

]HackingTeam[

# Remote Control System

## Technical Requirements

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# 1 Objectives

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The present document details requirements needed for RCS installation.

The document includes:

- RCS architecture high level overview
- RCS hardware specifications
- RCS network configuration

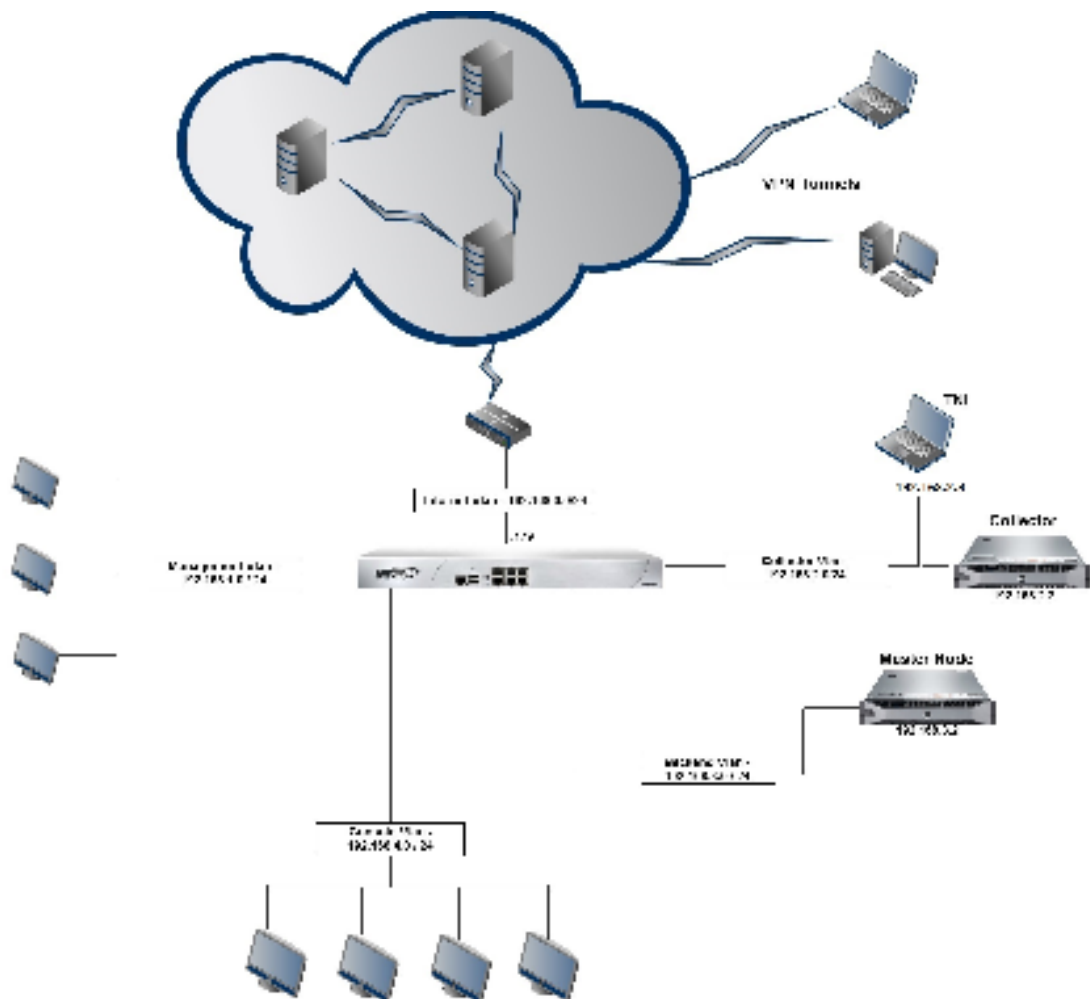
## 2 Environment

### 2.1 Requirements

The following system requirements must be present:

1. Rack cabinet
2. KVM or separated items (monitor + USB keyboard + USB mouse)
3. UPS and power strips to cover all production systems
4. Network switch and Firewall as specified in the Hardware Requirements section
5. Wired high-speed Internet connection with Static public IP Address; bandwidth of 4Mbit download/1 Mbit upload is recommended

### 2.2 Network Diagram



## 3 Hardware Requirements

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### 3.1 RCS Master Node

#### 3.1.1 System Requirements

The following must be present:

1. 96 GB of RAM minimum
2. 2 x 146GB SAS HD RAID1 (for O.S.)
3. 4 x 600GB SAS HD RAID 10 (for data)
4. Windows Server 2008 R2 SP1 Enterprise Edition 64 Bit (English)

#### 3.1.2 Disk Configuration

The following table details how disks must be configured:

Qty	Disk	RAID	Partitioning	Notes
2	146 GB	RAID 1	NTFS, single partition	Install O.S. here
4	600 GB	RAID 10	NTFS, single partition	Mount as C:\RCS

#### 3.1.3 Suggested Hardware Specifications

Below you can find a recommended hardware configuration for RCS Master Node.

Dell PowerEdge R720
<b>CPU</b> : Intel Xeon E5-2660 2.20Ghz, 20MB Cache
<b>RAM</b> : 12 x 8GB RDIMM, 1600Mhz
<b>HD (OS)</b> : 2 x 146GB SAS 6Gbps 15k 2.5" HD Hot Plug (RAID1)
<b>HD (Data)</b> : 4 x 600GB SAS 6Gbps 10k 2.5" HD Hot Plug (RAID10)
<b>RAID</b> : PERC H710p Integrated RAID Controller
<b>Network</b> : Broadcom 5720 QP 1Gb Network Card
<b>Optical</b> : 16X DVD+/-RW Drive SATA

#### 3.1.4 Additional Configurations

Enable the NTP Synchronization towards the NTP server on the RCS Collector.

## 3.2 RCS Shard

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**NOTE:** This is an optional module and can be skipped according to customer's license.

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### 3.2.1 System Requirements

The following must be present according to the purchased license:

1. 96 GB of RAM minimum
2. 2 x 146GB SAS HD RAID1 (for O.S.)
3. 4 x 600GB SAS HD RAID 10 (for data)
4. Windows Server 2008 R2 SP1 Enterprise Edition 64 Bit (English)

### 3.2.2 Disk Configuration

The following table details how disks must be configured:

Qty	Disk	RAID	Partitioning	Notes
2	146 GB	RAID 1	NTFS, single partition	Install O.S. here
4	600 GB	RAID 10	NTFS, single partition	Mount as C:\RCS

### 3.2.3 Suggested Hardware Specification

Below there is a recommended hardware configuration for RCS Shard.

Dell PowerEdge R720
<b>CPU</b> : Intel Xeon E5-2660 2.20Ghz, 20MB Cache
<b>RAM</b> : 12 x 8GB RDIMM, 1600Mhz
<b>HD (OS)</b> : 2 x 146GB SAS 6Gbps 15k 2.5" HD Hot Plug (RAID1)
<b>HD (Data)</b> : 4 x 600GB SAS 6Gbps 10k 2.5" HD Hot Plug (RAID10)
<b>RAID</b> : PERC H710p Integrated RAID Controller
<b>Network</b> : 2 x Broadcom 5720 QP 1Gb Network Card
<b>Optical</b> : 16X DVD+/-RW Drive SATA

### 3.2.4 Additional Configurations

Enable the NTP Synchronization towards the NTP server on the RCS Collector.

## 3.3 RCS Collector

### 3.3.1 System Requirements

The following must be present:

1. 16 GB of RAM minimum
2. 2 x 300GB SAS HD RAID1 (for O.S. and data)
3. Windows Server 2008 R2 SP1 Standard Edition (or above) 64 Bit (English)

### 3.3.2 Disk Configuration

The following table details how disks must be configured:

Qty	Disk	RAID	Partitioning	Notes
2	300 GB	RAID 1	NTFS, single partition	Install O.S. here

### 3.3.3 Suggested Hardware Specifications

Below you can find a recommended hardware configuration for RCS Collector.

Dell PowerEdge R210 II
<b>CPU</b> : Intel Xeon E3-1230 3.20Ghz, 8MB Cache
<b>RAM</b> : 2 x 8GB DDR3, 1333Mhz
<b>HD (OS)</b> : 2 x 300GB SAS 6Gbps 15k 2.5" HD Hot Plug (RAID1)
<b>RAID</b> : PERC H200 RAID Controller
<b>Network</b> : 2 x Broadcom 5720 QP 1Gb Network Card
<b>Optical</b> : 16X DVD+/-RW Drive SATA

### 3.3.4 Additional Configurations

Enable the NTP Synchronization towards the closest public NTP server.



## 3.4 RCS Anonymizer

### 3.4.1 System Requirements

The following must be present:

1. 256 MB of RAM minimum
2. 10GB HD
3. Linux CentOS 6 32 Bit
4. Static public IP address
5. 2 Mbit/s Internet connection

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**NOTE:** Due to company policies and to protect customer's confidentiality requirements, Hacking Team is not allowed to provide accounts on VPS services.

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### 3.4.2 Suggested VPS List

The following table list examples of possible VPS providers:

Name	Web site	Locations
Linode	<a href="http://www.linode.com">http://www.linode.com</a>	USA and many other locations
Host Europe	<a href="http://www.hosteurope.de">http://www.hosteurope.de</a>	Germany and other locations

## 3.5 RCS Console

**NOTE:** A VPN connection is suggested when connecting to RCS Master Node from external network.

### 3.5.1 System Requirements

The following must be present:

1. 4 GB of RAM minimum
2. 320GB SATA HD
3. Windows or OS X
4. Display capable of 1280x800 pixel minimum resolution

### 3.5.2 Suggested Hardware Specifications

Below you can find a recommended hardware configuration for RCS Console.

Dell Latitude 15 – Series 3000
<b>CPU</b> : Intel Core i3-3120M 2.50Ghz, 3MB Cache
<b>RAM</b> : 1 x 4GB DDR3, 1600Mhz
<b>HD</b> : 1 x 320GB SATA 7.2k 2.5" HD
<b>Video</b> : Intel HD Graphics 4000
<b>Network</b> : 1 x 1Gb Network Card, 1 x Dell Wireless 1901 802.11 a/b/g/n
<b>Optical</b> : 8X DVD+/-RW Drive SATA

### 3.5.3 Additional Configurations

Adobe Air runtime must be installed on the system.

## 3.6 Backup

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**NOTE:** The backup unit is a SAN (Storage Area Network) or a NAS (Network Attached Storage) device that is responsible for all RCS data backup.

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### 3.6.1 System Requirements

The following must be present:

1. 64 GB of RAM minimum
2. 6 x 1TB SAS HD RAID6 (for data)

### 3.6.2 Disk Configuration

The following table details how disks must be configured:

Qty	Disk	RAID	Partitioning	Notes
6	1 TB	RAID 6	NTFS, single partition	Mount as Z:\

### 3.6.3 Suggested Hardware Specifications

Below you can find a recommended hardware configuration for backup unit.

<b>DELL PowerVault MD3200i</b>
<b>HD : 6 x 1TB SAS 6Gbps 7.2k HD Hot Plug</b>

## 3.7 Firewall

Availability of the firewall is mandatory for the delivery.

### 3.7.1 System Requirements

The following must be present:

1. Support for VPN connection client to site (SSL or IPSEC)
2. Stateful throughput of 1 Gbps
3. IMIX performance of 235 Mbps
4. Maximum connections of 225000
5. VPN throughput of 300 Mbps

The availability of a firewall with such characteristics dedicated to the RCS installation is compulsory for the completion of the installation.

### 3.7.2 Suggested Hardware Specifications

Below you can find a recommended hardware configuration for firewall.

SonicWall NSA 3600 Network Security Appliance
<b>IPSEC VPN Connections Client to Site:</b> Up to 1000
<b>Firewall inspection throughput:</b> 3.4 Gbps
<b>IMIX Performance:</b> 900 Mbps
<b>Maximum Connections:</b> 325000
<b>VPN Throughput:</b> 1.5 Gbps

Or

SonicWall NSA 2600 Network Security Appliance
<b>IPSEC VPN Connections Client to Site:</b> Up to 250
<b>Firewall inspection throughput:</b> 1.9 Gbps
<b>IMIX Performance:</b> 600 Mbps
<b>Maximum Connections:</b> 225000
<b>VPN Throughput:</b> 1.1 Gbps

## 3.8 Switch

### 3.8.1 System Requirements

The following must be present:

1. 24 ports
2. Support for 10/100/1000 Mbps

### 3.8.2 Suggested Hardware Specifications

Below you can find a recommended hardware configuration for the switch.

Dell PowerConnect 2800
<b>Ports</b> : 24 at least
<b>Speed</b> : 10/100/1000 Mbps

## 4 Network Configuration

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### 4.1 VLANs Configuration on Switch

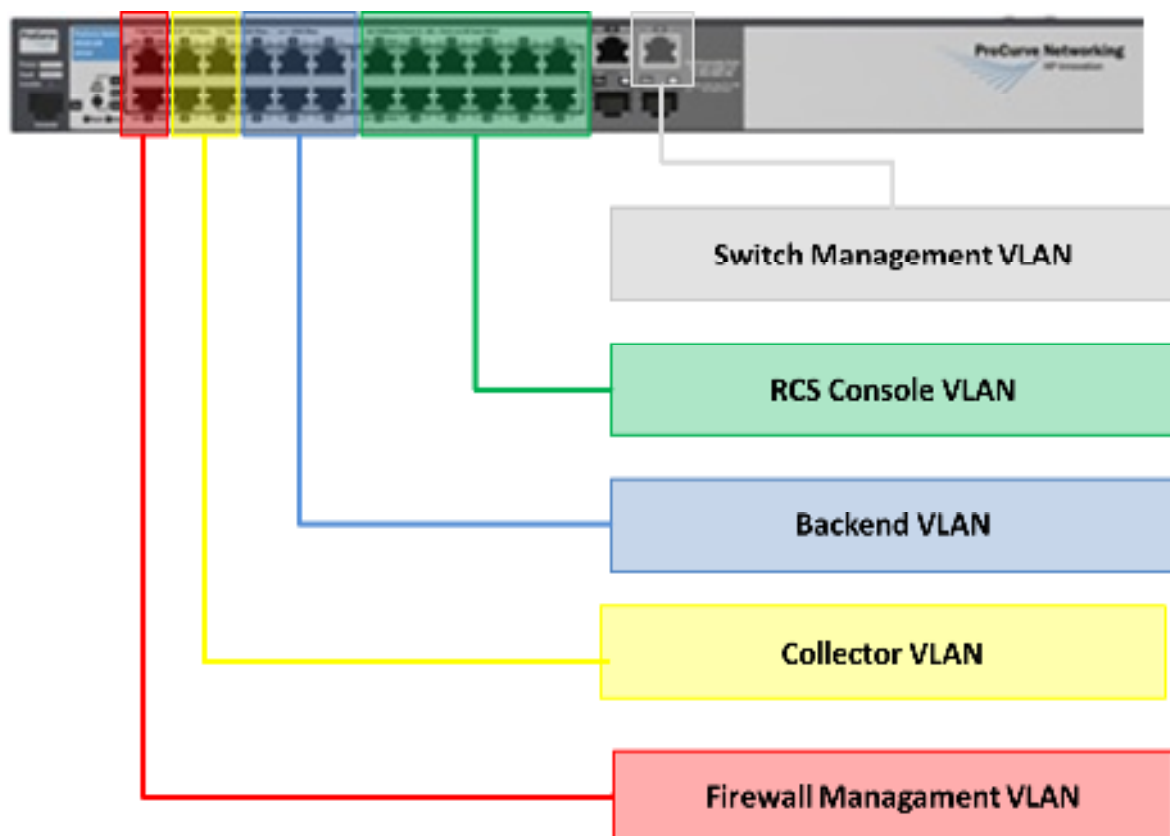
The RCS environment requires 5 VLANs on a switch.

These VLANs create different logical LAN for each RCS component and for devices management.

On the switch you can create there VLANs:

- Backend VLAN
- Collector VLAN
- Console VLAN
- Firewall Management VLAN
- Switch Management VLAN

The assigned ports on the switch for each VLAN could be 2 or more, depending on the architecture.



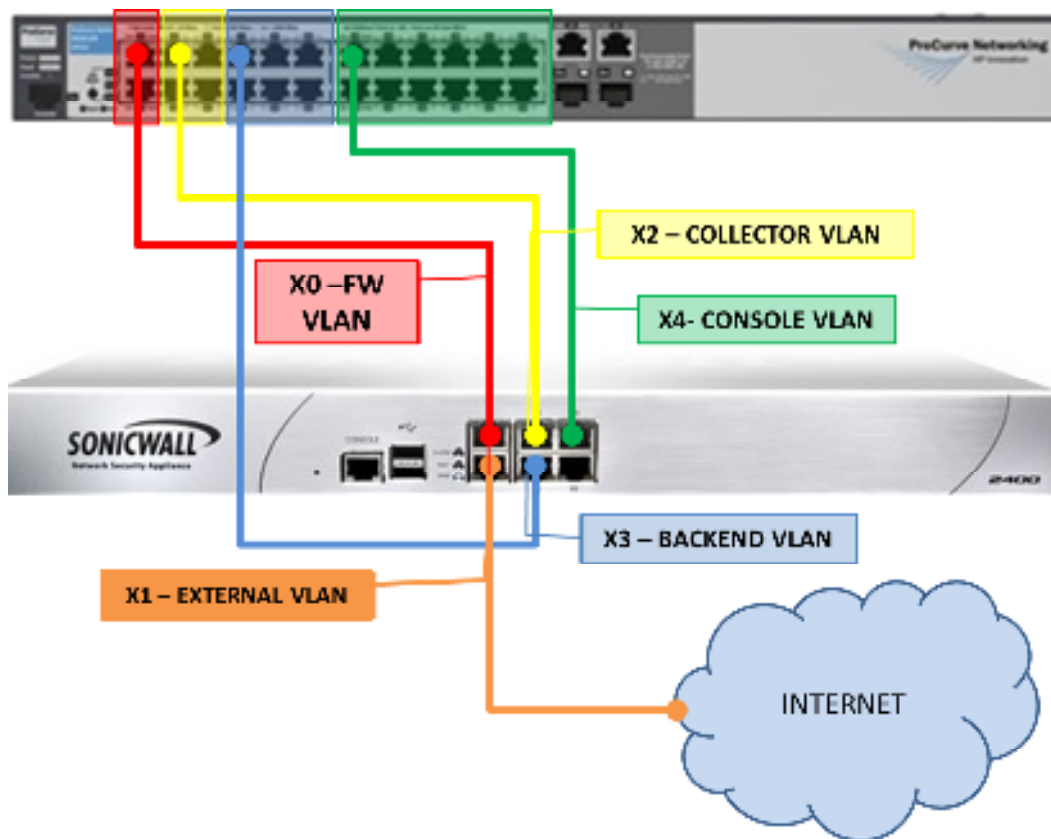
## 4.2 Firewall → Switch Interconnection

The firewall is used to regulate communication between VLANs.

Five zones are configured on the firewall:

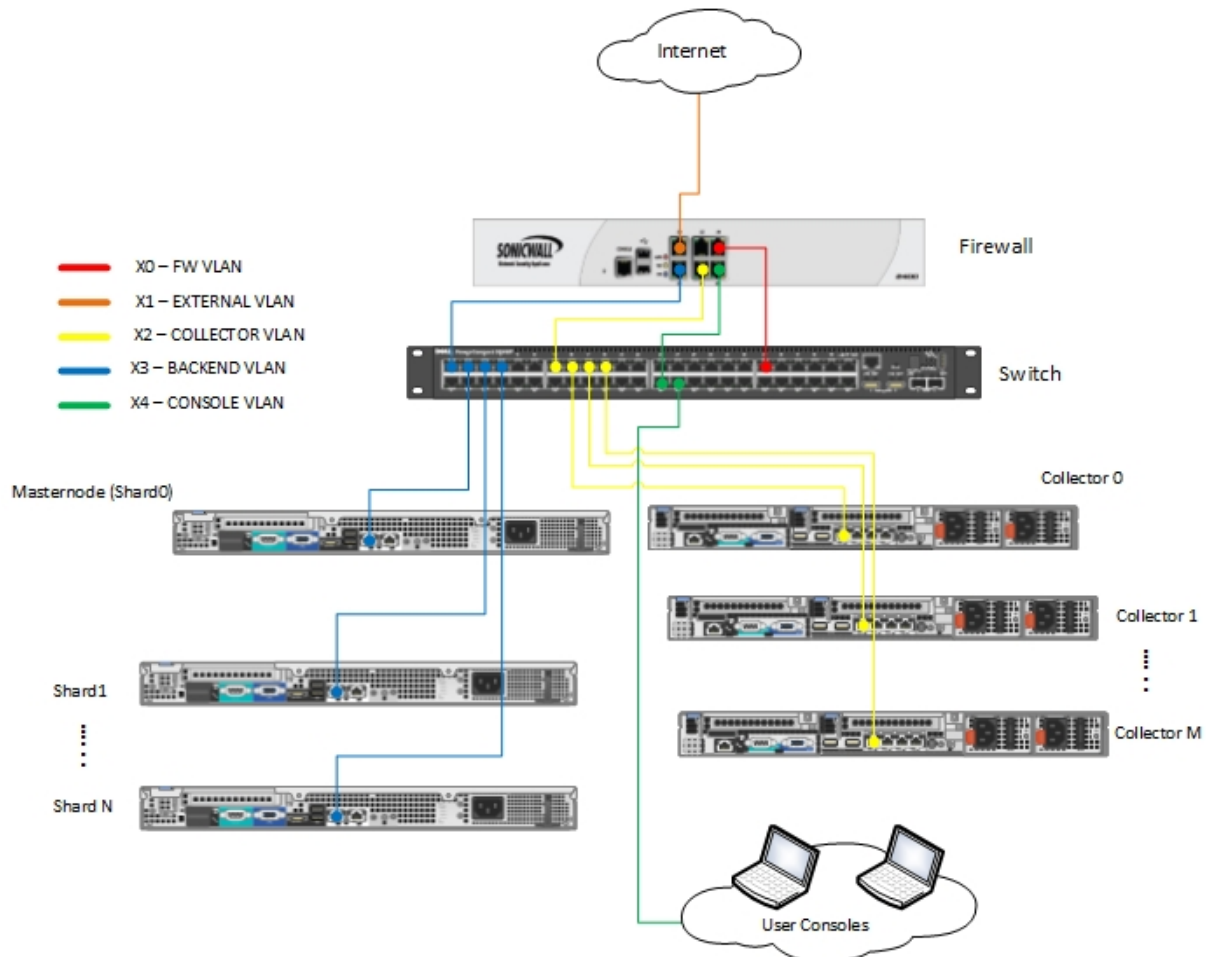
- Backend VLAN
- Collector VLAN
- Console VLAN
- Firewall Management VLAN
- External VLAN (Internet)

Zones on the firewall and VLANs on the switch must be connected according to the picture below.



## 4.3 Hardware Interconnection Schema

Following is represented the whole system architecture with its interconnections. As described in the picture, final infrastructure may include additional RCS Collectors and RCS Shards.





## 4.4 Firewall Rules Setup

The following rules must be implemented on the firewall to allow RCS works correctly.

Table's colors reflect the colors used in previous pictures.

Source	Destination	Service	Protocol	Port
Backend	Any	DNS	UDP	53
Backend	Any	NTP	UDP	123
Backend	Collector	HTTP	TCP	80
Console	Any	HTTPS	TCP	443
Console	Any	HTTP	TCP	80
Console	Any	DNS	UDP	53
Console	Any	ICMP	ICMP	
Console	Collector	RDP	TCP	3389
Console	Backend	RDP	TCP	3389
Console	Backend	HTTPS	TCP	443
Console	Backend	TCP_444	TCP	444
Collector	Any	DNS	UDP	53
Collector	Any	HTTP	TCP	80
Collector	Any	HTTPS	TCP	443
Collector	Any	NTP	UDP	123
Collector	TNI	HTTPS	TCP	443
Collector	Backend	HTTPS	TCP	443
Collector	Backend	TCP_442	TCP	442
Anonymizer(s)	Collector	HTTP	TCP	80