InPath™ nbxparts TECH NOTE

How to Protect Your Investment
In Your Current NBX Phone System

A Brief History of NBX and InPath

In 1998 NBX Corporation created the NBX 100 Phone System – which was the first commercially available IP PBX product. In 1999 InPath started reselling the NBX phone system nationwide. By 2000 InPath became one of the largest NBX Resellers in the United States. Since then we went on to sell, install or service over 6000 NBX installations around the world. This accounts for over 10% of the NBX phone systems ever sold. In 2009 Hewlett Packard purchased the NBX Telephony technology as part of its acquisition of 3Com Corporation. Shortly thereafter HP announced the discontinuation of support for the NBX. This included the discontinuation of hardware, service, licensing and support.

InPath remains dedicated to supporting the NBX product and invested in millions of dollars worth of NBX hardware and licenses so we could continue to support our NBX customers. We also continue to employ four experienced NBX Certified Support Engineers to provide our customers with the highest caliber of support. To purchase NBX hardware, support, licenses or support contracts you can go to InPath's NBX dedicated online store www.nbxparts.com or call toll free at (800) 884-6945 from 8am to 5pm CST (International customers can call +1 (402) 345-9200).   You can also reach us by email at info@inpath.com

NBX Reliability and Strengths

At the time it was released the in 1998 the NBX 100 was the first reliable VoIP phone systems ever built. It was built on the foundation of the VxWorks operating system that is the same operating system NASA chose for the Apollo Space program. The latest release of the NBX software (OS 6.5.21) was very reliable and we have seen almost no failures resulting from the NBX software. Unfortunately when there are problems related to the NBX Software this can be a big problem. The most common problems have to do with interoperability with the Telco. We are often able to find a "work around" – but there is

no option for a patch since the NBX software support from HP ended years ago and they are not releasing patches.

Preserving the Functionality of Your NBX Phone System

1. The most important thing that you can do to protect your investment in your NBX phone system is backup your licenses. If your hard drive crashes and you don't have a backup of your licenses your NBX will become basically worthless. You will have to replace all of your licenses that typically amounts to about half the cost of replacing your NBX with a new phone system (and much more than the value of your NBX). As systems get older hard drive failures are becoming more common *(see why NBX hard drives fail in the chart below)*. Once you make a backup of this UNIX file make sure that you store it somewhere safe and off the NBX system hard disk. (If you use InPath's Backup Services we will store your backups on a secure drive in the cloud for instant retrieval from anywhere).

2. The second most important thing you can do to protect your investment in your NBX is backup the configuration. This is not the same as the license backup although it can include the licenses as well. *(Note: You should still back up the licenses as a separate file even if included in this back up)* The configuration backup will allow you to quickly restore your system to function the way you currently have it configured. Without this you will spend hours or even days on the process of restoring your NBX and this can easily cost well over a thousand dollars. Again, once you make a backup of this Linux file make sure that you store it somewhere safe (if you *backup with InPath* we will store you backups on secure drive in the cloud for quick retrieval from anywhere).

3. The third thing you can do to backup your NBX is keep a "Field Replaceable Hard Drive" (NBX Corporation called this an FRU – Field Replaceable Unit). Typically an "FRU" is ready to install a license and configuration backup. But, what we at InPath typically do is install a copy of your license profile and your configuration on the drive. Then, any technician who is familiar with how to replace a standard hard drive should be able to restore your NBX quickly. Otherwise, even if you have a backup you will need to order and receive an NBX compatible hard drive. A frequent question is "can't I use any hard drive to replace my NBX hard drive and the answer is "no". Believe it - we have tried. We still stock the original model drives from the original manufacturer and they are the only drives that work with the NBX.

4. The next level of backup is to have a complete backup of your "NCP" (Network Call Processor – or "Core"). For this to work you will need an NCP to match the system you have *(you must use the same NCP as the one you have in order to use the licenses).* If you buy the backup NCP from InPath we can preload it with a copy of your licenses and configuration so that the system is basically ready to go simply by plugging it in. Depending on your situation there may be some additional steps needed to restore the systems license structure.

Why do NBX Hard Drives Fail

All mechanical systems fail. This includes hard drives. The hard drives installed in NBX phone systems are rated for a 6 year MTBF (mean time between failures). Since the NBX hard drives are typically on all the time this is the equivalent of around 52,000 hours.

Hard Drive failure in general follows a "bathtub graph". That means that they start out with a high rate of failure, which is followed by a longer period of low rates of failure followed by higher rates of failure over time. This is called a "Bathtub Curve" and it is basically the mirror image of a "Bell Curve". The most common explanation for this in hard drives is that in the early stages hard drives commonly suffer "infant mortality" of units early on. This is followed by an extended period of high reliability and low incidence of failure. In the final stage you see an increased incidence of hard drive failure driven by "wear and tear". Please see the attached graph to illustrate what we mean.

https://www.quora.com/What-causes-the-bathtub-curve-failure-rate-in-hard-drives
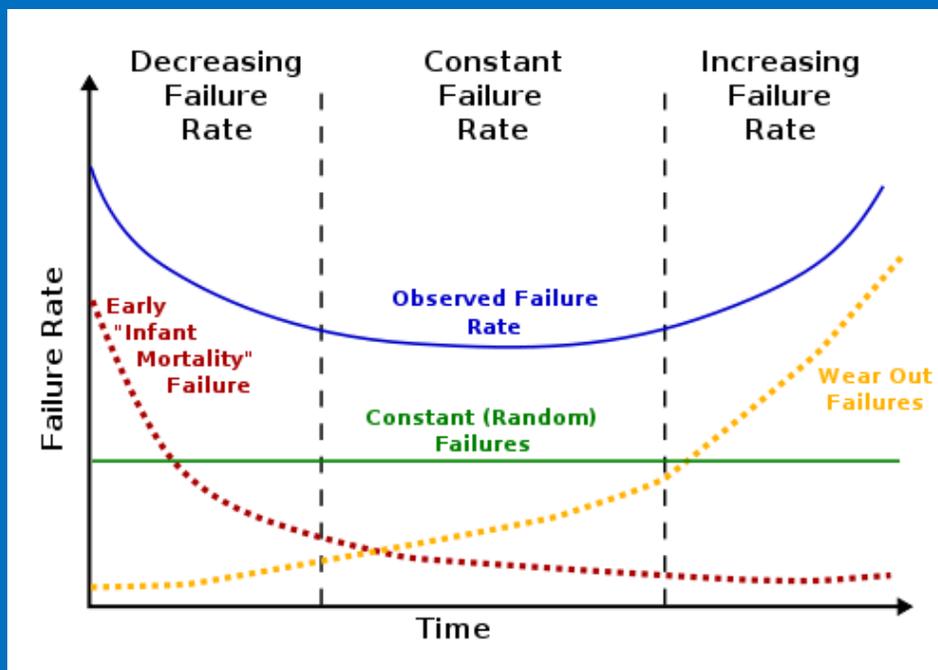
Most NBX's hard drives are well over 6 years old (the rated MTBF). HP discontinued production of NBX systems in 2009. And, in our observance the hard drives are well on their way toward "wear and tear" failures. We have seen a pronounced increase in failures in recent years. Whereas in the past hard drive failures were very unusual (outside the initial "infant mortality") now we are seeing more and more hard drive failures. This increase in hard drive failures makes it even more important to back-up your NBX Licenses and your system configuration.

NBX FAQ's

The NBX NCP's (Network Call Processors) also follow a "bathtub" curve of failures. The most common feature that fails on the NCP's are the fans. But, once the fans fail overheating can lead to overall system failure. NCP failure is still less common than Hard Drive failure, but these types of failures are also becoming increasingly more common as the NBX line ages.

1. How many different models of NBX NCP's are There?
   There are several different NBX NCP's. These include:
   1. ***NBX 100*** *(this unit includes a "cabinet" that holds extra cards and supports up to 150 devices or about 50-75 users).*
   2. ***NBX V5000*** *(this is a dedicated Network Call Processor. It does not include room for extra cards or any phone lines). The NBX V5000 supports up to 1500 devices*
   3. ***NBX V3000*** *(this NCP includes a Network Call Processor with support for up to 1500 devices and it also includes 1 FXS port and four FXO ports (for incoming phone lines). This unit can be either light blue or charcoal gray in color.*
   4. ***NBX V3001*** *is an updated version of the V3001 which is nearly identical in terms of features and capacity. It did have one additional FXS port (2 total) over the V3000. It also supports up to 1500 devices. However, it uses more "generic" components. This version of the NBX was very short lived. It had a tendency to be less reliable than the similarly functional V3000. It was as if they didn't have time to "work out the kinks" before they finished producing these. This unit only came in the charcoal gray color.*
   5. ***NBXV3001R*** *is a more rugged version of the V3001 with redundant components (like redundant power supplies and redundant hard drives). This system also supports 1500 devices and it also only came in charcoal gray like the NBX V3001.*

2. Do I have to replace my NBX NCP with the same model NCP?
   The answer is that you can run any configuration of NBX Operating System on any NBX NCP. However, the NBX 100 is limited to 150 devices – whereas the other systems can support as many 1500 devices. However, it is not possible to transfer licenses from one kind of NBX to another. So, if you want to preserve your licenses you need to upgrade to the same model NCP as your original NBX.

If you would like a free consultation on how to back up and secure your NBX phone system you can contact InPath at support@inpath.com or 800-884-6945 (from 8am to 5pm CST on regular business days Monday through Friday).