

# Setting Up Remote Access

When it comes to remote access solutions, one size does not fit all. Determining the correct solution requires proper planning. Use these steps as a guide for setting up remote access.

## 1) Define Your Goals

Start by identifying the scale and the scope of your remote access requirements. Document the types and number of systems that will need remote access. Some facilities have one large system that is not segregated, and other facilities have strict access requirements for specific areas of the process or manufacturing equipment. Also consider equipment in the field that needs consistent monitoring or on demand access. Talk with your operations and engineering teams to make sure that you account for all systems.

Determine who will need access to the systems. Most companies need to separate the level of control available to operations and engineering. For example, operations personnel may be allowed remote access to systems from within the plant only, while engineering may be provided remote access from anywhere. Also consider any vendors that may need to access plant systems and how much exposure they should be allowed. Do you need access for a single engineer to provide remote support for the control systems? Has your entire automation team moved to work from home and needs ongoing access to the plant floor? In any scenario, document users and the types of access needed.



Once you have identified the systems and users, the next step is to get IT involved. Investigate your current infrastructure and talk with IT about your now defined needs. They should be able to provide information about how a remote access system can interface the business systems in their purview. In addition, they should be able to share information regarding company policy requirements that might affect how your remote access system can be implemented.

Lastly, be sure to check all current safe operating procedures. Determine which activities are able to be performed remotely vs those that must be performed in person. Check your policies and determine how they may be affected by this change. The space key to this activity is to make sure your policies reflect how you will operate systems remotely, accounting for any

safety hazards that might be created by your remote access system. Some companies have difficulty defining their goals, others have already implemented solutions that are not performing up to expectations, likely due to improper planning. In these cases, it is wise to find a reputable System Integrator who is familiar with deploying remote access solutions, and it helps if they have experience with your particular control system platform. Finding the right partner for your project can make the difference between the full value of a successful implementation and the wrong technical application for your situation. Consider searching for a partner that invests in certifications like the Certified Information Systems Security Professional (CISSP), indicating a level of commitment and experience with cybersecurity best practices. Integrators staffing employees with this certification have placed priority on successfully implementing projects of this nature.



## 2) Select Your Solution

If you defined your goals without engaging a System Integrator, now is a good time to find the right firm to support your project. There are a variety of things that will influence the selection of a remote access system, specifically the key considerations below.

**Make sure the partner you choose has experience with this type of project, understands your goals, and will help you balance your goals against the following key considerations:**

- **Security** - What protocols does it use and how can you authenticate?
- **Access** - Does the system require a hardwired uplink?
- **Price** - Is the cost of the solution worth the increased capability?
- **Flexibility** - Can you scale this system? Is it hardened for use on the plant floor?

As you begin discussing your goals and key considerations it will become apparent that most remote access systems have different strengths and weaknesses.

# Setting Up Remote Access

The following three examples illustrate some common use cases for remote access solutions:

## Company A needs to transition all non-operational activities to work from home.

Company A needs managed, long term, persistent access for their work-from-home engineering team to make changes to the industrial control system. In this scenario, there is a need for a robust enterprise grade VPN with additional features such as Active Directory integration and Multi Factor Authentication. Company A will likely best be served by going with a hardwired system from a commercial vendor and leveraging the same technology that is used to provide access for the business side of the network.

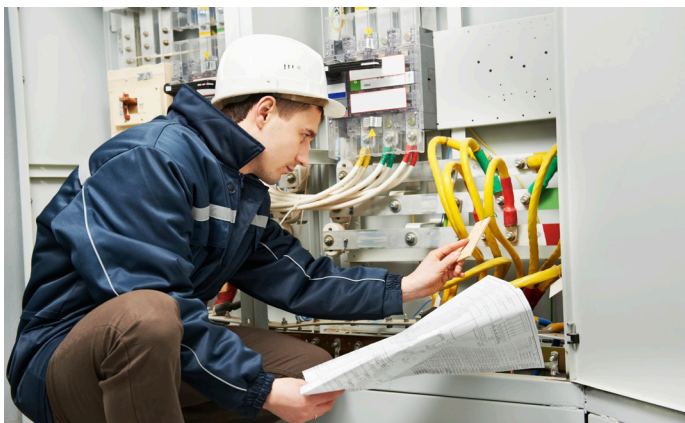
## Company B has a system requiring intermittent vendor support.

Company B needs discrete remote support from an outside vendor. They need to be confident in their control of when the vendor has access to their equipment, and their ability to manage this access. They would want to look towards a system from an industrial vendor that incorporates a physical switch, allowing operational personnel the ability to easily enable and disable access to the equipment.

## Company C has remote field equipment that needs to be monitored consistently.

Company C needs persistent access to a piece of remote equipment in the field. Without running an expensive network uplink, Company C needs to be able to access their equipment and be confident in the durability of their solution. These requirements would point Company C towards a hardened industrial cellular device that's certified for field conditions and does not require expensive cable to be laid out.

All of these scenarios and solutions have different requirements, strengths, and weaknesses. By defining your goals, you can put yourself on the path to selecting the best solution for your specific needs.



## 3) Plan Your Attack

Much like defining your goals, implementation requires proper planning. You'll want to lay out a clear, precise plan with as much advance notice as possible for how you plan to implement your remote access system.

Enlist all stakeholders to be part of the process. Operations, engineering, and maintenance teams all need to be aware of your plan and may be

able to provide valuable input about the implementation. It is also essential to have IT involved early on as they will likely need to sign off on your new system.

Consider if there is a need for a risk assessment. If processes and procedures were reviewed and updated when defining your goals, review this information one last time. This should help the risk assessment process go well. If you did not review them early on, now is the time to make sure the new system will not inadvertently expose a safety hazard for anyone in the facility.

Lay out a road map and timeline for implementation and validation. Once the plan is in place, the only thing left to do is execute!



## 4) Execute

While most people think the execution is the bulk of the work, if you have done well in your planning process, this step should be the easiest. Just follow your plan. After the system has been started and validated, do ample testing to ensure that the system works as planned.

Lastly, keep your system running smoothly by staying current with patches, making sure the system is up to date, and performing long term maintenance. In some cases, your IT team may be able to complete these tasks, if not, reach out to your System Integrator, they should be able to help.

At Hargrove Controls & Automation, we not only implement highly available and secure remote access solutions for our clients, we operate our business with them. We routinely access central development systems from any of our 19 offices, troubleshoot control systems in another city or state, and help our clients solve problems as we travel between destinations. Our teammates are connected and capable of working anytime from anywhere; we safely and securely support our clients whenever they need it.

If you would like to talk through your process for setting up remote access, contact us today!

