

Acme Widgetworks, Inc.
1 Widget Centre
Portland, OR 97225

ATTN: John Smith

Dear John,

It was great meeting with you the other week. As a follow-up to our meeting, the purpose of this document is to provide you with goals and a proposal for getting your servers, network, and systems operating at top efficiency.

UNDERSTANDING: CURRENT PAIN POINTS

In our discussion with you, there were several substantial pain points that you shared with us:

- You are concerned about a lack of backups and the safety of your data. You have a history of poor backup results, or none at all.
- You have to reboot the SQL server constantly.
- Your servers have performance issues with a large database.
- You consistently have to check up on the network early in the morning, just to “make sure everything is working.”
- Sometimes you send employees home early because your technology is offline or not working.

GOAL SETTING

Our long term goal is to have:

1. All servers fully backed up both on and off- site on a daily basis.
2. Network stability: servers that have 99.9% uptime during production hours.
3. Network performance: Acme staff working at top efficiency; technology is not getting in the way.
4. You no longer dwell on or worry about the technology, because *it just always works*.

It will take two Phases to accomplish these goals.

PHASE 1 (FIRST WEEK) IMMEDIATE GOAL: BACKUP, MONITORING, AND BASELINE MAINTENANCE

Clearly our first focus must be on backups. In our analysis of your network and of your backups, we were unable to determine if data, even now, is being backed up properly. It appears that if you have backups at all, they are being launched and run in a secretive manner, and we are unable to find the scope of the backup, and what was successful. We have one long multi-page log (123 pages) which provided far more detail about what went wrong than what was successfully backed up. No current backup programs were found on your servers (though there had been several trial versions used at one point in the past).

An effective backup plan mandates that:

- All data and “system images” necessary for business production are backed up in a form that is reliable and relatively easy to restore in case of emergency.
- Backup images are rotated, such that data is only overwritten at specifically planned intervals, and the plan provides that data can be *reverted* to a prior day, week or month within a given set of history.

- The process provides for a *verification* stage that will read the data back from the media to ensure that it matches the source data and that no errors (such as those caused by marginal or failing media or network connection issues) were introduced while the backup data was being written.
- The process is simple. It is not a *tedious burden* to keep data backed up properly.
- *Optionally*, the media containing “off-site archives” of your data is removed (by an Acme staff member or 3rd party service such as Iron Mountain) from the facility at timed intervals, in order to protect your data from catastrophic disasters such as fire, flood, or theft.

There are two primary types of backup technologies: **file backups**, and **image-clone backups**.

File backups are an older design, intended to get copies of all files on a system, so one or more can be recovered if necessary. They can be reasonably compact, but are also unreliable for full disaster recovery as they do not capture the entire server hard drives and in-use operating system files, and cannot be used to recover a non-booting server to full functionality. Thus, in a disaster-recovery situation, servers would need to be fully rebuilt *first*, and *then* the data recovered; a process that can take three to five days to restore a non-functional server to full production.

Image-clone backups are a newer and more refined technology. These backups capture an entire snapshot of all volumes on the server block by block, and are far more thorough. They even capture files that are open and in-use, including operating system files. As a result, even a fully crashed server can be restored from bare metal to full production in a matter of just an hour or two. They also have an added benefit of being able to recover down to the file level, so even recovering a single file or folder is easy.

We currently use and recommend image-clone backup procedures.

Our immediate goal will be to get a good, consistent, nightly backup of all servers. Our backups are monitored in a way that will inform us about backup success or any failures, and we can take action to remedy any issue that may arise. We recommend using our Replay system, which is a fully-managed and monitored solution.

Replay is designed to store the backup files onto disk media. Our recommended setup is having nightly backup images run to disk media (usually an external drive or a network shared drive) which stays on your premises, and then have an automated process transfer a duplicate of those backup files to a portable disk drive that is carried off-site periodically (i.e. nightly, weekly, etc). It requires about 30 seconds of effort to swap the drives, and you can rest assured that images of all three servers will be safely backed up both on and off-site.

PHASE 1 (CONTINUED) SECONDARY GOAL: SERVER STABILITY AND UPTIME

Our secondary focus must be on the lack of stability and uptime in your servers. There are many different factors that can cause server downtime including: lack of available memory, poor disk performance, faulty software or hardware, etc. In order to figure out the cause, we will need to monitor the servers over time so that we can discern the likely underlying issues.

We will use our monitoring agent on your servers and spending time reviewing performance logs and alerts to narrow down the cause of the issue. The more often the issues occur, the faster we should be able to get an idea of the cause. This phase may take anywhere from a week to a month, depending upon the behavior of each server.

PHASE 1 SUMMARY

Immediate data backup, and based upon our analysis, a resolution of the problems for the server instability. The fix could be as easy as modifying a few system settings, or as complex as replacement of the entire server infrastructure. Once a determination as to the cause of the stability issues has been confirmed and we have made configuration changes to resolve the issue, we expect to complete this phase in approximately one to three months. This timeframe is dependent upon analysis results.

PHASE 2: LONG TERM GOAL: FULL PRODUCTION, STABILITY, ONGOING MAINTENANCE AND UPKEEP

In this Phase we will implement the solutions based upon our analysis and determinations from Phase 1; changing server configuration, general long-term upkeep, and/or replacement of server(s) or other hardware if warranted. The final goal for this Phase is to achieve 99.9% uptime during business hours, and to have the servers performing at full capacity with no substantial delays.

Because we don't know exactly what Phase 1 will reveal, the specifics of what needs to be done during this second phase are unknown.

ESTIMATED COSTS OF IMPLEMENTATION

PHASE 1 (FIRST WEEK) IMMEDIATE GOAL: BACKUP, MONITORING, AND BASELINE MAINTENANCE

2Tb External Backup Storage Drive <ul style="list-style-type: none"> Drive will remain connected to servers, and will store backup images "online" from the Replay imaging system. Initially, this drive will be connected via USB 2.0. In later phases, we will modify the connection to use higher-speed eSATA. 	1	\$	\$
2Tb External Backup Storage "swap" drive <ul style="list-style-type: none"> These drives are "swap" drives, to be swapped once per week and taken off-site. These hold a duplicate of the backup images, and are to be used for disaster recovery in the case of fire, flood, or theft. 	2	\$	\$
Labor, Phase 1: <ul style="list-style-type: none"> Installation of Monitoring and Maintenance system. Installation of Replay backup imaging system. 	10h	\$	\$

- Total One-time costs, Phase 1: \$
- Total Ongoing Monthly Cost, Monitoring 3 Servers, with Replay: \$

PHASE 1 (CONTINUED) SECONDARY GOAL: SERVER STABILITY AND UPTIME

	Hourly	\$	\$
Labor charges for resolution of stability issues <ul style="list-style-type: none"> Assuming new server hardware and software is unnecessary; we will bill charges for resolving stability issues at our hourly rate of \$. Because we do not know at this time what is wrong with the servers and what will be needed to resolve the issues, we cannot give an accurate estimate. At the end of Phase 1, we will be able to issue you an estimate for how long we expect it will take to resolve these issues and an associated cost. 			

- Estimated Total Phase One Secondary Goal: \$

PHASE 2: STABILITY, ONGOING MAINTENANCE AND UPKEEP, DESKTOPS

Upgrade of 5 workstations to recommended minimum RAM, Labor <ul style="list-style-type: none"> Because RAM is a critical performance component on any systems, especially systems which have applications that are run locally, we recommend a minimum of xxx RAM in any desktop workstation. 	5	\$	\$
RAM, Parts Cost, Upgrade to minimum, Estimated <ul style="list-style-type: none"> Different systems use different types of RAM modules. \$ is the average market cost for two current modules. Range can be \$-\$ depending upon the system and then-current RAM pricing. 	5	\$	\$
One-time costs, Phase 2, workstation Upgrades			\$
Workstation Monitoring maintenance and upkeep, Replay Imaging Backup, Monthly	5	\$	\$

- Total One-time costs, Phase 2 \$
- Total Ongoing Monthly Costs for Desktop Maintenance and Backup: \$

DEPOSITS NEEDED (PHASE 1)

Should you decide to move forward with our team, we require a deposit for the cost of all parts we will be pre-ordering, delivering and installing. Any hourly charges will be billed Net 5 Days as they are incurred. Based upon the above, your total deposit for parts and labor is listed below.

Total Deposit, Due prior to job commencement, including Parts and Labor	\$
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This is a complex project. There are many variables and it is impossible to plan for an exact series of steps which will resolve the issue, as many tasks are contingent upon what we discover from prior tasks or research. We commit to bring any issues and an on-going updated cost estimate to your attention any time new information is discovered which could substantially alter the procedures or costs.

The staff at dts|infotech has a combined 30 years experience in the design, installation and maintenance of networks. We approach all networks, including our own, in the same way. Create a network that is highly efficient, cost effective, quiet and available at all times. We encourage you to call some of our clients for a reference regarding the validity of our work, honesty and integrity.

Again, we appreciate the opportunity to work with you. Please let us know if you have any further questions or would like to arrange to proceed with the work.

Regards,

Dan Neuwirth
dts|infotech, llc