

Team Exercise #4

Integration

You have decided to go into business for yourself, selling the latest techno-widgets.

- Please choose a company name. All of your machine names must be clearly identified with your company name.

Because the business world is quite competitive, you have decided to form a strategic partnership with one other company.

- Please choose your company's strategic partner.
- Your partner will have access to some of your company's documents that are not open to the general public.

Your job is to begin developing your new company's IT infrastructure. Your business requirements are the following:

- We need a functioning web page.
 - The main web page must be accessible to everyone.
 - Because we prefer working at home to working in the office, we need the ability to update the web site from arbitrary machines.
- Our developers group needs to create a number of applications.
 - They will need secure remote access, and the ability to compile and test code. We do not know what machines they will be using when they access our development machines.
 - The development machines will need access to a functioning compiler. They will also need access to a web server and a database server for testing purposes.
 - There are three developers in our group.
- Our product design group will be working closely with our partner company.
 - We need a way to securely share schematics with our partner company.
 - If these schematics become public however, our company will lose quite a bit of money.
 - We do not know the precise IP addresses of our partner company, though we are sure they will be on the subnet 10.0.1.0/24.
 - Once a product is sold to the public, we will need to provide product support information to the public. This will include various large downloadable files.
- We will need to create and manage two databases for the company.
 - *Database #1: Clients.*
 - The clients database will contain information about all of our clients, including:
 - Names
 - Addresses
 - Credit card numbers
 - Access to this database needs to be maximally protected.
 - Access to the database needs to be given to various automated scripts that will eventually run on our webserver. These scripts

will allow users to enter and view their information, and later to place orders.

- Our developers are creating automated administrative tools to let us work with the database. These scripts need complete access to the database, but will only be run from inside our network.
- The database should be populated with a reasonable set of test data before the start of the exercise.
- *Database #2: Products:*
 - This database contains a list of all of our products, including
 - Name
 - Product code
 - List price
 - Manufacturing cost
 - This is data that we do not want made public. However, we will be sharing this information with our partner company. They will need access to this database.
 - Access to the database needs to be given to various automated scripts that will eventually run on our webserver. These scripts will allow users to enter and view their information, and later to place orders.
 - Our developers are creating automated administrative tools to let us work with the database. These scripts need complete access to the database, but will only be run from inside our network.
 - The database should be populated with a reasonable set of test data before the start of the exercise.
- You should develop appropriate applications to allow users to remotely access the necessary databases. These can be pieces of stand-alone code (written in *e.g.* C, C++, Perl, Python) or a complete web application.
- We have a new sales office and a manufacturing center.
 - Each sales office needs a network of office PC's, (say three for simplicity).
 - Each sales office machine must run MS Windows. It is used as the office PC of just one person, who needs Administrator rights to run some of the proprietary software that has been developed.
 - Each PC must have read access to the products database.
 - The sales office needs a functioning file server, with access limited to the office PC's.
 - You are encouraged to set up a domain controller for the MS Windows network.
 - The manufacturing center also needs a network of office PC's (say three again.)
 - The only difference between the sales offices and the manufacturing office is that the manufacturing office needs write access as well as read access to the products database.
- We also need to set up and create an appropriate defensive infrastructure, including logging server(s), network monitoring (*e.g.* ntop, ethereal) and intrusion detection systems.

As a preliminary step, you are to develop a plan for your complete network infrastructure, and present it to the CEO (that's me) by Wednesday April 29. It should detail how you plan to meet all of these requirements, together with corresponding network diagrams. It will also include all the necessary passwords and authentication information for the network.

The more realistic the network, the more credit will be given, with the caveat that less complex but team-written solutions will be given preference over more complex off-the-shelf solutions.