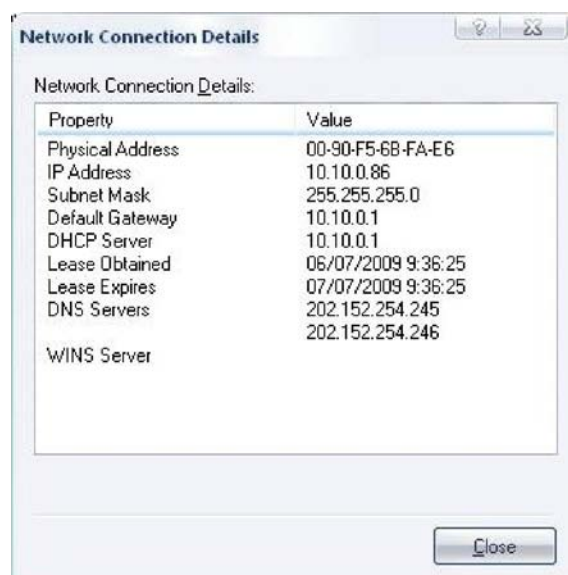
Taman Pintar (TamPin) merupakan instansi profit yang dibawah oleh pemerintah kota Daerah Istimewa Yogyakarta (DIY) yang bergerak didalam dunia hiburan sekaligus pembelajaran. Perangkat-perangkat yang ada didalamnya berisi alat-alat sains mulai dari Sekolah dasar (SD) sampai Sekolah Menengah Atas (SMA). Sebagai instansi yang beregerak dibidang *profit oriented* maka Taman Pintar (TamPin) memperagai instansinya dengan sistem komputer yang sudah canggih. Rata-rata Komputer yang digunakan untuk melakukan proses bisnis disana menggunakan pentium IV 3.0 keatas. Untuk perangkat jaringan TamPin mempercayakan kehandalan jaringannya dengan menggunakan produk CISCO seperti Cisco Router 1800 series, swicht 2400 series 24 port dan access point CISCO.

Seperti yang diketahui bahwasannya produk CISCO dikenal dengan sistem manajemen dan keamanannya yang cukup tangguh, namun bagi para *maniac* dunia maya tidak ada yang tidak mungkin, tidak ada sistem yang benar-benar 100% aman karena setiap produk pasti mempunyai *bug* disaat pembuatan program, dan hal tersebut pada umumnya selalu diamati oleh produsen suatu produk dan apabila terjadi kesalahan maka segera di perbaiki. Oleh karenanya software yang digunakan harus sering di *update*, tujuannya adalah untuk memperbaiki *bug* atau kesalahan pada software tersebut. TamPin yang sudah memperagai organisasinya dengan produk yang cukup canggih namun hal tersebut masih sangat rawan untuk mendapat serangan dari luar. Apalagi TamPin sebagai layanan publik juga memberi layanan *free hostspot* bagi para pengunjung. Dari beberapa pengamatan yang pernah dilakukan penulis, di TamPin hak akses ke jaringan dibuka secara bebas tanpa menggunakan autentikasi. Hal ini sangat rentan bagi keamanan jaringan. Topologi jaringan yang dimiliki masih sangat sederhana dan belum diberlakukan *policy* yang memandai untuk setiap area di seluruh lingkungan TamPin. IP jaringan di set *Dynamic Host Configuration Protocol* (DHCP) untuk seluruh kebutuhan jaringan. Untuk lebih jelasnya bisa dilihat dari topologi logik yang dimiliki TamPin :



Gambar 1.1 : Arsitektur Jaringan Taman Pintar

Dari topologi tersebut bisa dilihat bahwa jaringan taman pintar mendapat koneksi internet dari ISP yang kemudian dihubungkan ke CISCO router kemudian di set DHCP dengan IP 10.10.0.1 gateway 10.10.0.1 netmask 255.255.255.0. dari router kemudian terkoneksi dengan sebuah switch yang kemudian di *share* ke semua area.



Gambar 1.2 : Gambar Configurasi IP Address Jaringan Taman Pintar

Melihat dari beberapa informasi diatas, jaringan TamPin masih jauh dari standart keamanan sehingga rentan terhadap serangan. Seorang penyusup jaringan atau lebih akrab dikenal sebagai *hacker* bisa dengan leluasa masuk jaringan hanya dengan beberapa teknik saja. Beberapa *access point* yang terpasang-pun hanya diberlakukan *password* standart wireless yang sering digunakan seperti *Wired Equivalent Privacy* (WEP) atau *Wi – Fi Protected Access* (WPA) yang merupakan autentikasi standart bawaan *access point*. Kedua jenis autentikasi tersebut mudah ditembus dengan teknik *ARP spoofing* yang kemudian bisa di *generate* untuk mendapatkan *password*. Dari beberapa contoh autentikasi tersebut dapat disimpulkan bahwa sistem keamanan jaringan TamPin masih sangat kurang, untuk itu penulis ingin mencoba membahas dalam penelitian skripsi ini untuk mengimplementasikan dan mengembangkan sistem pendeteksi serangan pada jaringan yang sering dikenal *Intrusion Detection System* (IDS).

1.2 RUMUSAN MASALAH

Setelah melakukan penelusuran terhadap gambaran jaringan di lapangan, maka dari sekian banyak masalah ditemui mencoba di rumuskan dalam rumusan masalah sebagai berikut :

1. Bagaimana membangun sistem pengaman jaringan yang bisa mendeteksi serangan.
2. Bagaimana mengembangkan sistem pengamanan jaringan yang responsif.
3. Bagaimana *administrator* bisa memantau jaringan secara *real time*.
4. Bagaimana membuat *rule-rule* untuk pengkategorian serangan.
5. Bagaimana mengirimkan pemberitahuan adanya serangan melalui sms.

1.3 BATASAN MASALAH

Dari sekian banyak permasalahan yang telah dirumuskan, maka agar penelitian ini lebih fokus penulis membatasi permasalahan yang akan dibahas kepada :

1. Membangun sistem keamanan jaringan berbasis IDS menggunakan SNORT.
2. Mengembangkan Sistem Pendeteksi Serangan IDS dengan menggunakan SMS Gateway.

1.4 TUJUAN PENELITIAN

Penelitian tugas akhir ini bertujuan untuk membangun sistem keamanan jaringan yang handal dilingkungan Instansi Taman Pintar berbasis IDS dengan menggunakan SNORT. Penulis memilih Snort karena selain *open source* dan gratis, juga bisa ditambahkan aturan-aturan yang bisa disesuaikan dengan kebutuhan. Sistem IDS snort kali ini sedikit berbeda dengan yang sudah ada, karena penulis berencana menambahkan SMS Gateway sebagai sistem *alert* ketika ada serangan. Dengan *alert* tersebut seorang *administrator* akan menerima pesan sms dari *server* bahwa telah terjadi serangan. Sehingga nantinya dengan peringatan tersebut admin bisa mengambil tindakan selanjutnya. Ini akan sangat membantu admin untuk bisa memantau jaringan secara real time tanpa harus *standby* didepan komputer. Selain itu tujuan mahasiswa yang sedang melakukan penelitian ini dapat melakukan konfigurasi *server* dengan menggunakan ubuntu, apache, Mysql, SNORT, SMSGateway yang akan dijadikan pemantau jaringan.

1.5 MANFAAT PENELITIAN

Pemanfaatan Snort kini banyak digunakan oleh instansi atau perusahaan baik itu skala besar maupun kecil untuk membantu mengamankan sistem jaringan di lingkungan instansi masing-masing. Untuk itu dengan adanya penelitian tugas akhir ini semoga bisa membantu mengamankan jaringan TamPin dan membantu admin dalam memantau keamanan secara *real time*. Selain itu hasil dari pembahasan penelitian tugas akhir ini nantinya semoga bisa menjadi rujukan atau referensi oleh siapa saja yang nantinya ingin membuat sistem pengamanan dalam pengelolaan sebuah jaringan.

Secara lebih detail Penelitian tugas akhir ini diharapkan dapat bermanfaat bagi TamPin antara lain :

1. Mesin IDS yang dibangun bisa membantu mengamankan jaringan TamPin.
2. Mempermudah pekerjaan admin dalam menjaga keamanann jaringan.
3. Mencegah penyusup yang hendak menerobos masuk sistem.
4. Administrator jaringan TamPin bisa lebih mudah dalam mengaudit jaringan.
5. Mesin snort yang integrasi dengan sms gateway bisa lebih responsif dalam mengawasi jaringan sehingga ketika terjadi usaha-usaha mencurigakan bisa langsung diberitahukan lewat sms.
6. Pemberitahuan lewat sms bisa membantu admin dalam memantau jaringan secara *real time*.

1.6 KEASLIAN PENELITIAN

Sistem pengamanan jaringan yang berbasis IDS menggunakan SNORT dan SMSGateway sebelumnya belum pernah dilakukan di instansi TamPin. Namun pemanfaatan SNORT dalam pengamanan jaringan sudah pernah dilakukan ditempat lain dan studi kasus yang berbeda-beda. Berdasarkan hasil penelusuran, kajian tentang IDS pernah dilakukan oleh mahasiswa AKPRIND Yogyakarta, UBINUS Jakarta, dan Universitas Tarumanegara.

BAB V

PENUTUP

5.1 KESIMPULAN

Dalam penelitian tugas akhir ini yang mengambil judul “Sistem Pendeteksi Serangan Pada Jaringan Komputer Menggunakan Snort Berbasis Sms Gateway (*Studi Kasus di Taman Pintar Yogyakarta*)” bahwa dapat ditarik kesimpulan:

1. Setelah melakukan penelitian maka mesin pendeteksi serangan menggunakan snort berhasil dibuat.
2. Mesin snort sudah bisa bekerja sesuai fungsinya yaitu bisa mendeteksi jenis-jenis paket yang membahayakan dan menyimpannya kedalam database.
3. Dari data snort yang disimpan di dalam database, acidbase yang dipergunakan untuk menganalisis data sudah bisa dipergunakan sesuai fungsinya.
4. Sms gateway gammu yang diintegrasikan dengan mesin snort, sudah berhasil mengirimkan alert kepada administrator sebagai pemberitahuan.
5. Mesin snort, acidbase, dan sms gateway gammu menjadi satu kesatuan sebagai mesin pendeteksi serangan yang lebih responsif dan memberikan report secara *real time*.

6. Penulis telah dapat mengimplementasikan mesin snort sebagai pendeteksi serangan berbasis sms gateway sebagai alat pengaman jaringan di instansi taman pintar yogyakarta.

5.2 SARAN

Sistem pendeteksi serangan menggunakan snort ini tidak terlepas dari kekurangan dan kelemahan, terutama mesin snort sendiri harus mengupdate rule-rule yang mana setiap saat usaha orang untuk menyusup dan merusak sistem akan terus berkembang. Untuk itu agar sistem pengamanan ini dapat bekerja lebih optimal, peneliti menyarankan beberapa hal, antara lain:

1. Diharapkan pengembangan mesin pendeteksi serangan ini dengan menambahkan rule-rule baru atau metode baru yang bisa diterapkan pada mesin snort.
2. Pada penelitian selanjutnya ada beberapa hal yang perlu diperbaiki yaitu mengenai integrasi data dengan database yang lain seperti oracle, postgres dan database lainnya.
3. Pengembangan audit menggunakan web interface acidbase bisa dibuat lebih sederhana tanpa mengurangi fungsi-fungsi didalam acidbase, semisal membuat acidbase versi mobile sehingga audit database snort bisa dilakukan dengan handphone.
4. Pada sistem sms gammu pada penelitian berikutnya bisa ditambahkan manajemen user dan manajemen kontak dan bisa dibuat user interface-nya.

DAFTAR PUSTAKA

- Ambang Utomo, Prasetya. 2006. "Membangun Aplikasi SMS dengan Paket *Open Source*". Penerbit Andi.
- Ariyus, Dony. 2007 "*Intrusion Detection System*". Penerbit Andi Yogyakarta.
- Cafaro, Massimo. 2011 "*Grids, Clouds, and Virtualization*". Springer London Dordrecht Heidelberg New York.
- Cihar, Michal. 2011. "Gammu Manual" <http://wammu.eu/gammu/>
- Endorf, Carl. 2004 "*Intrusion Detection & Prevention*" McGraw-Hill.
- Cooper, Peter. 2010. "*How to Install Ruby 1.9.2 and Rails 3.0 on Ubuntu 10.10*" <http://www.rubyinside.com/how-to-install-ruby-1-9-2-and-rails-3-0-on-ubuntu-10-10-4148.html>
- Fadli Rosyad, Arief. 2010. "*Sistem Pendeteksi Penyusup Pada Jaringan Komputer Menggunakan IDS (Intrusion Detection System)*". Jurusan Teknik Komputer, Fakultas Teknik dan Ilmu UNIKOM Bandung.
- Grinsing, Ki. "*Memahami Firewall DMZ*". www.sysneta.com/memahami-firewall-dmz
- Howlett, Tony. 2005 "*Open Source Security Tools*" Prentice Hall Professional Technical Reference Upper Saddle River, New Jersey 07458.
- Komputer Wahana. 2006. "*Seri Panduan Lengkap Menguasai Pemograman Web dengan PHP 5*". Penerbit Andi.
- Maulana, Irpan. 2006. "*Pengujian pengembangan Aplikasi Bank*" FSILKOM UI <http://www.digilib.ui.ac.id/file?file=digital/122533-SP-117-Pengembangan%20Aplikasi-Metodologi>
- NAI, Kurniawan. 2010. "*Sistem Deteksi dan Penanganan Intrusi Menggunakan Snort dan Base*". Institut Sains & Teknologi AKPRIND, Yogyakarta.
- Northcutt, Stephen. 2004. "*Snort 2.1 Intrusion Detection, Second Edition*" Syngress Publishing, Inc
- Ortega, Alberto. 2010 "*PenTBox 1.4*" <http://www.pentbox.net/>
- Pardosi, Mico. 1997. "*Kamus Komputer Standart*". Penerbit Indah Surabaya.

- Provos, Niels. Thorsten Holz. 2007. "*Virtual Honeypots: From Botnet Tracking to Intrusion Detection*" Addison Wesley Professional.
- Ray Paradeep, Kumar. 2002. "*Cooperative Management of Enterprise Networks*". Kluwer Academic.
- Tahir, Ahmad. 2010. "*Cyber Crime (Akar Masalah, Solusi, dan Penanggulangannya)*" Penerbit Suka Press.
- Threestayanti, Liana. 2008. "*Network Administrator (profesi yang menjanjikan)*". <http://d3tkjuntad.cyberfreeforum.com/t260-network-administrator-profesi-yang-menjanjikan>.
- Toxen, box. 2000. "*Real World Linux® Security: Intrusion Prevention, Detection, and Recovery*" Prentice Hall PTR
- Ur Rahman, Rafeeq. 2003. "*Intrusion detection System With SNORT*". Prentice Hall Upper Saddle River New Jersey 07458.
- Zam Kerinci, Efvy. 2010. "*Hacking is Very Easy*". Penerbit connexi yogyakarta

LAMPIRAN A

KODE SUMBER (SOURCE CODE) MESIN SNORT

Nama File : snort.conf

```

#-----
#
# http://www.snort.org
# Snort 2.8.5.2 Ruleset
#
# Contact: snort-
# sigs@lists.sourceforge.net
#-----
# $Id$
#
#####
#####
# This file contains a sample
# snort configuration.
# You can take the following
# steps to create your own custom
# configuration:
#
# 1) Set the variables for your
# network
# 2) Configure dynamic loaded
# libraries
# 3) Configure preprocessors
# 4) Configure output plugins
# 5) Add any runtime config
# directives
# 6) Customize your rule set
#
#####
#####
# Step #1: Set the network
# variables:
# You must change the following
# variables to reflect your local
# network. The
# variable is currently setup for
# an RFC 1918 address space.
#
# You can specify it explicitly
# as:
#
# var HOME_NET 10.1.1.0/24
# if Snort is built with IPv6
# support enabled (--enable-ipv6),
# use:
#
# ipvar HOME_NET 10.1.1.0/24
# or use global variable

```

```

$(<interfacename>_ADDRESS which
will be always
# initialized to IP address and
# netmask of the network interface
# which you run
# snort at. Under Windows, this
# must be specified as
# $(<interfacename>_ADDRESS),
# such as:
# $(\Device\Packet_{12345678-
# 90AB-CDEF-1234567890AB})_ADDRESS)
#
# var HOME_NET $eth0_ADDRESS
#
# You can specify lists of IP
# addresses for HOME_NET
# by separating the IPs with
# commas like this:
#
# var HOME_NET
# [10.1.1.0/24,192.168.1.0/24]
#
# MAKE SURE YOU DON'T PLACE ANY
# SPACES IN YOUR LIST!
#
# or you can specify the variable
# to be any IP address
# like this:

var HOME_NET 192.168.1.0/24

# Set up the external network
# addresses as well. A good start
# may be "any"

var EXTERNAL_NET !$HOME_NET

#var EXTERNAL_NET !$HOME_NET
# Configure your server lists.
# This allows snort to only look
# for attacks to
# systems that have a service up.
# Why look for HTTP attacks if you
# are not
# running a web server? This
# allows quick filtering based on
# IP addresses
# These configurations MUST
# follow the same configuration
# scheme as defined
# above for $HOME_NET.
# List of DNS servers on your
# network

```

```

var DNS_SERVERS $HOME_NET

# List of SMTP servers on your
network
var SMTP_SERVERS $HOME_NET

# List of web servers on your
network
var HTTP_SERVERS $HOME_NET

# List of sql servers on your
network
var SQL_SERVERS $HOME_NET

# List of telnet servers on your
network
var TELNET_SERVERS $HOME_NET

# List of telnet servers on your
network
var FTP_SERVERS $HOME_NET

# List of snmp servers on your
network
var SNMP_SERVERS $HOME_NET

# Configure your service ports.
This allows snort to look for
attacks destined
# to a specific application only
on the ports that application
runs on. For
# example, if you run a web
server on port 8180, set your
HTTP_PORTS variable
# like this:
#
# portvar HTTP_PORTS 8180
#
# Ports you run web servers on

portvar HTTP_PORTS 80

# NOTE: If you wish to define
multiple HTTP ports, use the
portvar
# syntax to represent lists of
ports and port ranges. Examples:
## portvar HTTP_PORTS [80,8080]
## portvar HTTP_PORTS
[80,8000:8080]
# And only include the rule that
uses $HTTP_PORTS once.
#
# The pre-2.8.0 approach of
redefining the variable to a
different port and
# including the rules file twice
is obsolete. See
README.variables for more
# details.
# Ports you want to look for
SHELLCODE on.
portvar SHELLCODE_PORTS !80

# Ports you might see oracle
attacks on
portvar ORACLE_PORTS 1521

# Ports for FTP servers
portvar FTP_PORTS 21

# other variables
# AIM servers. AOL has a habit
of adding new AIM servers, so
instead of
# modifying the signatures when
they do, we add them to this list
of servers.
var AIM_SERVERS
[64.12.24.0/23,64.12.28.0/23,64.1
2.161.0/24,64.12.163.0/24,64.12.2
00.0/24,205.188.3.0/24,205.188.5.
0/24,205.188.7.0/24,205.188.9.0/2
4,205.188.153.0/24,205.188.179.0/
24,205.188.248.0/24]

# Path to your rules files (this
can be a relative path)
# Note for Windows users: You
are advised to make this an
absolute path,
# such as: c:\snort\rules
var RULE_PATH /etc/snort/rules
var PREPROC_RULE_PATH
/etc/snort/preproc_rules

# Configure the snort decoder
# =====
#
# Snort's decoder will alert on
lots of things such as header
# truncation or options of
unusual length or infrequently
used tcp options
# Stop generic decode events:
# config disable_decode_alerts
# Stop Alerts on experimental TCP
options
# config
disable_tcpopt_experimental_alert
s
# Stop Alerts on obsolete TCP
options
# config
disable_tcpopt_obsolete_alerts
# Stop Alerts on T/TCP alerts
# In snort 2.0.1 and above, this
only alerts when a TCP option is
detected
# that shows T/TCP being actively
used on the network. If this is
normal
# behavior for your network,
disable the next option.

```



```

#                               config
disable_tcpopt_ttcp_alerts
# Stop Alerts on all other
TCPOption type events:
# config disable_tcpopt_alerts
# Stop Alerts on invalid ip
options
# config disable_ipopt_alerts
# Alert if value in length field
(IP, TCP, UDP) is greater than
the
# actual length of the captured
portion of the packet that the
length
# is supposed to represent:
#                               config
enable_decode_oversized_alerts
# Same as above, but drop packet
if in Inline mode -
# enable_decode_oversized_alerts
must be enabled for this to work:
#                               config
enable_decode_oversized_drops
# Configure the detection engine

# =====
# Use a different pattern matcher
in case you have a machine with
very limited
# resources:
#
# config detection: search-method
lowmem

# Configure Inline Resets
# =====
# If running an iptables firewall
with snort in InlineMode() we can
now
# perform resets via a physical
device. We grab the indev from
iptables
# and use this for the interface
on which to send resets. This
config
# option takes an argument for
the src mac address you want to
use in the
# reset packet. This way the
bridge can remain stealthy. If
the src mac
# option is not set we use the
mac address of the indev device.
If we
# don't set this option we will
default to sending resets via raw
socket,
# which needs an ipaddress to be
assigned to the int.
#
#                               config          layer2resets:
00:06:76:DD:5F:E3

#####
# Step #2: Configure dynamic
loaded libraries
# If snort was configured to use
dynamically loaded libraries,
# those libraries can be loaded
here.
#
# Each of the following
configuration options can be done
via
# the command line as well.
#
# Load all dynamic preprocessors
from the install path
# (same as command line option --
dynamic-preprocessor-lib-dir)
#
dynamicpreprocessor      directory
/usr/lib/snort_dynamicpreprocesso
r/
#
# Load a specific dynamic
preprocessor library from the
install path
# (same as command line option --
dynamic-preprocessor-lib)
#
#                               dynamicpreprocessor      file
/usr/lib/snort_dynamicpreprocesso
r/libdynamicexample.so
# Load a dynamic engine from the
install path
# (same as command line option --
dynamic-engine-lib)
dynamicengine
/usr/lib/snort_dynamicengine/libso
f_engine.so
#
# Load all dynamic rules
libraries from the install path
# (same as command line option --
dynamic-detection-lib-dir)
#
#                               dynamicdetection      directory
/usr/lib/snort_dynamicrules/
#
# Load a specific dynamic rule
library from the install path
# (same as command line option --
dynamic-detection-lib)
#
#                               dynamicdetection      file
/usr/lib/snort_dynamicrule/libdyn
amicexamplerule.so
#
#####

```

```

#####
# Step #3: Configure
preprocessors
# General configuration for
preprocessors is of
# the form
#           preprocessor
<name_of_processor>:
<configuration_options>

# frag3: Target-based IP
defragmentation
# -----
-----
#
# Frag3 is a brand new IP
defragmentation preprocessor that
is capable of
# performing "target-based"
processing of IP fragments.
Check out the
# README.frag3 file in the doc
directory for more background and
configuration
# information.
#
# Frag3 configuration is a two
step process, a global
initialization phase
# followed by the definition of a
set of defragmentation engines.
#
# Global configuration defines
the number of fragmented packets
that Snort can
# track at the same time and
gives you options regarding the
memory cap for the
# subsystem or, optionally,
allows you to preallocate all the
memory for the
# entire frag3 system.
#
# frag3_global options:
# max_fragments: Maximum number of
frag trackers that may be active
at once.
#           Default value is
8192.
# memcap: Maximum amount of
memory that frag3 may access at
any given time.
#           Default value is 4MB.
# prealloc_fragments: Maximum
number of individual fragments
that may be processed
#           at once.
This is instead of the memcap
system, uses static
#           allocation to
increase performance. No default
value. Each
#           preallocated
fragment typically eats ~1550
bytes. However,
#           the exact
amount is determined by the
snaplen, and this can
#           go as high as
64K so beware!
#
# Target-based behavior is
attached to an engine as a
"policy" for handling
# overlaps and retransmissions as
enumerated in the Paxson paper.
There are
# currently five policy types
available: "BSD", "BSD-right",
"First", "Linux"
# and "Last". Engines can be
bound to standard Snort CIDR
blocks or
# IP lists.
#
# frag3_engine options:
# timeout: Amount of time a
fragmented packet may be active
before expiring.
#           Default value is 60
seconds.
# ttl_limit: Limit of delta
allowable for TTLs of packets in
the fragments.
#           Based on the
initial received fragment TTL.
# min_ttl: Minimum acceptable
TTL for a fragment, frags with
TTLs below this
#           value will be
discarded. Default value is 0.
# detect_anomalies: Activates
frag3's anomaly detection
mechanisms.
# policy: Target-based policy
to assign to this engine.
Default is BSD.
# bind_to: IP address set to
bind this engine to. Default is
all hosts.
#
# Frag3 configuration example:
#preprocessor frag3_global:
max_fragments 65536, prealloc_fragments
65536
#preprocessor frag3_engine:
policy linux \
#
bind_to
[10.1.1.12/32,10.1.1.13/32] \
#
detect_anomalies
#preprocessor frag3_engine:
policy first \

```

```

#
bind_to 10.2.1.0/24 \
#
detect_anomalies
#preprocessor frag3_engine:
policy last \
#
bind_to 10.3.1.0/24
#preprocessor frag3_engine:
policy bsd

preprocessor frag3_global:
max_fragments 65536
preprocessor frag3_engine: policy
first detect_anomalies
overlap_limit 10

# stream5: Target Based stateful
inspection/stream reassembly for
Snort
# -----
-----
# Stream5 is a target-based
stream engine for Snort. It
handles both
# TCP and UDP connection tracking
as well as TCP reassembly.
#
# See README.stream5 for details
on the configuration options.
#
# Example config

preprocessor stream5_global:
max_tcp 8192, track_tcp yes, \

track_udp no
preprocessor stream5_tcp: policy
first

# Not recommended in production
systems
# preprocessor stream5_tcp:
policy first,
use_static_footprint_sizes
# preprocessor stream5_udp:
ignore_any_rules

# Performance Statistics
# -----
# Documentation for this is
provided in the Snort Manual.
You should read it.
# It is included in the release
distribution as
doc/snort_manual.pdf
#
# preprocessor perfmonitor: time
300 file /var/snort/snort.stats
pktcnt 10000
# http_inspect: normalize and
detect HTTP traffic and protocol
anomalies
#
# lots of options available here.
See doc/README.http_inspect.
# unicode.map should be wherever
your snort.conf lives, or given
# a full path to where snort can
find it.

preprocessor http_inspect: global
\
iis_unicode_map unicode.map
1252
preprocessor http_inspect_server:
server default \
profile all ports { 80 8080
8180 } oversize_dir_length 500
#
# Example unique server
configuration
#
#preprocessor
http_inspect_server: server
1.1.1.1 \
# ports { 80 3128 8080 } \
# server_flow_depth 0 \
# ascii no \
# double_decode yes \
# non_rfc_char { 0x00 } \
# chunk_length 500000 \
# non_strict \
# oversize_dir_length 300 \
# no_alerts

# rpc_decode: normalize RPC
traffic
# -----
--
# RPC may be sent in alternate
encodings besides the usual 4-
byte encoding
# that is used by default. This
plugin takes the port numbers
that RPC

# services are running on as
arguments - it is assumed that
the given ports
# are actually running this type
of service. If not, change the
ports or turn
# it off.
# The RPC decode preprocessor
uses generator ID 106
# arguments: space separated list
# alert_fragments - alert on any
rpc fragmented TCP data
# no_alert_multiple_requests -
don't alert when >1 rpc query is
in a packet
# no_alert_large_fragments -
don't alert when the fragmented
#

```

```

sizes exceed the current packet
size
# no_alert_incomplete - don't
alert when a single segment
#           exceeds
the current packet size

preprocessor rpc_decode: 111
32771

# bo: Back Orifice detector
# -----
# Detects Back Orifice traffic on
the network.
#
# arguments:
# syntax:
#   preprocessor bo: noalert {
client | server | general |
snort_attack } \
#           drop {
client | server | general |
snort_attack }
# example:
#   preprocessor bo: noalert {
general server } drop {
snort_attack }
#
#
# The Back Orifice detector uses
Generator ID 105 and uses the
# following SIDS for that GID:
# SID      Event description
# ----      -----
# 1          Back Orifice traffic
detected
# 2          Back Orifice Client
Traffic Detected
# 3          Back Orifice Server
Traffic Detected
# 4          Back Orifice Snort
Buffer Attack

preprocessor bo

# ftp_telnet: FTP & Telnet
normalizer, protocol enforcement
and buff overflow
# -----
-----
# This preprocessor normalizes
telnet negotiation strings from
telnet and
# ftp traffic. It looks for
traffic that breaks the normal
data stream
# of the protocol, replacing it
with a normalized representation
of that
# traffic so that the "content"
pattern matching keyword can work
without

# requiring modifications.
#
# It also performs protocol
correctness checks for the FTP
command channel,
# and identifies open FTP data
transfers.
#
# FTPTelnet has numerous options
available, please read
# README.ftptelnet for help
configuring the options for the
global
# telnet, ftp server, and ftp
client sections for the protocol.

#####
# Per Step #2, set the following
to load the ftptelnet
preprocessor
# dynamicpreprocessor file <full
path to
libsftptelnet_preproc.so>
# or use commandline option
# --dynamic-preprocessor-lib
<full path to
libsftptelnet_preproc.so>

preprocessor ftp_telnet: global \
encrypted_traffic yes \
inspection_type stateful
preprocessor ftp_telnet_protocol:
telnet \
normalize \
ayt_attack_thresh 200

# This is consistent with the FTP
rules as of 18 Sept 2004.
# CWD can have param length of
200
# MODE has an additional mode of
Z (compressed)
# Check for string formats in
USER & PASS commands
# Check nDTM commands that set
modification time on the file.

preprocessor ftp_telnet_protocol:
ftp server default \
def_max_param_len 100 \
alt_max_param_len 200 { CWD }
\
cmd_validity MODE < char ASBCZ
> \
cmd_validity MDTM < [ date
nnnnnnnnnnnnnn[.n[n[n]]] ] string
> \
chk_str_fmt { USER PASS RNFR
RNTD SITE MKD } \
telnet_cmds yes \
data_chan

```

```

preprocessor ftp_telnet_protocol:
ftp client default \
    max_resp_len 256 \
    bounce yes \
    telnet_cmds yes

# smtp: SMTP normalizer, protocol
enforcement and buffer overflow
# -----
-----
# This preprocessor normalizes
SMTP commands by removing
extraneous spaces.
# It looks for overly long
command lines, response lines,
and data header lines.
# It can alert on invalid
commands, or specific valid
commands. It can optionally
# ignore mail data, and can
ignore TLS encrypted data.
#
# SMTP has numerous options
available, please read
README.SMTP for help
# configuring options.

#####

# Per Step #2, set the following
to load the smtp preprocessor
# dynamicpreprocessor file <full
path to libsf_smtp_preproc.so>
# or use commandline option
# --dynamic-preprocessor-lib
<full path to
libsf_smtp_preproc.so>

preprocessor smtp: \
    ports { 25 587 691 } \
    inspection_type stateful \
    normalize_cmds \
    normalize_cmds { EXPN VRFY RCPT
} \
    alt_max_command_line_len 260 {
MAIL } \
    alt_max_command_line_len 300 {
RCPT } \
    alt_max_command_line_len 500 {
HELP HELO ETRN } \
    alt_max_command_line_len 255 {
EXPN VRFY }

# sfPortscan
# -----
# Portscan detection module.
Detects various types of
portscans and
# portsweeps. For more
information on detection
philosophy, alert types,
# and detailed portscan
information, please refer to the
README.sfportscan.
#
# -configuration options-
# proto { tcp udp icmp ip all
}
# The arguments to the
proto option are the types of
protocol scans that
# the user wants to detect.
Arguments should be separated by
spaces and
# not commas.
# scan_type { portscan
portsweep decoy_portscan
distributed_portscan all }
# The arguments to the
scan_type option are the scan
types that the
# user wants to detect.
Arguments should be separated by
spaces and not
# commas.
# sense_level {
low|medium|high }
# There is only one
argument to this option and it is
the level of
# sensitivity in which to
detect portscans. The 'low'
sensitivity
# detects scans by the
common method of looking for
response errors, such
# as TCP RSTs or ICMP
unreachables. This level
requires the least
# tuning. The 'medium'
sensitivity level detects
portscans and
# filtered portscans
(portscans that receive no
response). This
# sensitivity level usually
requires tuning out scan events
from NATed
# IPs, DNS cache servers,
etc. The 'high' sensitivity
level has
# lower thresholds for
portscan detection and a longer
time window than
# the 'medium' sensitivity
level. Requires more tuning and
may be noisy
# on very active networks.
However, this sensitivity levels
catches the
# most scans.
# memcap { positive integer }
# The maximum number of
bytes to allocate for portscan

```

```

detection. The
# higher this number the
more nodes that can be tracked.
# logfile { filename }
# This option specifies the
file to log portscan and detailed
portscan
# values to. If there is
not a leading /, then snort logs
to the
# configured log directory.
Refer to README.sfportscan for
details on
# the logged values in the
logfile.
# watch_ip { Snort IP List }
# ignore_scanners { Snort IP
List }
# ignore_scanned { Snort IP
List }
# These options take a
snort IP list as the argument.
The 'watch_ip'
# option specifies the
IP(s) to watch for portscan. The
# 'ignore_scanners' option
specifies the IP(s) to ignore as
scanners.
# Note that these hosts are
still watched as scanned hosts.
The
# 'ignore_scanners' option
is used to tune alerts from very
active
# hosts such as NAT, nessus
hosts, etc. The 'ignore_scanned'
option
# specifies the IP(s) to
ignore as scanned hosts. Note
that these hosts
# are still watched as
scanner hosts. The
'ignore_scanned' option is
# used to tune alerts from
very active hosts such as syslog
servers, etc.
# detect_ack_scans
# This option will include
sessions picked up in midstream
by the stream
# module, which is
necessary to detect ACK scans.
However, this can lead to
# false alerts, especially
under heavy load with dropped
packets; which is why
# the option is off by
default.
#
preprocessor sfportscan: proto {
all } \
                                memcap {
10000000 } \
sense_level { low }

# arpspoof
#-----
# Experimental ARP detection code
from Jeff Nathan, detects ARP
attacks,
# unicast ARP requests, and
specific ARP mapping monitoring.
To make use of
# this preprocessor you must
specify the IP and hardware
address of hosts on
# the same layer 2 segment as
you. Specify one host IP MAC
combo per line.
# Also takes a "-unicast" option
to turn on unicast ARP request
detection.
# Arpspoof uses Generator ID 112
and uses the following SIDS for
that GID:

# SID      Event description
# -----
# 1        Unicast ARP request
# 2        Etherframe ARP
mismatch (src)
# 3        Etherframe ARP
mismatch (dst)
# 4        ARP cache overwrite
attack
#preprocessor arpspoof
#preprocessor
arpspoof_detect_host:
192.168.40.1 f0:0f:00:f0:0f:00

# ssh
#-----
# The SSH preprocessor detects
the following exploits:
Challenge-Response
# Authentication overflow, CRC 32
overflow, Secure CRT version
string overflow,
# and protocol version
mismatches.

#
# Both Challenge-Response Auth
and CRC 32 attacks occur after
the key exchange,
# and are therefore encrypted.
Both attacks involve sending a
large payload
# (20kb+) to the server
immediately after the
authentication challenge.
# To detect the attacks, the SSH
preprocessor counts the number of

```

```

bytes
# transmitted to the server.  If
# those bytes exceed a pre-defined
# limit,
# set by the option
# "max_client_bytes", an alert is
# generated. Since
# the Challenge-Response Auth
# overflow only affects SSHv2,
# while CRC 32 only
# affects SSHv1, the SSH version
# string exchange is used to
# distinguish
# the attacks.
#
# The Secure CRT and protocol
# mismatch exploits are observable
# before
# the key exchange.
#
# SSH has numerous options
# available, please read README.ssh
# for help
# configuring options.

#####
# Per Step #2, set the following
# to load the ssh preprocessor
# dynamicpreprocessor file <full
# path to libsf_ssh_preproc.so>
# or use commandline option
# --dynamic-preprocessor-lib
# <full path to
# libsf_ssh_preproc.so>
#

preprocessor ssh: server_ports {
22 } \

max_client_bytes 19600 \

max_encrypted_packets 20 \

enable_respoverflow
enable_sshlrcrc32 \

enable_srvoverflow
enable_protomismatch

# DCE/RPC
#-----
#-----
#
# The dcerpc preprocessor detects
# and decodes SMB and DCE/RPC
# traffic.
# It is primarily interested in
# DCE/RPC data, and only decodes
# SMB
# to get at the DCE/RPC data
# carried by the SMB layer.
#
# Currently, the preprocessor
only handles reassembly of
fragmentation
# at both the SMB and DCE/RPC
# layer. Snort rules can be evaded
# by
# using both types of
# fragmentation; with the
# preprocessor enabled
# the rules are given a buffer
# with a reassembled SMB or DCE/RPC
# packet to examine.
#
# At the SMB layer, only
# fragmentation using WriteAndX is
# currently
# reassembled. Other methods
# will be handled in future
# versions of
# the preprocessor.
#
# Autodetection of SMB is done by
# looking for "\xFFSMB" at the
# start of
# the SMB data, as well as
# checking the NetBIOS header
# (which is always
# present for SMB) for the type
# "SMB Session".
#
# Autodetection of DCE/RPC is not
# as reliable. Currently, two
# bytes are
# checked in the packet.
# Assuming that the data is a
# DCE/RPC header,
# one byte is checked for DCE/RPC
# version (5) and another for the
# type
# "DCE/RPC Request". If both
# match, the preprocessor proceeds
# with that
# assumption that it is looking
# at DCE/RPC data. If subsequent
# checks
# are nonsensical, it ends
# processing.
#
# DCERPC has numerous options
# available, please read
# README.dcerpc for help
# configuring options.

#####
# Per Step #2, set the following
# to load the dcerpc preprocessor
# dynamicpreprocessor file <full
# path to libsf_dcerpc_preproc.so>
# or use commandline option
# --dynamic-preprocessor-lib
# <full path to
# libsf_dcerpc_preproc.so>
#

```

```

#preprocessor dcerpc: \
#   autodetect \
#   max_frag_size 3000 \
#   memcap 100000
# DCE/RPC 2
#-----
# See doc/README.dcerpc2 for
# explanations of what the
# preprocessor does and how to
# configure it.
#

preprocessor dcerpc2
preprocessor dcerpc2_server:
default

# DNS
#-----
# The dns preprocessor
# (currently) decodes DNS Response
# traffic
# and detects a few
# vulnerabilities.
#
# DNS has a few options
# available, please read README.dns
# for
# help configuring options.

#####

# Per Step #2, set the following
# to load the dns preprocessor
# dynamicpreprocessor file <full
# path to libsf_dns_preproc.so>
# or use commandline option
# --dynamic-preprocessor-lib
# <full path to
# libsf_dns_preproc.so>

preprocessor dns: \
  ports { 53 } \
  enable_rdata_overflow

# SSL
#-----
# Encrypted traffic should be
# ignored by Snort for both
# performance reasons
# and to reduce false positives.
# The SSL Dynamic Preprocessor
# (SSLPP)
# inspects SSL traffic and
# optionally determines if and when
# to stop
# inspection of it.
#
# Typically, SSL is used over
# port 443 as HTTPS. By enabling
# the SSLPP to

# inspect port 443, only the SSL
# handshake of each connection will
# be
# inspected. Once the traffic is
# determined to be encrypted, no
# further
# inspection of the data on the
# connection is made.
#
# If you don't necessarily trust
# all of the SSL capable servers on
# your
# network, you should remove the
# "trustservers" option from the
# configuration.
#
# Important note: Stream5
# should be explicitly told to
# reassemble
# traffic on
# the ports that you intend to
# inspect SSL
# encrypted
# traffic on.
#
# To add reassembly on port 443
# to Stream5, use 'port both 443'
# in the
# Stream5 configuration.

preprocessor ssl:
noinspect_encrypted, trustservers

#####

# Step #4: Configure output
# plugins
#
# Uncomment and configure the
# output plugins you decide to use.
# General
# configuration for output
# plugins is of the form:
#
# output <name_of_plugin>:
# <configuration_options>
#
# alert_syslog: log alerts to
# syslog
# -----
# Use one or more syslog
# facilities as arguments. Win32
# can also optionally
# specify a particular
# hostname/port. Under Win32, the
# default hostname is
# '127.0.0.1', and the default
# port is 514.
#
# [Unix flavours should use this

```



```

format...]
# output alert_syslog: LOG_AUTH
LOG_ALERT
#
# [Win32 can use any of these
formats...]
# output alert_syslog: LOG_AUTH
LOG_ALERT
# output alert_syslog:
host=hostname, LOG_AUTH LOG_ALERT
# output alert_syslog:
host=hostname:port, LOG_AUTH
LOG_ALERT

# log_tcpdump: log packets in
binary tcpdump format
# -----
# The only argument is the output
file name.
#

output log_tcpdump: tcpdump.log

# database: log to a variety of
databases
# -----
# See the README.database file
for more information about
configuring
# and using this plugin.
#
# output database: log, mysql,
user=root password=test dbname=db
host=localhost
# output database: alert,
postgresql, user=snort
dbname=snort

output database: log, mysql,
user=root password=rahasia
dbname=snort host=localhost

# output database: log, odbc,
user=snort dbname=snort
# output database: log, mssql,
dbname=snort user=snort
password=test
# output database: log, oracle,
dbname=snort user=snort
password=test
# <debian>
# Keep your paws off of these
(#DBSTART#) and (#DBEND#) tokens
# or you *will* break the
configure process (snort-
pgsql/snort-mysql only)
# Anything you put between them
will be removed on (re)configure.
#
# (#DBSTART#)
# (#DBEND#)

```

```

#
# </debian>
#
# unified: Snort unified binary
format alerting and logging
# -----
# The unified output plugin
provides two new formats for
logging and generating
# alerts from Snort, the
"unified" format. The unified
format is a straight
# binary format for logging data
out of Snort that is designed to
be fast and
# efficient. Used with barnyard
(the new alert/log processor),
most of the
# overhead for logging and
alerting to various slow storage
mechanisms such as
# databases or the network can
now be avoided.
#
# Check out the spo_unified.h
file for the data formats.
#
# Two arguments are supported.
# filename - base filename to
write to (current time_t is
appended)
# limit - maximum size of
spool file in MB (default: 128)
#
# output alert_unified: filename
snort.alert, limit 128
# output log_unified: filename
snort.log, limit 128
# prelude: log to the Prelude
Hybrid IDS system
# -----
#
# profile = Name of the Prelude
profile to use (default is
snort).
#
# Snort priority to IDMEF
severity mappings:
# high < medium < low < info
#
# These are the default mapped
from classification.config:
# info = 4
# low = 3
# medium = 2
# high = anything below medium
#
# output alert_prelude
# output alert_prelude:
profile=snort-profile-name

```

```

# You can optionally define new
rule types and associate one or
more output
# plugins specifically to that
type.
#
# This example will create a type
that will log to just tcpdump.
# ruletype suspicious
# {
#   type log
#   output      log_tcpdump:
suspicious.log
# }
#
# EXAMPLE RULE FOR SUSPICIOUS
RULETYPE:
# suspicious tcp $HOME_NET any ->
$HOME_NET 6667 (msg:"Internal IRC
Server");
#
# This example will create a rule
type that will log to syslog and
a mysql
# database:
# ruletype redalert
# {
#   type alert
#   output alert_syslog: LOG_AUTH
LOG_ALERT
#   output database: log, mysql,
user=snort      dbname=snort
host=localhost
# }
#
# EXAMPLE RULE FOR REDALERT
RULETYPE:
# redalert tcp $HOME_NET any ->
$EXTERNAL_NET 31337 \
#   (msg:"Someone is being LEET";
flags:A+;)
#
# Include classification &
priority settings
# Note for Windows users: You
are advised to make this an
absolute path,
#           such           as:
c:\snort\etc\classification.conf
ig

include classification.config

# Include reference systems
# Note for Windows users: You
are advised to make this an
absolute path,
#           such           as:
c:\snort\etc\reference.config

include reference.config

#####

#####
##
# Step #5: Configure snort with
config statements
# See the snort manual for a full
set of configuration references
#
# config flowbits_size: 64
#
# New global ignore_ports config
option from Andy Mullican
#
# config ignore_ports: <tcp|udp>
<list of ports separated by
whitespace>
# config ignore_ports: tcp 21
6667:6671 1356
# config ignore_ports: udp 1:17
53

#####
#####
##
# Step #6: Customize your rule
set
#
# Up to date snort rules are
available at http://www.snort.org
#
# The snort web site has
documentation about how to write
your own custom snort
# rules.
#=====
=====
# Include all relevant rulesets
here
#
# The following rulesets are
disabled by default:
#
#   web-attacks, backdoor,
shellcode, policy, porn, info,
icmp-info, virus,
#   chat, multimedia, and p2p
#
# These rules are either site
policy specific or require tuning
in order to not
# generate false positive alerts
in most environments.
#
# Please read the specific
include file for more information
and
# README.alert_order for how rule
ordering affects how alerts are
triggered.
#=====
=====

include $RULE_PATH/local.rules

```

```

include          $RULE_PATH/bad-
traffic.rules
include $RULE_PATH/exploit.rules
include          $RULE_PATH/community-
exploit.rules
include $RULE_PATH/scan.rules
include $RULE_PATH/finger.rules
include $RULE_PATH/ftp.rules
include $RULE_PATH/telnet.rules
include $RULE_PATH/rpc.rules
include
$RULE_PATH/rservices.rules
include $RULE_PATH/dos.rules
include          $RULE_PATH/community-
dos.rules
include $RULE_PATH/ddos.rules
include $RULE_PATH/dns.rules
include $RULE_PATH/tftp.rules

# Specific web server rules:
include $RULE_PATH/web-cgi.rules
include          $RULE_PATH/web-
coldfusion.rules
include $RULE_PATH/web-iis.rules
include          $RULE_PATH/web-
frontpage.rules
include $RULE_PATH/web-misc.rules
include          $RULE_PATH/web-
client.rules
include $RULE_PATH/web-php.rules
include $RULE_PATH/community-sql-
injection.rules
include $RULE_PATH/community-web-
client.rules
include $RULE_PATH/community-web-
dos.rules
include $RULE_PATH/community-web-
iis.rules
include $RULE_PATH/community-web-
misc.rules
include $RULE_PATH/community-web-
php.rules

# Rules for other services:
include $RULE_PATH/sql.rules
include $RULE_PATH/x11.rules
include $RULE_PATH/icmp.rules
include $RULE_PATH/netbios.rules
include $RULE_PATH/misc.rules
include          $RULE_PATH/attack-
responses.rules
include $RULE_PATH/oracle.rules
include          $RULE_PATH/community-
oracle.rules
include $RULE_PATH/mysql.rules
include $RULE_PATH/snmp.rules
include          $RULE_PATH/community-
ftp.rules
include $RULE_PATH/smtp.rules
include          $RULE_PATH/community-
smtp.rules
include $RULE_PATH/imap.rules
include          $RULE_PATH/community-
imap.rules
include $RULE_PATH/pop2.rules
include $RULE_PATH/pop3.rules
include $RULE_PATH/nntp.rules
include          $RULE_PATH/community-
nntp.rules
include          $RULE_PATH/community-
sip.rules
include          $RULE_PATH/other-
ids.rules

# Attack-in-progress rules:
include          $RULE_PATH/web-
attacks.rules
include $RULE_PATH/backdoor.rules
include          $RULE_PATH/community-
bot.rules
include          $RULE_PATH/community-
virus.rules

# This ruleset is almost useless
currently:
# include $RULE_PATH/virus.rules
# Note: this rule is extremely
chatty, enable with care
#                               include
$RULE_PATH/shellcode.rules

# Policy related rules:
# include $RULE_PATH/policy.rules
# include $RULE_PATH/community-
policy.rules
# include $RULE_PATH/porn.rules
# include $RULE_PATH/community-
inappropriate.rules
# include $RULE_PATH/chat.rules
#                               include
$RULE_PATH/multimedia.rules
# include $RULE_PATH/p2p.rules
# include $RULE_PATH/community-
game.rules
# include $RULE_PATH/community-
misc.rules

# Extremely chatty rules:
# include $RULE_PATH/info.rules
# include          $RULE_PATH/icmp-
info.rules
# include $RULE_PATH/community-
icmp.rules

# Experimental rules:
# NOTICE: this is currently empty

include
$RULE_PATH/experimental.rules

#                               include
$PREPROC_RULE_PATH/preprocessor.r
ules
#                               include
$PREPROC_RULE_PATH/decoder.rules
# Include any thresholding or

```

```

suppression      commands.      See
threshold.conf  in the
# <snort src>/etc directory for
details.         Commands      don't
necessarily need to be
# contained in this conf, but a
separate conf makes it easier to
maintain them.
# Note for Windows users:  You
are advised to make this an
absolute path,
#           such           as:
c:\snort\etc\threshold.conf
# Uncomment if needed.
# include threshold.conf

```

Nama File : sqlinjection.rule

```

# Copyright 2005 Sourcefire, Inc.
All Rights Reserved.
# These rules are licensed under
the GNU General Public License.
# Please see the file LICENSE in
this directory for more details.
#       $Id:           community-sql-
injection.rules,v 1.10 2006/10/19
20:19:34 akirk Exp $

```

```

alert tcp $EXTERNAL_NET any ->
$HOME_NET          $HTTP_PORTS
(msg:"COMMUNITY    SQL-INJECTION
Microsoft BizTalk Server 2002
rawdodata.asp";
flow:to_server,established;
uricontent:"/rawdodata.asp?";
nocase;
pcre:"/rawdodata.asp\x3F[^\r\n]*
exec/Ui";           classtype:web-
application-attack;
reference:bugtraq,7470;
reference:cve,2003-0118;
reference:url,www.microsoft.com/t
echnet/security/bulletin/MS03-
016.msp; sid:10000106; rev:1;)

```

```

alert tcp $EXTERNAL_NET any ->
$HOME_NET          $HTTP_PORTS
(msg:"COMMUNITY    SQL-INJECTION
Microsoft BizTalk Server 2002
RawCustomSearchField.asp";
flow:to_server,established;
uricontent:"/rawdodata.asp?";
nocase;
pcre:"/RawCustomSearchField.asp\x
3F[^\r\n]*exec/Ui";
classtype:web-application-attack;
reference:bugtraq,7470;
reference:cve,2003-0118;
reference:url,www.microsoft.com/t

```

```

echnet/security/bulletin/MS03-
016.msp; sid:10000107; rev:1;)

```

```

alert tcp $EXTERNAL_NET any ->
$HOME_NET          $HTTP_PORTS
(msg:"COMMUNITY    SQL-INJECTION
OpenBB             board.php";
flow:to_server,established;
uricontent:"/board.php";
pcre:"/board.php\x3F[w+\x3D[0-
9]+\s/Ui";         classtype:web-
application-attack;
reference:bugtraq,7404;
sid:10000108; rev:1;)

```

```

alert tcp $EXTERNAL_NET any ->
$HOME_NET          $HTTP_PORTS
(msg:"COMMUNITY    SQL-INJECTION
OpenBB             member.php";
flow:to_server,established;
uricontent:"/member.php";
pcre:"/member.php\x3F[w+\x3D[0-
9]+\s/Ui";         classtype:web-
application-attack;
reference:bugtraq,7404;
sid:10000109; rev:1;)

```

```
#Rules submitted by rmkml
```

```

alert tcp $EXTERNAL_NET any ->
$HTTP_SERVERS     $HTTP_PORTS
(msg:"COMMUNITY    SQL-INJECTION
WIZZ ForumTopicDetails Sql
Injection          attempt";
flow:to_server,established;
uricontent:"/ForumTopicDetails.ph
p";                 nocase;
uricontent:"TopicID|3D|"; nocase;
uricontent:"union";   nocase;
uricontent:"select";  nocase;
uricontent:"from";    nocase;
uricontent:"ForumUser"; nocase;
uricontent:"where";   nocase;
reference:bugtraq,15410;
reference:url,www.osvdb.org/displ
ayvuln.php?osvdb_id=20846;
classtype:web-application-attack;
sid:10000192; rev:2;)

```

```

alert tcp $EXTERNAL_NET any ->
$HTTP_SERVERS     $HTTP_PORTS
(msg:"COMMUNITY    SQL-INJECTION
WIZZ ForumAuthDetails Sql
Injection          attempt";
flow:to_server,established;
uricontent:"/ForumAuthDetails.php
";                 nocase;
uricontent:"AuthID|3D|"; nocase;
uricontent:"union";   nocase;
uricontent:"select";  nocase;
uricontent:"from";    nocase;
uricontent:"ForumUser"; nocase;
uricontent:"where";   nocase;

```


CURRICULUM VITAE



Nama : Khairul Anam
 Tempat Tanggal Lahir : Pamekasan, 8 Mei 1986
 Nama Bapak / Pekerjaan : Buasan / Wiraswasta
 Nama Ibu / Pekerjaan : Hosniyah / Ibu Rumah Tangga
 Alamat Rumah : Desa Poto'an Daya I, Kecamatan Palengaan,
 Kabupaten Pamekasan Madura.
 Alamat di Yogya : Papringan Gang Ori 2 No 8D Depok Sleman
 Yogyakarta 55281.
 No HP : 085643751665
 Email : aroel_ezain@yahoo.co.id, khairul.ku@gmail.com
 Riwayat Pendidikan
 1993-1999 : SD Poto'an Daya I Palengaan Pamekasan Madura
 1999-2003 : MTs. Darul Ulum I Banyuwangor Pamekasan
 2003-2005 : MA Darul Ulum I Banyuwangor Pamekasan
 2005-2011 : Program Studi Teknik Informatika Fakultas
 Sains dan Teknologi Universitas Islam Negeri
 Sunan Kalijaga Yogyakarta