# Security zones

In this section, we'll discuss a type of
network security feature called a security zone.
Security zones are a segment of a network
that protects the internal network from the internet.
They are a part of a security technique
called network segmentation
that divides the network into segments.
Each network segment has
its own access permissions and security rules.
Security zones control who can
access different segments of a network.
Security zones act as a barrier to internal networks,
maintain privacy within corporate groups,
and prevent issues from spreading to the whole network.
One example of network segmentation is
a hotel that offers free public Wi-Fi.
The unsecured guest network is kept separate from
another encrypted network used by the hotel staff.

Additionally, an organization's
network can be divided into
subnetworks, or subnets, to
maintain privacy for each department in a organization.
For instance, at a university,
there may be a faculty subnet
and a separate students subnet.
If there is contamination on the student's subnet,
network administrators can isolate it and
keep the rest of the network free from contamination.

An organization's network is classified into
two types of security zones. First,
there's the uncontrolled zone,
which is any network outside of
the organization's control, like the internet.
Then, there's the controlled zone,
which is a subnet that protects
the internal network from the uncontrolled zone.
There are several types of
networks within the controlled zone.
On the outer layer is the demilitarized zone,

or DMZ, which contains
public-facing services that can access the internet.
This includes web servers,
proxy servers that host websites for the public,
and DNS servers that provide
IP addresses for internet users.
It also includes email and file
servers that handle external communications.
The DMZ acts as
a network perimeter to the internal network.
The internal network contains private servers and
data that the organization needs to protect.
Inside the internal network is
another zone called the restricted zone.
The restricted zone protects
highly confidential information that is only
accessible to employees with certain privileges.

Now, let's try to picture these security zones.
Ideally, the DMZ is situated between
two firewalls. One of them
filters traffic outside the DMZ,
and one of them filters traffic
entering the internal network.
This protects the internal network
with several lines of defense.
If there's a restricted zone,
that too would be protected with
another firewall. This way,
attacks that penetrate into
the DMZ network cannot spread to the internal network,
and attacks that penetrate
the internal network cannot access the restricted zone.
As a security analyst,
you may be responsible for regulating
access control policies on these firewalls.
Security teams can control traffic reaching
the DMZ and the internal network
by restricting IPs and ports.
For example, an analyst may ensure that
only HTTPS traffic is
allowed to access web servers in the DMZ.

Security zones are
an important part of securing networks,
especially in large organizations.
Understanding how they are used is

essential for all security analysts.
Coming up, we'll learn about securing internal networks.

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