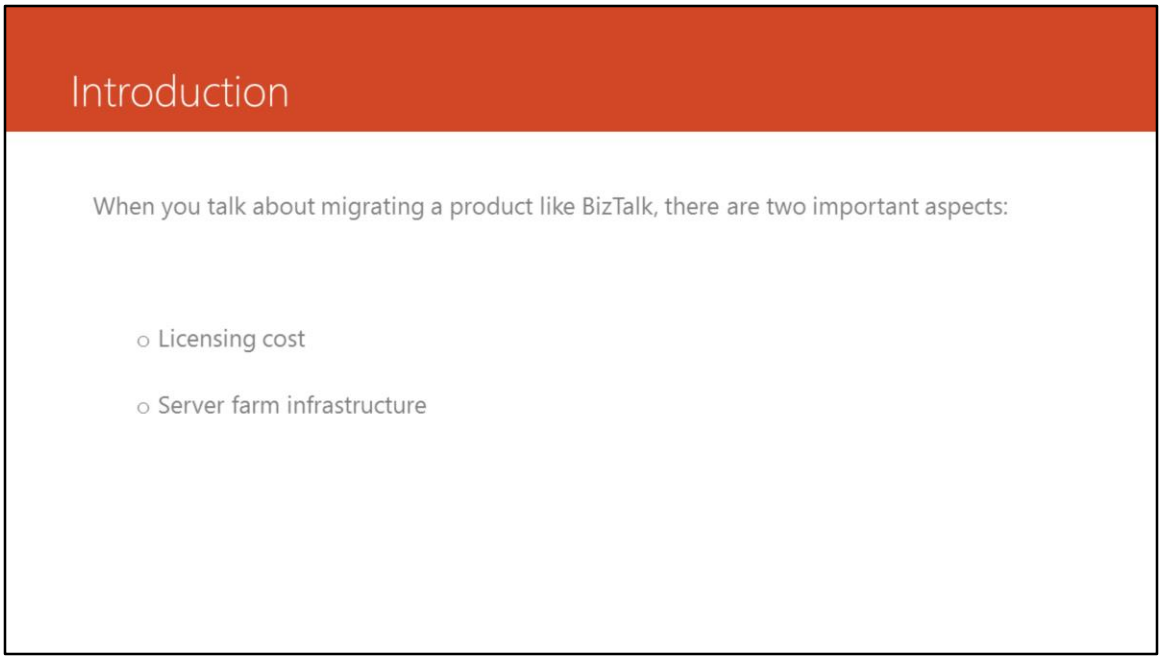
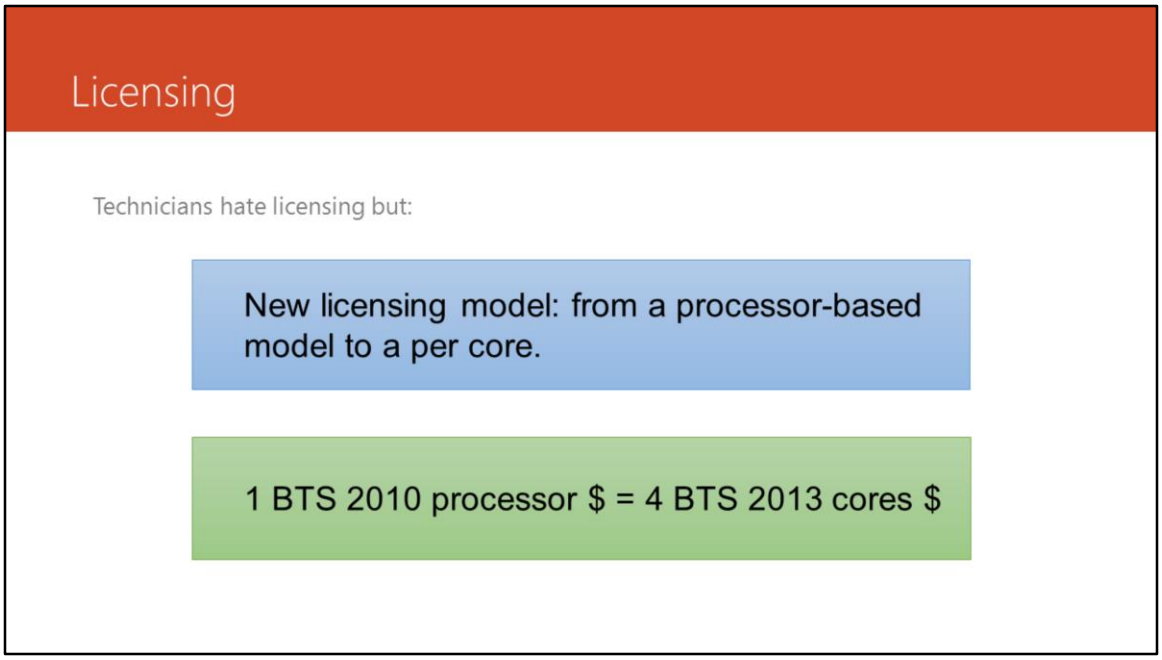


In the following slides we will see some critical issues related to migration to BizTalk 2013.

It is natural that, after evaluated all the benefits of a migration to a new version, the first question is: how much does it cost?

In this case, other than development activities, costs are related to the licensing and the licensing costs are strictly bound to the server infrastructure.



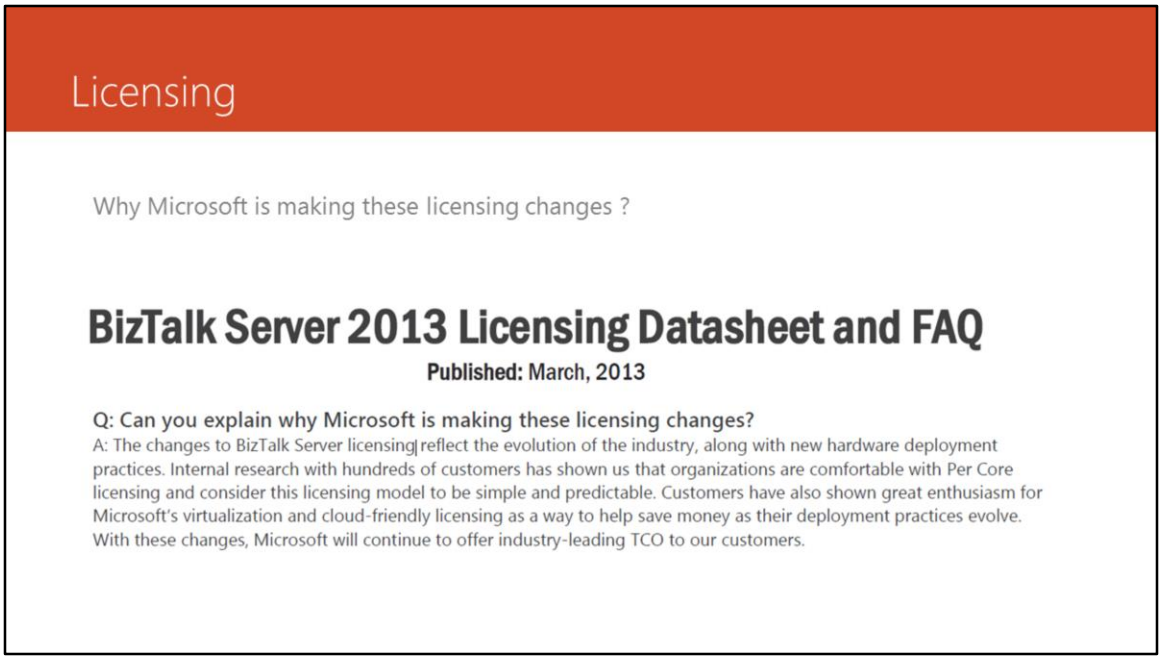
Typically, the technicians hate to talk about licensing, but it is very important to take in mind at least two things in order to design the new server infrastructure.

The first one is that, with the 2013 version release, BizTalk Server licensing is moving from a processor-based model to a per core model.

The second one is that the cost of 1 BizTalk 2010 processor is equal to the cost of 4 BizTalk 2013 cores.

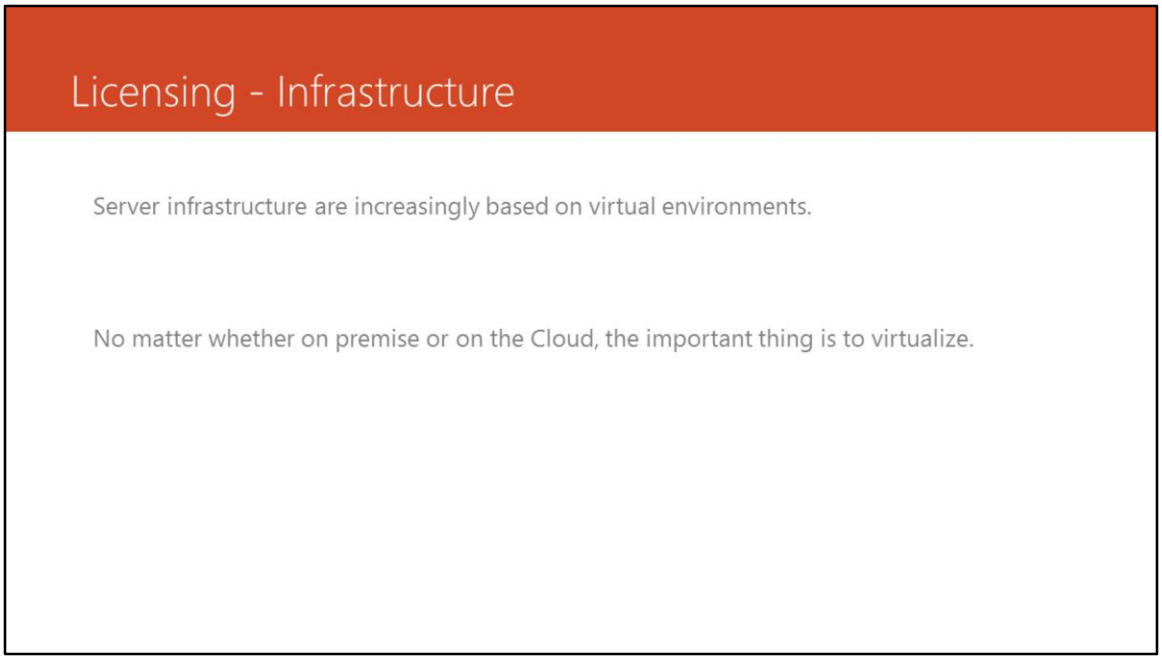
In addition, you have to assign at least 4 cores on a single server.

This is very important because on this basis you can make technical considerations.



Many clients ask me why Microsoft has made these changes. The answer is «The changes to BizTalk Server licensing reflect the evolution of the industry,…»

Seems a commercial slogan but, not in this case.



If you go inside the server farms, you will find that, from the infrastructure point of view, there are many changes compared to some years ago.

Because for economics or system management reasons the server farm are more and more based on virtual environments.

Today, the virtualization in not longer an option but a fact.

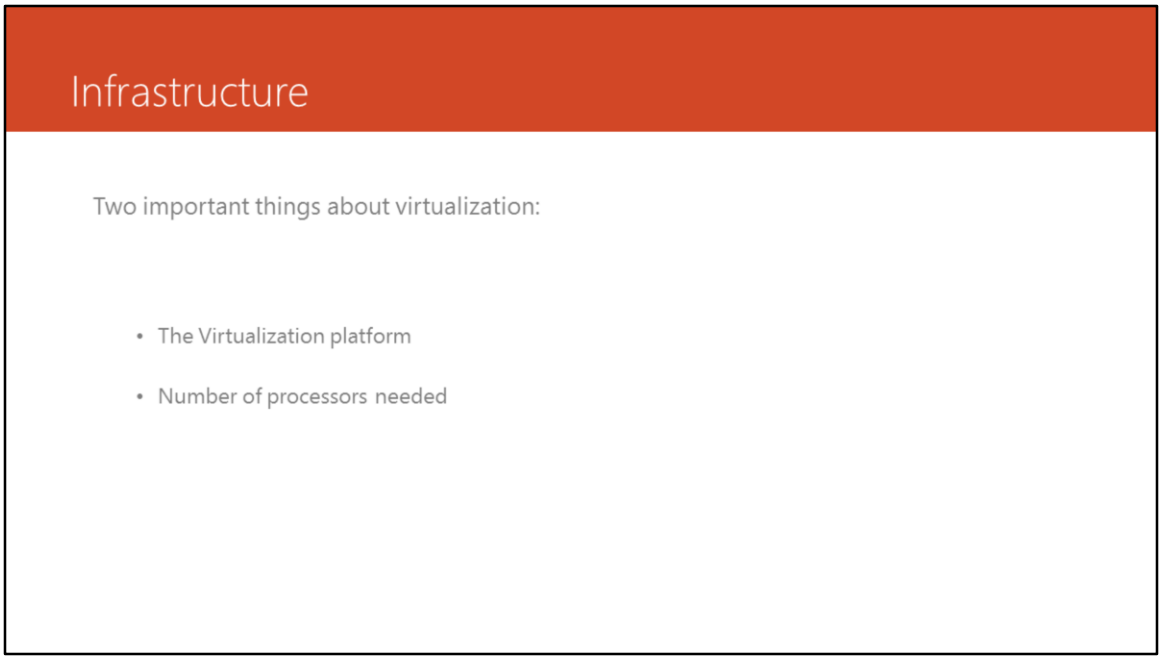
Licensing - Infrastructure

The licensing influence the infrastructure design.

Design a server infrastructure only after understanding the licensing model.

So the industry changes influence the licensing model such as the licensing influences more than ever our infrastructure design.

Because the licensing model give us detailed specifications, and this requires more effort during the design activities.



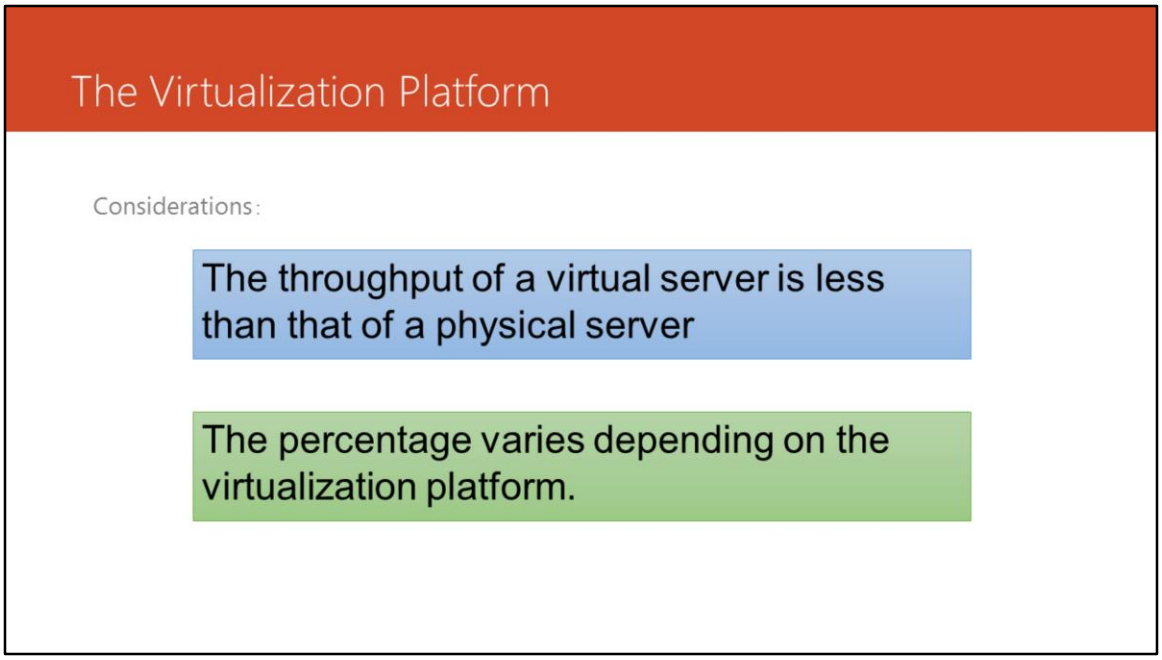
We talked about how the licensing follow the trend to virtualize server farm.

So now we have to understand the important factors related to virtualization

When we going to virtualize, there are two important things:

1) The virtualization platform

2) how much processor we are using in the current environment

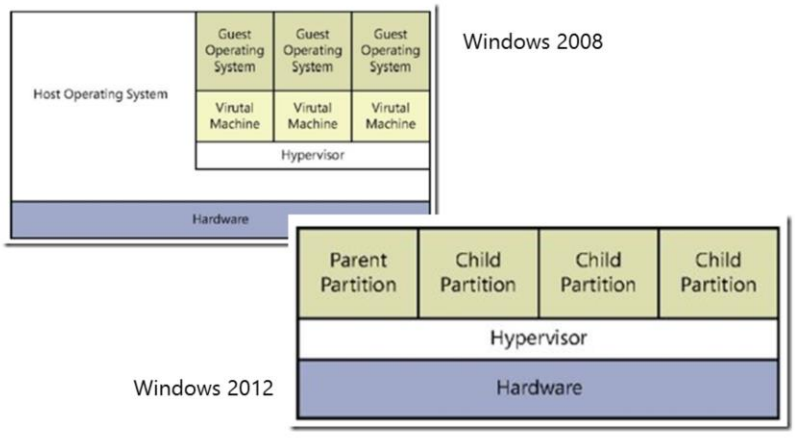


It is important to take in mind that the throughput, in term of Messaging or Documents processed per seconds, of a virtual server is less than Server installed on physical hardware.

The difference depends also on the platform. Not only but also.

http://msdn.microsoft.com/en-US/library/dd722834(v=BTS.10).Aspx

Virtualization Platform



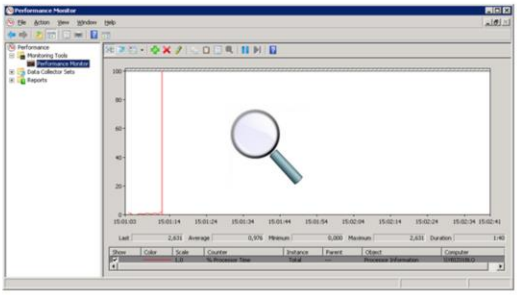
For example Hyper-V 2008 is much different from Hyper-V 2012 because is changed the virtualization type from type 2 to type 1, and there are many difference about the performance.

As you can see in this slide, there isn't the host operating system layer between the virtual machines and the hardware.

Host operating system runs inside the parent partition and the virtual machines run into the child partition.

How many processors ?

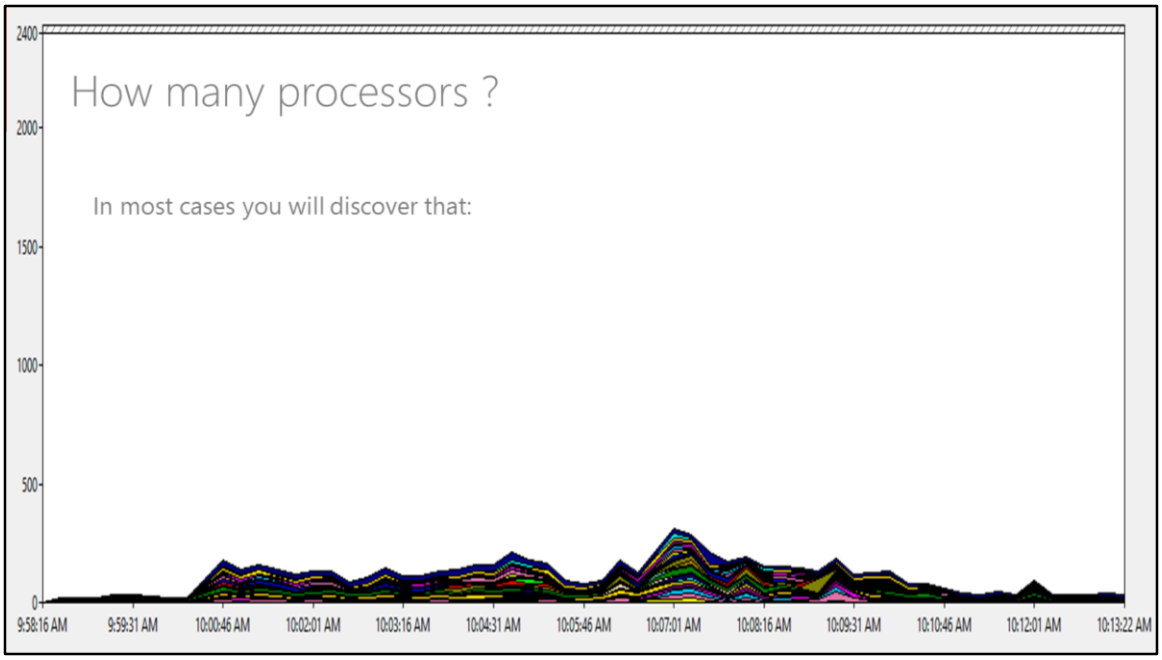
Take a trace using Performance Monitor or Performance Analysis of Logs (PAL) Tool



How many processors ? This is very important because we have to know how many cores we or the client has to pay.

To understand this it is necessary to do a performance analysis of the current production systems.

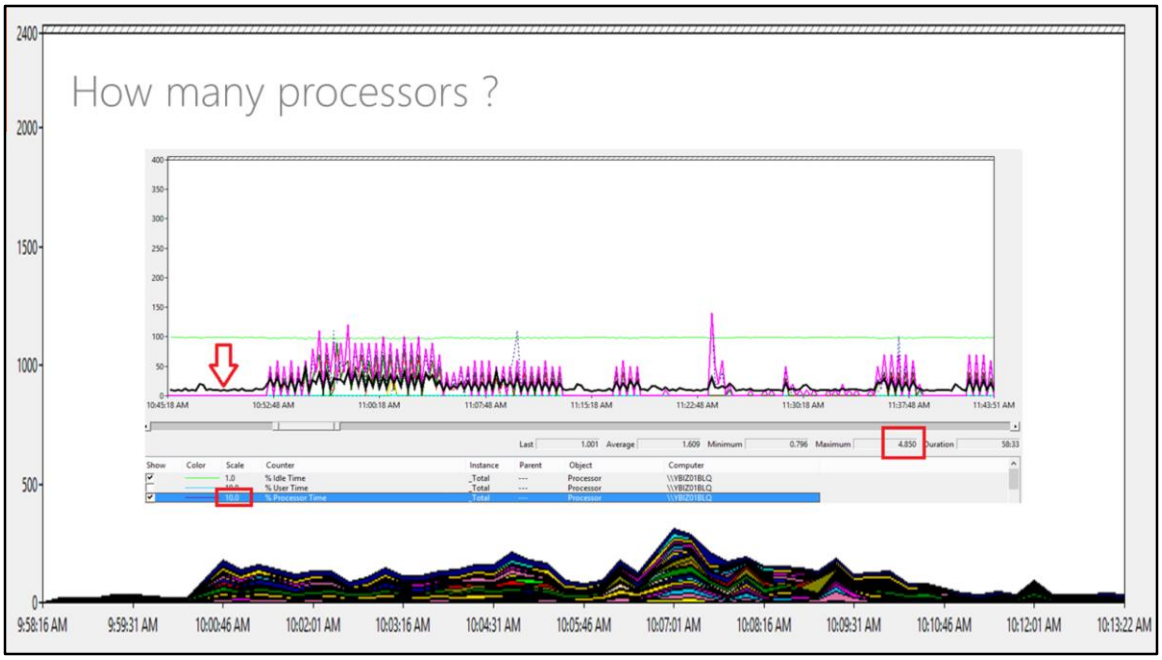
You can use the Windows Performance Monitor or any other performance analysis tool.



Typically, actually not always, you will find that the BizTalk's processors wait for communication times with the MessageBox and the external systems.

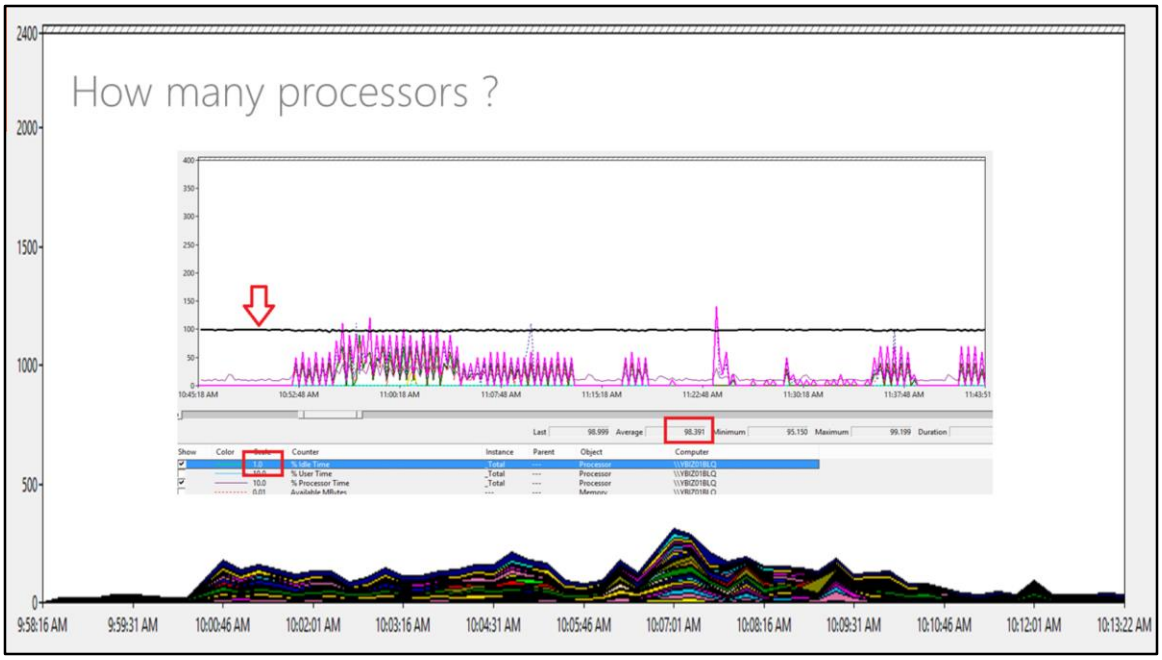
In many cases you can have the result showed in this slide.

This chart shows the percentage of processors time overlapped. As you can see the processors are underused.



This chart shows the total percentage of processors time.

Note that the maximum value is about 5%. Very low considering this performance analysis result was taken during a peak of load.

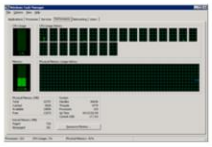


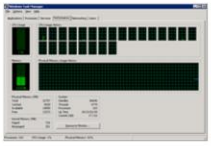
This chart shows the percentage of idle time.

When you get an high percentage of idle time, typically processors wait for something, and this case you can lower the number of cores.

Real Case

$$2\ x\ Servers \ *$$
$$2\ x\ CPU\ 12\text{–}Cores \ =$$
$$4\ CPU \ \leftrightarrow \ 48\ Cores$$





4 CPU $ = 16 Cores $

Future 48 Cores $ vs Actual 16 Cores $

This is a real case !

My customer has a farm composed by two physical servers with 2 processors with 12 cores each one for a total of 48 cores.

In this scenario, migrating as-is, he would pay three times as much.

Real Case

Trace results:

- The traces showed an average utilization of the processor of 5%.

The performance analysis result showed that 16 cores were enough, so we migrated to BizTalk 2013 in a virtual environment without the client would pay additional costs