**From:** Vinod Valloppillil (Exchange)
**Sent:** Thu, 7/8/1999 4:11 PM
**To:** Jim Allchin (Exchange)
**Subject:** RE: Windows OS structure and Vino/Exokernel

the docs are on: file:\\vinodv\secure$\vino.htm

MarkL's (short) analysis:

> I read it over. It is much more than drivers in user-mode. They have a whole slew of things
> they put up there with mini drivers in the kernel to coordinate sharing and redirection. You
> should read through the papers. It is an interesting approach for specialized systems. I
> struggle to see how we could make use of any of their ideas

-----Original Message-----
**From:** Jim Allchin (Exchange)
**Sent:** Friday, July 02, 1999 8 51 AM
**To:** Vinod Valloppillil (Exchange)
**Subject:** FW: Windows OS structure and Vino/Exokernel

This is old mail. I am cleaning house.

Do you know if anything was done about this?

Do you have the papers?

thanks,
jim

-----Original Message-----
**From:** Bill Gates
**Sent:** Wednesday, May 12, 1999 11 06 AM
**To:** Jim Allchin (Exchange); Mark Lucovsky; Rick Rashid; Lou Perazzoli
**Cc:** Eric Rudder; Butler Lampson; Brian Valentine (Exchange)
**Subject:** Windows OS structure and Vino/Exokernel

I had a number of paper for think week on ExoKernel and VINO

The performance, simplicity and extensibility they suggested they get with these approaches
caught my eye. They say they are going to take their approach and graft it to Linux in some way
since that is the simplest way for them to get their work into popular use. If it did speed up Linux
that would be pretty scary.

Unfortunately I am not in a position to really study this stuff and figure out how we might
transform the Windows source code over the next 4 years to take this kind of approach.

I would love to have you study this stuff in the most open minded way possible and think about
whether we need to learn from it.

One position might be that there are things we could do along these lines with the current source.
Another might be that we need to start something new that is based on these approaches and
COM+ and will take a long time to do.

In any case sometime in the next 60 days I would love to have some combination of
research/Windows talk about these and write up some thoughts on what opportunities it suggests
for us.