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HOWGOZIT

Happy New Year!!

And if you had not noticed last time...
WE HAVE a new Z-100 LifeLine Website and Email address! Please make note of these in your Rolodex card file or address book.

This is also my 100th issue of the Z-100 LifeLine as Editor and Publisher!!! Who would have thought that the Z-100 LifeLine would last 130 issues? Or that the Z-100 series computer would still be active 37+ years since its introduction in 1982. Wow, that's staying power!

As part of the celebration, at least on my part, I've attached a new ZBASIC program with this issue. I will not tell you what it is about, but it incorporates some aspects of ZBASIC graphics that you may not have known about, and if you are still interested in ZBASIC, you may wish to key it in, and run it.

One word of caution. This program uses all graphics and I could not find a simple font in WordPerfect that did not use proportional spacing. Therefore, the number of spaces listed in the program are hard to figure out. You may wish to use a word processing program that shows code in a separate window and uses a symbol, such as WordPerfect's diamond symbol to show the number of spaces. Nevertheless, if the graphics look out of alignment from one line to the next, simply add or delete spaces until everything lines up. I hope you enjoy the program.

With this issue I want to introduce you to a source of inexpensive test equipment – from Ebay and China. For about $15-25.00, you can now buy test equipment of all kinds that would make an excellent gift for some child interested in a career in electronics.

I remember raiding junked televisions and radios for scrap parts when I was first getting interested in electronics. The first foray into electronics was when my dad bought a small crystal radio kit - the kind where all the parts were individually mounted on small plastic strips and they were connected together by little wires with small clips on each end. Living in rural northeastern Pennsylvania, we could only tune in one station, but I found it hard to believe...

Tubes were still the rage back then. But test equipment cost a small fortune. I finally received a RCA Voltohmyst Type WV-77E vacuum tube meter for my birthday or Christmas back then, and a plug in soldering iron (the type that were used for burning pictures in blocks of wood). I enjoyed putting the meter together as a kit. And it worked! I've still got that meter and another that I bought used a few years ago.

Electronics magazines, such as *Radio Electronics*, provided many DIY (Do It Yourself) test gear projects, such as a capacitor tester, built mostly from spare parts. While in high school, I worked the summers for a television repair and cable television shop. When I left, my boss bought me a simple RCA WO-33A oscilloscope to join my growing stock of test equipment. That oscilloscope lasted until I finally retired (scrapped) it a few years ago.

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Heathkit was all the rage back then, but expensive. Following college I built the GR-900 25" color television, from the National Technical School's Master Course in Television Servicing, and another course in Computer Technology (got my first Heathkit H-88). I finally retired the television only two years ago. A Samsung 32" flat screen television now fills the hole in the Heathkit console...

But, the point is, if it had not been for the support of my parents and access to test equipment and the availability of scrap parts, I may have had an entirely different career, in who knows what.

Anyway, it is now up to us parents and grand-parents to instill a sense of adventure and curiosity in the lively impressionable young minds of today's youth.

So when my nephew in Utah asked for some help with a radio kit he was building during our trip out west, when I got home I packed up a box full of spare electronic parts, and included an inexpensive transistor tester that I had found to be quite helpful.

He loved it! He has since finished his radio kit, and it works great! Nothing spurs the mind like a successful radio kit! He is on his way.

Anyway, that little tester spurred me to look further as to what was out there on E-bay and available for less than $20.00. What I found was amazing - everything from frequency counters and generators to oscilloscopes, usually in kit form, but some already assembled...

So in the next few issues, I'll include one or two new projects in each issue, with this first being a Mega328 LCR-T4 ESR Tester and its similar, but more capable successor, the GM328 Transistor Tester and Frequency Generator.

Mega328 LCR-T4 Transistor Tester

Actually, if you go online, the description of this unit is: Mega328 LCR-T4 ESR Transistor Tester Diode Triode Capacitance SCR Inductance. This is the unit I sent to my nephew...

NPN Transistor under test...
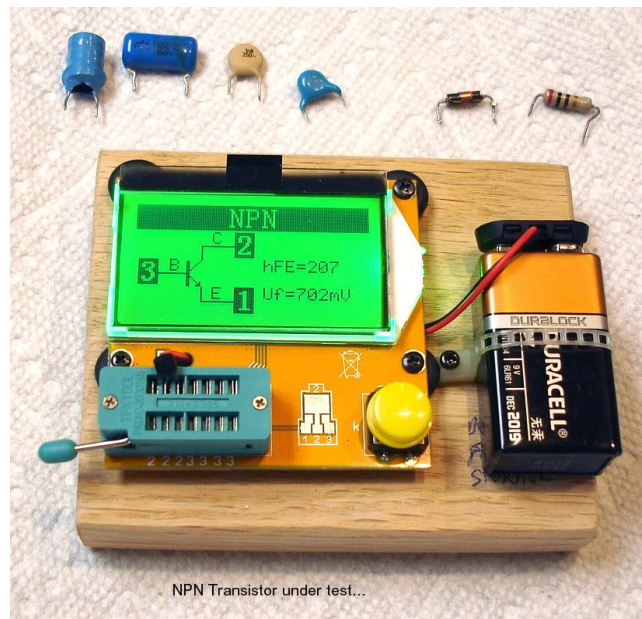
While I have a capacitor tester that I built based on a oscillator circuit, it did not have a means to measure a capacitor's ESR. So when I searched the web, I found this tester for a few bucks, but with so much more capability. And it works great.

Before pressing on, you are probably wondering what ESR is. From the web:

Practical capacitors and inductors as used in electric circuits are not ideal components with only capacitance or inductance. However, they can be treated, to a very good degree of approximation, as being ideal capacitors and inductors in series with a resistance; this resistance is defined as the equivalent series resistance (ESR). If not otherwise specified, the ESR is always an AC resistance [vague] measured at specified frequencies, 100 kHz for switched-mode power supply components, 120 Hz for linear power-supply components, and at the self-resonant frequency for general-application components. Audio components may report "Q factor", incorporating ESR among other things, at 1000 Hz.

In a non-electrolytic capacitor and electrolytic capacitors with solid electrolyte, the metallic resistance of the leads and electrodes and losses in the dielectric cause the ESR.

Typically quoted values of ESR for ceramic capacitors are between 0.01 and 0.1 ohms. ESR of non-electrolytic capacitors tends to be fairly stable over time; for most purposes real non-electrolytic capacitors can be treated as ideal components.

Aluminum and tantalum electrolytic capacitors with non-solid electrolyte have much higher ESR values, up to several ohms; electrolytics of higher capacitance have lower ESR. ESR decreases with frequency up to the capacitor's self-resonant frequency.

A very serious problem, particularly with aluminum electrolytics, is that ESR increases over time with use; ESR can increase enough to cause circuit malfunction and even component damage, although measured capacitance may remain within tolerance. While this happens with normal aging, high temperatures and large ripple current exacerbate the problem. In a circuit with significant ripple current, an increase in ESR will increase heat accumulation, thus accelerating aging.

Electrolytic capacitors rated for high-temperature operation and of higher quality than basic consumer-grade parts are less susceptible to become prematurely unusable due to ESR increase. A cheap electrolytic capacitor may be rated for a life of less than 1000 hours at 85°C. (A year is 8760 hours.) Higher-grade parts are typically rated at a few thousand hours at maximum rated temperature, as can be seen from manufacturers' datasheets. If ESR is critical, specification of a part with higher temperature rating, "low ESR" or larger capacitance than is otherwise required may be advantageous. There is no standard for "low ESR" capacitor rating.

The site http://my.execpc.com/endlr/esr.html gives the following values as valid for ESR capacitors of differen

Capacitor Type:	22 uF part	100 uF part	Freq. measured: Hz	Comments
Std. aluminum	7-30	2.7	120	
Low-ESR aluminum	1.5	0.3-1.6	100k	
Solid aluminum	0.2-0.3		500	MnO_2 electrolyte
Sanyo OS-CON	0.04-0.07	0.03-0.06	100k	TCNQ electrolyte
Std. solid tantalum	1.1-2.5	0.9-1.5	100k	SMD
Low-ESR tantalum	0.2-1	0.08-0.4	100k	SMD, for PS filtering
Wet-foil tantalum	2.5-3.5	1.8-3.9	not stated	H_2SO_4 electrolyte
Stacked-foil film	<.015		100k	
Ceramic	<.015		100k	X5R, Y5V

	10V	16V	25V	35V	63V	160V	250V
1				14	16	18	20
2.2			6	8	10	10	10
4.7			15	7.5	4.2	2.3	5
10		6	4	3.5	2.4	3	5
22	5.4	3.6	2.1	1.5	1.5	1.5	3
47	2.2	1.6	1.2	0.5	0.5	0.7	0.8
100	1.2	0.7	0.32	0.32	0.3	0.15	0.8
220	0.6	0.33	0.23	0.17	0.16	0.09	0.5
470	0.24	0.2	0.15	0.1	0.1	0.1	0.3
1000	0.12	0.1	0.08	0.07	0.05	0.06	
4700	0.23	0.2	0.12	0.06	0.06		

This table shows rough 'typical' values of electrolytic capacitor ESR for a wide range of different capacitance and voltage ratings.

Polymer capacitors usually have lower ESR than wet-electrolytic of same value, and stable under varying temperature. Therefore, polymer capacitors can handle higher ripple current. From about 2007 it became common for better-quality computer motherboards to use only polymer capacitors where wet electrolytics had been used previously.

The ESR of capacitors larger than about 1 µF is easily measured in-circuit with an ESR meter.

The Mega328 tester, however, measures so much more than just the ESR of a capacitor. Check out this issue's insert, **Mega328 LCR-T4 Transistor Tester**.

GM328 Transistor Tester & Frequency Generator

The more current GM328 Tester has most of the same capabilities as the first Mega328, but has several new capabilities. Most impressive - this tester includes frequency generation and is also a frequency counter.

The GM328 Transistor Tester is sold as a kit and requires some experience in soldering skills as three of the parts are small surface mounted devices.

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GM328 Completed Kit

The Tester will automatically detect NPN, PNP, and Field Effect Transistors (FET), diodes (including dual diode, zener diode and light emitting diode), triodes, thyristors, triacs, and SCRs, with automatic identification of the transistor pinout. The Tester detects power transistors with FET protection diodes built in. It also tests resistors (including adjustable potentiometers), capacitors, and inductors.

This Tester can also generate a single square wave with 20 set frequencies from 1Hz to 2.0MHz, can measure frequencies from 1Hz to 2.9MHz with resolution to 0.001mHz, and can use an AC/DC power adapter (6.8-12Vdc, 30mA current).

Check out this issue's insert, **GM328 Transistor Tester & Frequency Generator**.

Joomla! Update

Well, it's been six months since I first downloaded Joomla! and learned how to create a website. One thing that I liked was the ability to download Joomla! onto my own computer and create and run my website from there - making sure that I could learn Joomla! and create a website before taking the big step of going on-line.

However, life is not as rosy as I explained last time.

As you may recall, Joomla! is open source, which is fine if you are closely following and under-stand the changes being made. However, for a newbie like me, it can be a royal pain...

In the six months since I've downloaded Joomla! I have had an update every few weeks. It seems that every time someone gets a bug in his bonnet (pardon the pun) about something that needs to be changed, a new update is made. And while the update is generally painless and quick, I got emails from my own website daily that an update was available. I finally found the switch to disable those, but I spent more time doing updates than I did making needed changes to my websites. But, it gets worse...

What should happen if a change is made that affects the website and causes it to crash? Sure, I made a backup. But is there a way to back out to a previous Joomla! version? I have not seen one. Can you ignore the warnings that an update is necessary? Will the backup work?

Well, just such an event happened with my computer version websites. It wasn't with Joomla!, but with Xampp. It seems that in addition to the Joomla! updates, the programming language, PHP, goes through the same ever-changing environment.

Only six months ago, I downloaded Xampp to be able to run Joomla! on my computer. It supposed-ly included the latest PHP, version 7.1. Well, while going to one of my home-computer web sites, I received a warning that PHP version 7.1 would no longer be supported! It would be best to update to the now latest version 7.4!

Not finding an Update button for PHP, I did a web search for how to update PHP. There was plenty of info on why the change should be made, but little on actually doing the update. It can be downloaded easily enough, but it turns out that updating to a newer version of PHP involves all sorts of code changes to numerous files! And, if you are not familiar with coding, these changes are only briefly described and very intimidating.

My research on the web shows that most PHP users do not update their PHP version after their web sites are complete! Many are still using 5.x versions. Well, dah... You need a programming degree to do the updates!

I tried making sense of the changes, but finally gave up.

Continuing to research the web, I then found that Xampp itself keeps up with the changes to PHP, Apache (server), and MySQL (database) software. Xampp versions are one version less than the current PHP version (it takes time to make all those changes to PHP, check it out, and then go public), but that should keep you current for awhile, and the web indicated the update to Xampp was considerably easier than just doing PHP.

However, there were still numerous different procedures listed on the web:

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   * All said backup the websites - done.
   * Some said make a copy of C:xampp\htdocs and store it somewhere. Htdocs is supposedly where all the website info is kept. I made a copy to a USB drive AND in another directory that I called XamppBackUp - done.
   * Some call for changing the name of the present C:\Xampp directory to XamppOld, then reloading a new installation of Xampp. - I should have done this, but was concerned that I might end up mixing files of the two versions. Hindsight is 20/20.
   * Others said to uninstall the old version, install the new version, and copy the old \htdocs files to the new version. - done.
   * There were more suggestions regarding backing up the database that I thought would be the Akeeba Backup that I had done. - I did not understand, and blew it off.

The result was a catastrophe! Restarting Xampp, and going to my website did not bring up the usual password request screen but:

   Warning: Session_start(): Failed to read session data: user(path: C:\xampp\tmp) in **C:\xampp\htdocs\Z100LifeLine\libraries\ joomla\session\handler\native.php** *on line 260. Error: Failed to start application: Failed to start the session*

What the h$%^ does that mean?

C:\Xampp\tmp was one directory I certainly had not worried about backing up. It's only a tmp directory! I quickly looked around my hard drive and USB backups looking for an old version of Xampp and my computer web sites. Nope! I never made one. Would I have to generate my web sites for a fourth or fifth time?

Looking at the file C:\Xampp\tmp\why.tmp with NotePad, explains that PHP needs the tmp directory for saving the Sessions. We should NOT delete it! Oh, Great.

The days of letting your website just sit for years on the web, unattended, are apparently gone. And at any point, any update attempt could eradicate all your work...

So let's see what I should have done:

One procedure can be found at:
https://medium.com/@asif.rocks/how-to-upgrade-xampp-in-windows-the-easy-way-93031fc923ce

While updating XAMPP we basically face 2 challenges:

• Moving all the site files. This portion is easy, just a simple copy & paste will do the trick.
• Moving all the databases to the new server. And most often this is the main reason why most people do not update XAMPP very often. Because backing up all the databases one by one and then importing them to the new server is a long and really boring task.

THE COMPLETE SOLUTION:

Follow the steps below and your XAMPP will be updated in no time!

BACKUP OLD DATA!

This is not just using Akeeba Backup, as I had done, but we need to do a backup for export. So, let's backup all the databases first:

1.   Open Xampp Control Panel as Administrator
2.   Click on the **Shell** option, which opens a DOS window
3.   Run the command:
      mysqldump -u root -p --all-databases > all-db-dump.sql
4.   If you have a different user for databases then change the value 'root' with username. If you don't have any password just press enter. Otherwise provide the password.
5.   This will create a SQL file named **"all-db-dump.sql"** that contains all the databases in MySQL server. You will find this file in the Xampp folder.
6.   Now stop both Apache and MySQL servers and quit the Xampp control panel. Close the DOS window too.
7.   Now rename your 'Xampp' folder to 'Xampp-old'. This way if anything goes wrong you will be able to get back to the old version very easily.

TIME TO INSTALL THE NEW ONE!

1.   Download the latest version of Xampp.
2.   Install it in the same drive where your old Xampp originally was.
3.   Now go to the Xampp folder and run the Xampp control panel as Administrator.
4.   Start both Apache and MySQL server and check whether they are working properly or not, also check the PhpMyAdmin page.
5.   Now copy the htdocs folder from 'Xampp-old' folder to 'Xampp' folder.
6.   Go to Xampp\php\php.ini
7.   You can use CLI (Command Line Input) for importing the database. It helps especially with very big databases. If so, you can jump to step 19. If not, follow the remaining steps.
8.   Now configure the php.ini file and increase the value for the following options, if needed:
         upload_max_filesize = 128M
         memory_limit = 128M
         post_max_size = 128M
9.   post_max_size and memory_limit need to be the same or larger than upload_max_filesize. Make them high enough so big files can work on the server.
10.   Go to 'xampp\phpMyAdmin\libraries\config.default.php'
11.   Look for $cfg['ExecTimeLimit'] = 600;
12.   Change the value 600 to a higher value, maybe 6000.
13.   Now restart both Apache and MySQL server.
14.   Now go to phpMyAdmin
15.   Go to Import tab
16.   Import the 'all-db-dump.sql' file through the import option directly to the server.
17.   Based on how many databases you have it will take some time.
18.   If you have followed all the steps correctly you will get a success message, "*Import has been successfully finished*".
19.   After that, run the following command mysql_upgrade in the Shell option.
20.   Go ahead and check whether your site and

databases are working properly or not.
21. If everything is working fine, you can delete
     the xampp-old file.

If you have followed these instructions then you
should have a functioning XAMPP with no issues.

(Yeah, lots of questions there - SWV)

Another procedure to follow is outlined at:
https://premium.wpmudev.org/blog/upgrading-
xampp/

It is for updating Xampp for WordPress websites,
but I'll try to make the changes as we go.

Updating XAMPP is a six step process:

1.   Backup your website files.
2.   Export your databases.
3.   Uninstall the old version of XAMPP.
4.   Install the new version of XAMPP.
5.   Adjust PHP settings.
6.   Restore your website files and databases.

Step 1: Backup Website Files

All of your XAMPP website files live inside of the
\xampp\htdocs\ directory. If you have more than one
Joomla! installation or website set up in this folder
you will have a subdirectory for each installation or
website. Take a look at the htdocs directory and
determine which website's files you wish to keep.

To backup the files you wish to keep, create a new
folder and copy the files you wish to keep into the
new folder.

Keep all of your website files except for those that
were part of the Xampp installation: dashboard, img,
webalizer, xampp, and so forth. Create a backup folder
called Xampp Backup and copy all of the files to be
kept directly into this folder.

Step 2: Export Databases

Fire up Xampp control panel if it is not already
running and head to phpMyAdmin. There are several ways
to launch phpMyAdmin:

• By using the link in the Xampp dashboard that
  appears at http://localhost,
• By clicking Admin in the MySQL row in the Xampp
  control panel, or
• By just typing http://localhost/phpmyadmin into
  your browser's address bar.

You have two different options when it comes to
exporting your databases. The first option is to
export all of your databases in one SQL file. The
second option is to export each database individually.

While the first option may sound like the easier
option, the downside is that since you will be working
with a larger file you are more likely to run into
issues when importing your databases into your new
Xampp installation. It is recom-mended going with the
second option. It is a bit more work to export and
import your databases individually, but you're also
less likely to run into errors. Also, if there is an
issue, it may be easier to work with only one database
at a time.

Nevertheless, here are the steps to take to download
all of the databases at once:

• From the main phpMyAdmin page select Export.
• Select the Custom export method.
• In the Databases section, hold down Ctrl and select
  all of the databases you wish to export being
  careful not to select the database named
  phpmyadmin.
• Scroll to the bottom of the page and click Go.
• Wait for the SQL file to be downloaded to your
  computer.

To download each database individually, the process is
a little different.

• From the main phpMyAdmin page select the first
  database you wish to export by clicking on the name
  of the database where it appears in the list of
  databases on the left-hand side of phpMyAdmin.
• Next, select Export from the top menu, and at the
  bottom of the export page click on Go.

Wait for the download to finish, then complete the
same process for each database you wish to export.

If you are not sure which databases go with which
Joomla! website, you can check by going into your
website files in the htdocs directory, opening up
configuration.php for each Joomla! site, and looking
for the line that looks like this:

    public $db = 'example'

Export each database you wish to keep and put it
someplace where you will be able to find it easily
later on, such as the download directory on your
computer. Make sure you save it some place far from
the \xampp\ directory tree.

If you keep all of your databases together, export all
of them at once and save the entire SQL file in the
same directory as your website files on your
computer's desktop.

Step 3: Uninstall the Old Version of Xampp

(From experience, I would now rather just rename it to
OLD, as given in the previous method. However, after
you are done, how can you uninstall it later? If it
requires Uninstall, as described below, will it
uninstall the XamppOld, or the new Xampp? - SWV)

First, before you try uninstalling Xampp, make sure
you copied all of your website files and databases.
Once you uninstall Xampp, anything you have not backed
up will be lost. So take a second, go look at your
website files and make sure you copied all of the
files you wish to keep out of htdocs. Also, verify
that you have all of the databases you wish to save.
Once you are certain you have saved a copy of
everything you want to save, stop Apache and MySQL and
exit the Xampp control panel.

Now you're ready to uninstall Xampp.

There are three different Xampp installation flavors:

• Automatic installer
• Zip archive
• 7zip archive

The flavor you get if you use one of the down-load
links at the Xampp website is the installer version.
The other versions are hosted at Xampp's SourceForge
page, and you would only have one of those versions

installed if you did so intentionally. So if you aren't sure which version you have, you probably have the installer version.

If you do have the installer version you need to use the uninstall script to remove Xampp. You'll find the uninstaller at \xampp\uninstall.exe. If you are running either the Zip or 7zip version you can safely delete the entire \xampp\ directory without running an uninstall script.

If in doubt as to which flavor you have, just check for the uninstaller. If you find it, run it.

When you run the uninstaller you may be asked whether you want to keep or delete the htdocs directory.

If you have followed the instructions so far, you do not really need it. However, there is certainly no harm in keeping it. However, if you select the option to keep your old htdocs folder intact and plan on installing the new version of XAMPP in the same location as the old instal-lation, you will need to move the htdocs folder out of the \xampp\ directory. **Xampp can only be installed into an empty directory**.

So, move everything out of the old \xampp\ directory before attempting to install the new version of Xampp.

Step 4: Install the New Version of XAMPP

Our tutorial on installing Xampp walks through the installation process, so I will not go over it in detail here. Head to the Apache Friends download page and select the version of XAMPP you want to install on your computer. I prefer the installer version you get when you download Xampp directly from Apache Friends, but if you prefer the Zip or 7zip versions feel free to click on More Downloads and select the version you prefer. Download the version you want to install and get it set up on your computer.

Step 5: Adjust PHP Settings

The default PHP settings that ship with a new Xampp installation used to be pretty restric-tive, even more restrictive than an average shared server and strict enough to all but guarantee that you will exceed some sort of limitation while working with Joomla!.

Before going any further, I recommend making the following adjustments to the PHP settings:

• Increase max_execution_time to 120 seconds
• Increase upload_max_filesize to 128M
• Increase post_max_size to 128M

Those settings can be adjusted by opening \xampp\php\php.ini in Notepad, searching for the setting you wish to update, and increasing the existing value, if needed.

Step 6: Restore Your Website Files and Databases

Restoring your website files is easy. Simply copy the files and folders you previously backed up and paste them into the new \xampp\htdocs\ folder. Once they finish copying, however, they will NOT be ready to test until you have imported your databases.

To restore your website databases you will need to import the SQL file or files you exported from the original Xampp installation.

Importing Multiple Databases Simultaneously

Uploading your databases all at once is pretty straightforward. Launch phpMyAdmin from within your new Xampp installation, select Import, choose the SQL file you exported previously from your last Xampp installation, and once you have it selected, click Go.

If the file is large it may take a little while for it to be uploaded. Be patient.

There are a couple of things that can go wrong at this point:

• You may exceed the maximum time phpMyAdmin will allow to process an upload: 300 seconds. If that happens, you need to turn off the time limit on phpMyAdmin's import process.
• If you accidentally included the phpmyadmin database in your SQL file you will see phpMyAdmin error 1050: "table already exists." If that happens, you will need to tell phpMyAdmin to ignore multiple statement errors.

If you do run into an error, such as either of those listed above, that causes the import process to be aborted part of the way through, some of your databases will be imported while others are not.

After fixing the setting that caused the error, but **before** you re-attempt to import the databases, drop the databases that were imported. If you do not, the data will be re-imported when you re-attempt the import process, and you will end up with duplicate records in all of your database tables.

Dropping databases is easy. Go to the phpMyAdmin homepage, click on Databases, select the checkboxes next to the databases you want to drop, and then click Drop. Just be careful not to drop any of the system databases such as phphmyadmin, information_schema, mysql, and performance_schema.

Importing Individual Databases

You are less likely to run into errors importing databases individually. However, the trick to making this process easy is to **name the new databases exactly the same as they were named under your original Xampp installation**. If you do not, you will have to go through and update the configuration.php file for each site where the database name has changed.

The process of uploading your databases one at a time looks like this:

• Go to phpMyAdmin and click on New from the list on the left-hand side of the application.
• Create a new database, being careful to use the **exact same name** as was used for the original database.
• Select the database you just created from the list in the left-hand panel in phpMyAdmin.
• Click on Import in the top menu, select the SQL file for the database you wish to import, and click Go.
• Once the import is complete, repeat the same process for the next database you wish to import until you have imported all of your databases.

The PHP setting adjustments recommended earlier will probably keep you from running into errors if you import databases individually. However, if you import any exceptionally large databases you could still run into errors.

If you do run into errors, and they are not the errors mentioned in the section about importing multiple databases, Google is your best bet for finding a quick solution.

Once your databases import successfully it's time to fire up Xampp, start Apache and MySQL, and test your web sites. Type in http://locahost/website_directory/ just as you have done in the past with your old Xampp installation to access your web sites. All of your old usernames and passwords will still work just fine.

Updating Xampp is no easy process and you're almost guaranteed to run into some sort of hiccup along the way. However, if you need access to updated components, such as the latest version of PHP, there is really no way around going through the process.

Well, that is all great. And when I have to do this again, I will certainly document the procedure better next time. But I still have my present problem... no database backup!

After several days of researching, I finally decided that the ONLY way to go was to backup my on-line web sites, download them to my computer, then restore them in Xampp. So, here goes...

I experimented with my smaller Vpennies website first. If I messed it up, it would be easier to fix. I will also do these one at a time, for the same reason.

Backup Online Website and Download to Computer

I went online and opened my Vpennies Website. All was ok there, so I reentered the website URL and added /administrator/ to enter the Back End or Administrative End of your website.

Sure enough, both Joomla! and the JCE editor had updates to be loaded. At least I was not using Xampp and it was the host server's responsibility to keep PHP current. Yeah!

I updated the website as needed and completed an Akeeba Backup as normal.

Next, I clicked on Manage Backups.

The Manage Backups page came up with a blue help box at the top that showed:

  (i) *How do I restore my backups?*
      It's easy! Select the check box next to
      a backup entry. Now click on the Restore
      button in the toolbar.
      If you want to restore to a new, public
      server you can use the Site Transfer Wizard.
      *If you'd rather do it manually or **restore to***
      ***your own computer** or Intranet please watch*
      *our **video tutorial** and **download Akeeba***
      ***Kickstart Core** (free of charge) to extract*
      the backup archives.

Further down the page was a table listing all the backups that had been performed since I had started. The latest three backups all had a download option listed in a column to the right.

Seeing the "restore to your own computer" in the blue box, I viewed the tutorial and printed out the transcript that was graciously provided.

I also downloaded the Kickstart Core from the link to my Download Directory on my computer.

The full transcript provided the procedures to follow and are listed here. Each procedure of the transcript has an asterisk and is italicized to separate it from my additional comments on each step as I performed each of them:

Restoring a Site on Any Server

   * *A backup of your web site is only useful if you can restore it - perhaps you need to change your web host or even move the site from a development server to a live server.*

   * *To begin with, take a brand new backup of your web site.*

Update all elements of your web site that need updating before doing the backup.

   * *Once the backup is complete, go to Manage Backups and download the backup file to your computer.*

Using the latest backup, the one I just created, I clicked on Download and it downloaded to my Download Directory in my computer.

There was a warning that came up when I clicked on Download:

   /!\ *Downloading through your browser may*
       corrupt the files
       We recommend closing this dialog and
       using FTP in Binary transfer mode or
       SFTP to download your backup archives.

I knew what FTP was - basically using a file transfer utility such as FileZilla. And maybe SFTP was a secure means, but I wasn't sure what the file name would be or where to find it, so I thought I would just try this Download first.

The download file had the name:
   site-vpennies.swvagts.com-20191221-143028utc.jpa

   * *Now we've downloaded the backup file, we need an additional program called Kickstart, which you can find at the akeebabackup.com web site.*

Within the blue box at the top of the Akeeba Download Manager page was a link to download the Akeeba Kickstart Core. Just click there and you will get the latest version.

There are a few things that you should know about Kickstart:

• Kickstart is NOT an installer. It is an archive extraction tool. The actual installer was placed inside the archive file at backup time.
• Kickstart is not the only way to extract the backup archive. You can use Akeeba eXtract Wizard and upload the extracted files using FTP (such as FileZilla) instead.
• Kickstart is bound by your server's config-uration. As such, it may not work at all.
• You should download and upload your archive files using FTP in Binary transfer mode. Any other method could lead to a corrupt backup archive and restoration failure.
• Post-restoration site load errors are usually caused by .htaccess or php.ini directives. You should understand that blank pages, 404 and 500 errors can usually be worked around by editing the aforementioned files. It is not our job to mess with your configuration files, because this could be dangerous for your site.
• Kickstart overwrites files without a warning. If you are not sure that you are OK with that, do NOT continue.
• Trying to restore to the temporary URL of a cPanel host (e.g. [http://1.2.3.4/~username)](http://1.2.3.4/~username) will lead to restoration failure and your site will appear to be not working. This is normal and it's just how your server and CMS software work.
• You are supposed to read the documentation before using this software. Most issues can be avoided, or easily worked around, by understanding how this software works.
• This text does not imply that there is a problem detected. It is standard text displayed every time you launch Kickstart.

*   Go to download. You will find the Akeeba Kickstart here in the backup section. Kickstart is a standalone program.*

*   Click download to download the file to your computer. Here we can see that the Kickstart program is a zip file and we need to extract that.*

Just double-click on the Zip file, kickstart-core-6.0.2.zip and locate/click on Extract All.

*   We can see we now have a new folder with all the kickstart files in it. The only one that you actually need is the kickstart.php file; all the rest are language translations.*

*   We now need to transfer the kickstart.php and our backup to our brand new web host.*

The following steps assume you are uploading the files to a new web host. I'll group them together and we can skip them. But I'll leave them printed here in case you ever need them.

*   To do that we will use a FTP program. I am going to use filezilla, but you can use any FTP program that you like.*
*   To begin with connect to your new server.*
*   Once connected make sure you are in the public html or the web root of your server.*
*   Now you need to transfer the backup file from our local computer to our live server. I am just going to pick that up and drag it across.*
*   We now need to take that kickstart.php file and do exactly the same thing. Select it and drag it across. That's it with the filezilla for now so let's go back to our web browser and go to our brand new web site.*

Ok, but we are placing the files in our own computer within our updated Xampp directory, which we have already prepared.

Just copy Kickstart.php and your website zip file (mine was site-vpennies.swvagts.com-20191221-143028utc.jpa), from the download directory into your new directory, C:\Xampp \htdocs\YourSiteName or \VPenTest for me.

Note: It would be best if YourSiteName was the **same name** that your site had previously.

Next you need to install a new version of Joomla! in this same C:\Xampp\htdocs\YourSite-Name directory. Follow the procedures given in issue #129.

Now, let's go to our computer's website...

Open Xampp's Control Panel and start Apache and MySQL.

*   As you can see I have a holding page in place to show that the web site is coming soon. So just go to the special url for kickstart.php. The kickstart program is now running.*

Start your favorite browser and enter:
http://localhost/YourSiteName/Kickstart.php
Mine would be:
http://localhost/VPenTest/Kickstart.php/

*   Kickstart is NOT an installation program, it is a special archive extraction tool. Click here to remove this message and we can see that it has detected the archive file.*

The Kickstart Page shows all the settings needed for Kickstart:

(1)   Select a backup archive
        Archive directory:
            [C:/xampp/htdocs/VPenTest/]
        Archive file:
            [site-vpennies.swvagts.com-
            20191221-143028utc.jpa]
        Archive Password (for JPS files)
            [leave blank]

[START]

   * *We have several methods of extracting the files.*

   * *On most good web hosts we can use the hybrid method.*

   (2)   Select an extraction method
         Write to files:
             [Hybrid (use FTP only if needed)]
         Ignore most errors   [ ]
         (S)FTP host name: [localhost]
         (S)FTP port: [21]
         Use FTP over SSL (FTPS) [ ]
         Use FTP Passive Mode   [X]
         (S)FTP user name: [leave blank]
         (S)FTP password: [leave blank]
         (S)FTP directory: [leave blank]

         Temp directory:
             [C:xampp/htdocs/Z100LifeLine/]
         [Check] [Reset]

         [Test FTP connection]
         [Can't get it to work? Click me!]

   (3)   Fine tune
         Min execution time: [1] secs per step
         Max execution time: [5] secs per step

Note: Increase min to 3 if you get AJAX errors.
Increase max to 10 for faster extraction, but
decrease back to 5 if you get AJAX errors.
Try min 5, max 1 (not a typo) if you keep
getting AJAX errors.

         Stealth mode [ ]

         HTML file to show web visitors
             [leave blank]

Note: When enabled, only visitors from your IP
address will be able to see the site until the
restoration is complete. Everyone else will be
redirected to and only see the URL above. Your
server must see the real IP of the visitor (this
is controlled by your host).

         Rename server configuration files [X]

Note: Renames .htaccess, web.config, php.ini and
user.ini contained in the archive while
extracting. Files are renamed with a .bak
extension. The file names are restored when you
click on Clean Up.

         Restore file permissions [ ]

Note: Applies the file permissions (but NOT file
ownership) which was stored at backup time. Only
works with JPA and JPS archives. Does not work
on Windows (PHP does not offer such a feature).

         Files to extract [leave blank]

Note: Enter a file path such as images/cat.png
or shell pattern such as images/*.png on each
line. Only files matching this list will be
written to disk. Leave empty to extract
everything (default).

   (4)   Extract files

         [START]

   * *Finally click START to begin the extract process.*

My backup info looked good, so I pressed START.

   (5)   Extracting

   * *Kickstart has now extracted the backup
file and provides a link to the installer that
was built in to the backup.*

The extraction takes awhile and there is a
progress bar that indicates complete.

   (6) Restoration and Clean Up

         [Run the Installer]

Click on [Run the Installer].

   * *The installer is a very simple process. We
begin with the required settings. As you can see
they are all set to yes. If any are set to No
you will not be able to proceed and you need to
speak to your web hosts to rectify the errors.*

When you click to Install, the Akeeba Backup
Site Restoration Script is shown; listing the
Pre-Installation Check and Recommended Settings;
Current Settings; Showing Errors & Output
Buffering ON (which I left alone); Backup
Information and Site Information.

Click Next at the **top right** of the page.

   * *We can now click Next. I now need to enter
the database connection details that I have got
from my web host. Enter the server hostname,
which is usually localhost but that may depend
on your hosting, and your DATABASE username and
password. And finally the database name that you
want to install your web site on. This is
something that your host will have provided to
you or you will have set up yourself within your
hosts control panel.*

The next page showed:
   **Restoration of Site's Main Database
   Connection information:**
      Database type [MySQLi   ]
      Database server host name [Localhost]

This is usually Localhost (for our computer),
but if using another online host, you must ask

your host for this setting, or consult your hosting account control panel, as this setting is usually displayed there. If using Localhost does not work, try using 127.0.0.1 (they are synonymous).

       Username [root   ]
The username of the database server user. For a first installation, use Root, and leave the password (next) blank.

       Password [   ]
The password of the Database server user. See previous note.

       Database Name [YourSiteName]
This is the actual name of the Database you want to restore to. Use all lower case. If you choose a database which already has tables in them, the existing tables will be overwritten. I used vpentest here.

       Database Table Name Prefix [nqs58_]
This prefix is up to your liking, but use lowercase letters and numbers 0-9 only; must end with an underscore character; must be unique from other prefixes being used.

After entering this information, look at the Advanced Options column...

The Existing Tables option lets you decide what to do with tables that have the same name as those being restored. The default DROP option will delete same-name tables without asking. The Backup option will keep a copy of these tables as BAK_name.

Suppress Foreign Key Checks allows you to restore cross-linked tables.

Stop on Create Error and Stop on Other Error by default, will stop. If you uncheck one or both fields will report the errors, but will continue with the restoration.

   * *And click next.*

When I pressed Next (at the top right of the page again, I got an error:

   Database Restoration
   (X) An error occurred while restoring the database. The error message can be found below. Click on the X button at the top right of this dialog message to close it and return to the Database Restoration Page.
   Unable to connect to the database. Could not connect to MySQL.

After much experimentation, trying numerous Usernames, Database Names, Passwords, and even the table prefix, both previous and new, I finally tried Root for Username and left the password blank. That worked!

As part of this experimentation, I also went to the URL: http://localhost/dashboard/ which is the Apache Friends website, Welcome to Xampp for Windows 7.3.12 page and clicked on the phpMyAdmin tab to check on my databases.

This phpMyAdmin page has quite a bit of useful information - listing General Settings, Appear-ance Settings, Database Server, Web Server, and information on phpMyAdmin, with numerous tabs across the top. Clicking on the Database tab brings up a list of databases and the oppor-tunity to create new ones.

Among those listed, I found several that I had created while trying to learn Joomla! I deleted some that I had created but were now unused. Do NOT delete those with strange names as these most probably belong to Joomla!

I also found vpentest (all lower case) and the prefix that goes with it that I had just created, so I know that we had created the database correctly. However, I had been using VpenTest with caps.

Having finally found the use of Root, the blank password, and lowercase Database Name, we moved on. Again the restoration takes a few minutes, depending upon the database size, but there is a progress bar that shows things moving along.

Hopefully, the next thing you see is a 'The database restoration was successful'. Click on Next Step.

   * *The restoration process of the database has now completed and we can click to continue.*

   * *We have now have the opportunity, if we wish, to change the site name and the email address. In most cases, when you are restoring a site you won't need to do this.*

   * *If we scroll down there is also the opportunity to change the password and email address of the Super Administrator.*

The next page of Akeeba Backup Site Restoration Script displays:

   Site Parameters:
       Site Name [Vpennies Web Site]

       Site E-mail Address [vpennies@swvagts.com]
Site E-mail is the e-mail address from which all e-mail sent out from your site will appear to originate from (such as those warning of updates that are available!)

       Site E-mail Sender Name [Vpennies]
Site E-mail Sender Name is the sender's name appearing in these e-mails from the website.

       Live Site URL: [Leave Blank, see note]

Note: If you are running under Windows, there is a bug in Joomla! that causes problems. Do NOT use this block.

```
   Force SSL  [ None ]
   Cookie Domain  [ Blank ]
   Cookie Path  [ Blank ]
   Turn on mail sending  [ No ][ Yes ]
```
I did not need e-mails from my own computer.

```
   [ ] Override tmp and log paths
```

Directories Fine-Tuning
```
   Site Root  [C:\Xampp\htdocs\YourSiteName]
   Temporary Directory
        [C:\Xampp\htdocs\YourSiteName/tmp]
   Log Directory
        [C:\Xampp\htdocs\YourSiteName/
        Administrator/logs]
```

FTP Layer Options

Server-Specific Configuration Files

```
Super User Settings
   Super User  [swvagts]
   E-mail [vpennies@swvagts.com]
```

*   Finally click Next again.*

Click Next - and hope it works! Success?

*   The sites configuration has all been setup. Close this window to return to the Kickstart program and click on Clean Up. This will remove the kickstart.php file and that big backup archive from your web space.*

Closing the window takes us back to the Akeeba Kickstart Core, step (6):

```
   (6) Restoration and Clean Up

           [Clean Up]
```

Click on the Clean Up button and you are given the option of visiting the Front End or the Back End of your website. I chose to see what the Front End showed first.

*   Now that we're done we can visit our web site and here we can see that the web site has now been transferred from our old hosting account to our new one.*

Well, not quite. At the Front End logon, my username and password would not work! I found some help in the Akeeba Post-restoration.html instructions, which suggested some configuration.php changes. But mine were fine. Nevertheless, when I cleared my browser's cookies and cache, as suggested, everything finally worked.

However, it required the username and password of my operational website, not the one I want for my computer. To change these, go to the Back End and click on the Users tab at the top. Click on the user you wish to edit. Change the Login Name if you need to change it, and add the new password (twice). You can also change the Email, if you need. You should now be all set.

Congratulations. Do not forget to do a new Akeeba Backup of your new site.

Closing

If you have not done so, please correct your Rolodex with this new information:

The Z-100 LifeLine website is:

   z100lifeline.swvagts.com or
   swvagts.com/z100lifeline

My new Z-100 LifeLine email address is:

   z100lifeline@swvagts.com

Check out the What's New page. It has access to a new Z-100 Index that includes all three major publications, *Z-100 LifeLine, Sextant*, and *REMark*. The index is a full 82 pages in length, so you should be able to locate just about any Z-100 subject.

The What's New page also has a link to a **For Sale** page that you may wish to check out. I've got quite a collection of parts, software, and manuals to get rid of. This page will grow as I take inventory of my excess stock.

Finally, if there is an article that you need, I'll be happy to email you a scanned copy.

Remember, I have now gone paperless. This newsletter is now shown on the website as a PDF document that you may read and/or print at your leisure. I will send an email to you when each future issue is ready.

So, **please** send me an email with your current email address ASAP. However, if you still need the paper version, please let me know and I'll be happy to send you one.

Once again, please note my new Website and e-mail. Check out the new Website often. I think you will like it.

```
     'Til next time,
      happy computing!
```

Cheers!!!

The following is a ZBASIC program to celebrate the 100th issue of the Z-100 LifeLine with Steven Vagts as Editor

```
10    CLS
20    REM  -------------------------------------------------------------------------
30    REM      CAKE.BAS  -  100th Issue with Vagts as Editor
40    REM                By Steven Vagts, Editor, Z-100 LifeLine
50    REM                    211 Sean Way, Hendersonville, NC 28792
60    REM      ZBASIC program for the H/Z-100          January 15, 2020
70    REM  -------------------------------------------------------------------------

100   REM  Set ESCape Codes
110   E$=CHR$(27): F$=E$+"F": G$=E$+"G": REM  E$=ESCape, F$=Graphics ON, G$=OFF
120   P$=E$+"p": Q$=E$+"q": REM  P$=Reverse Video ON, Q$=OFF
130   RANDOMIZE TIME/DATE

1000 REM  Write Cake Outline and fill in Cyan
1010 LINE (30,120)-(620,207),3,BF

2000 COLOR 1,3: REM Write Cake Message to screen in Blue on Cyan
2005 REM  You must get every space & character correct, as shown.
2010 LOCATE 15,9:   PRINT F$+"`  ` xy }zzy }zzy y  x"
2015 LOCATE 15,37: PRINT "}zzz` z`z }zzy z`z ` `}zzy xy y  x"
2020 LOCATE 16,9:   PRINT "vaat xaay }{{x }{{x  yx"
2025 LOCATE 16,37: PRINT "}aaat ` }{{x ` vaat }  } xaay  yx"
2030 LOCATE 17,9:   PRINT "` `| } }   }    x"
2035 LOCATE 17,37: PRINT "}{{{` {`{} y ` ` `}{{x | }  x"
2040 LOCATE 19,12: PRINT "zzx   x` xzzy xzzy"
2045 LOCATE 19,37: PRINT "}   z`z `zz `zz }   z`z }y |`zz"
2050 LOCATE 20,12: PRINT " x  aa ` | }| }"
2055 LOCATE 20,37: PRINT "}    ` vaa vaa }    ` } y | vaa"
2060 LOCATE 21,12: PRINT "x{{   {`{ y{{x y{{x"
2065 LOCATE 21,37: PRINT "}{{{ {`{` `{{ }{{{ {`{} y|`{{"
2070 LOCATE 23,37: PRINT G$+"By Steven Vagts, Editor, Z-100 LifeLine"
2075 LOCATE 1,1:    PRINT G$: COLOR 7,0

2100 REM  Draw a random color rocket firework.
2110 GOSUB 6000: LINE (348,126)-(352,27),C
2120 GOSUB 5000: LINE (348,126)-(352,27),0: YC=352: XC=27
2130 GOSUB 7000
2140 REM  Note I left the rocket trail in the cake to see where it is launched.

2200 REM  Draw another rocket...
2210 GOSUB 6000: LINE (67,126)-(56,27),C
2220 GOSUB 5000: LINE (67,126)-(56,27),0: YC=56: XC=27
2230 GOSUB 7000
```

```
2300 REM  Draw another rocket...
2310 GOSUB 6000: LINE (444,126)-(440,36),C
2320 GOSUB 5000: LINE (444,126)-(440,36),0: YC=440: XC=36
2330 GOSUB 7000

2400 REM  Draw another rocket...
2410 GOSUB 6000: LINE (254,126)-(344,54),C
2420 GOSUB 5000: LINE (254,126)-(344,54),0: YC=344: XC=54
2430 GOSUB 7000

2500 REM  Draw another rocket...
2510 GOSUB 6000: LINE (591,126)-(600,48),C
2520 GOSUB 5000: LINE (591,126)-(600,48),0: YC=600: XC=48
2530 GOSUB 7000

2600 REM  Draw another rocket...
2610 GOSUB 6000: LINE (469,126)-(480,27),C
2620 GOSUB 5000: LINE (469,126)-(480,27),0: YC=480: XC=27
2630 GOSUB 7000

2700 REM  Draw another rocket...
2710 GOSUB 6000: LINE (223,126)-(136,36),C
2720 GOSUB 5000: LINE (223,126)-(136,36),0: YC=136: XC=36
2730 GOSUB 7000

2800 REM  Draw another rocket...
2810 GOSUB 6000: LINE (560,126)-(304,27),C
2820 GOSUB 5000: LINE (560,126)-(304,27),0: YC=304: XC=27
2830 GOSUB 7000

2900 REM  Draw another rocket...
2910 GOSUB 6000: LINE (91,126)-(96,63),C
2920 GOSUB 5000: LINE (91,126)-(96,63),0: YC=96: XC=63
2930 GOSUB 7000

4980 COLOR 7,0
4990 END

5000 REM  Time Delay
5010 FOR I=1 TO 50: NEXT I
5010 RETURN

6000 REM  Get a random color.
6010 C=INT(RND*7)+1
6020 RETURN
```

~~~~~~

```
7000 REM  Create Exploding Firework, make same color as rocket.
7010 REM  Convert XC=RowCoord & YC=ColCoord from LINE Statement.
7020 X=XC/9: Y=YC/8:  REM  X & Y must be whole numbers, no remainder.
7030 COLOR C,0:  REM  Recover color of rocket.
7040 LOCATE X-1,Y-3: PRINT "\|/"
7050 LOCATE X,Y-5:    PRINT "- (POP) -"
7060 LOCATE X+1,Y-3: PRINT "/|\": GOSUB 5000

7100 REM  Overwrite POP with expanding graphics.
7110 LOCATE X-2,Y-5:  PRINT F$+" zy ` xz "
7120 LOCATE X-1,Y-5:  PRINT "  y`x   "
7130 LOCATE X,Y-5:    PRINT " aa  aa "
7140 LOCATE X+1,Y-5: PRINT "  x`y   "
7150 LOCATE X+2,Y-5: PRINT " x ` y "+G$: GOSUB 5000

7200 REM  Overwrite last set with expanding explosion.
7210 LOCATE X-2,Y-5:  PRINT F$+"xz ` zy"
7220 LOCATE X-1,Y-5:  PRINT "|      }"
7230 LOCATE X,Y-5:    PRINT " x    y "
7240 LOCATE X+1,Y-5: PRINT " |x   y} "
7250 LOCATE X+2,Y-5: PRINT " ||`}} "
7260 LOCATE X+3,Y-5: PRINT " |`} "+G$: GOSUB 5000

7300 REM  Overwrite last set with expanding explosion.
7310 LOCATE X-2,Y-5:  PRINT F$+"       "
7320 LOCATE X-1,Y-5:  PRINT "       "
7330 LOCATE X,Y-5:    PRINT "       "
7340 LOCATE X+1,Y-5: PRINT "        "
7350 LOCATE X+2,Y-5: PRINT "|    } "
7360 LOCATE X+3,Y-5: PRINT " |`| "
7370 LOCATE X+4,Y-5: PRINT " |`| "+G$: GOSUB 5000

7400 REM  Overwrite last remnants of explosion.
7410 LOCATE X+2,Y-5: PRINT "       "
7420 LOCATE X+3,Y-5: PRINT "       "
7430 LOCATE X+4,Y-5: PRINT "        "


7500 RETURN
```

~~~~~~