SMART3D
Macro Software

Powerful management
through secure connections

A Smart move into Industry 4.0

Smart3D Macro is a platform designed to remove the barriers preventing production companies from adopting additive manufacturing technologies for their processes. With this in mind, all Smart3D devices are **highly interconnected** and **share information** with each other through a **secure serverless network**. They have been designed for **automation** and can be easily accessed by third-party software.

SMART3D **Macro Software**

REDUNDANT

Smart3D products use **decentralized serverless connectivity**. This means that no down unit may compromise the rest of the network.

SECURE

Macro 3D printers automatically interconnect between them via a **serverless neural network**, which brings network security, scalability and uptime to an unknown level in 3D printing. This gives IT departments no need to struggle with Wi-Fi networks, internet access via LAN or VPN's that may be compromised.

FLEXIBLE

The elastic Smart3D network grows or shrinks **automatically** as devices are added or withdrawn without port allocation or complicated setups.
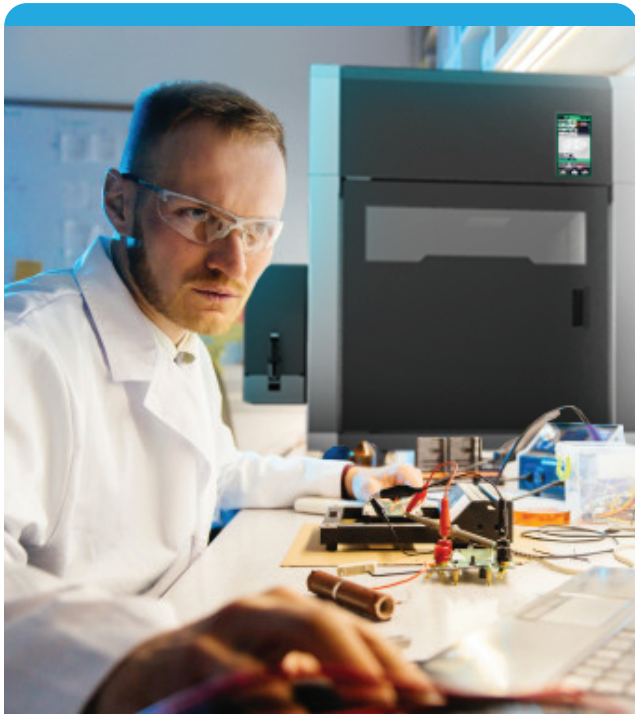
SCALABLE

Conceived as a modular solution that can scale with demand, Macro's software adapts to the needs of a single user as well as to multiple **interconnected manufacturing facilities**.

SMART3D **Macro Software**

The Macro platform has been designed with a **modular approach**, which also applies to its optional software modules. The following modules may be selected according to the user's needs.

Smart3D Cloud and LAN Module

Smart3D Serverless Module

Factory Management Module

SMART3D **Cloud Module**

The Prototyping Unit may either use a cloud server for slicing and control, or work entirely offline. Its software can be completely controlled from the printer's screen, and it may also accept print jobs from the network or a USB-drive.

Smart3D Cloud

The **Smart3D Cloud** software package may work with an Internet connection, providing online slicing service, file storage, print job creation and administration, or user management.
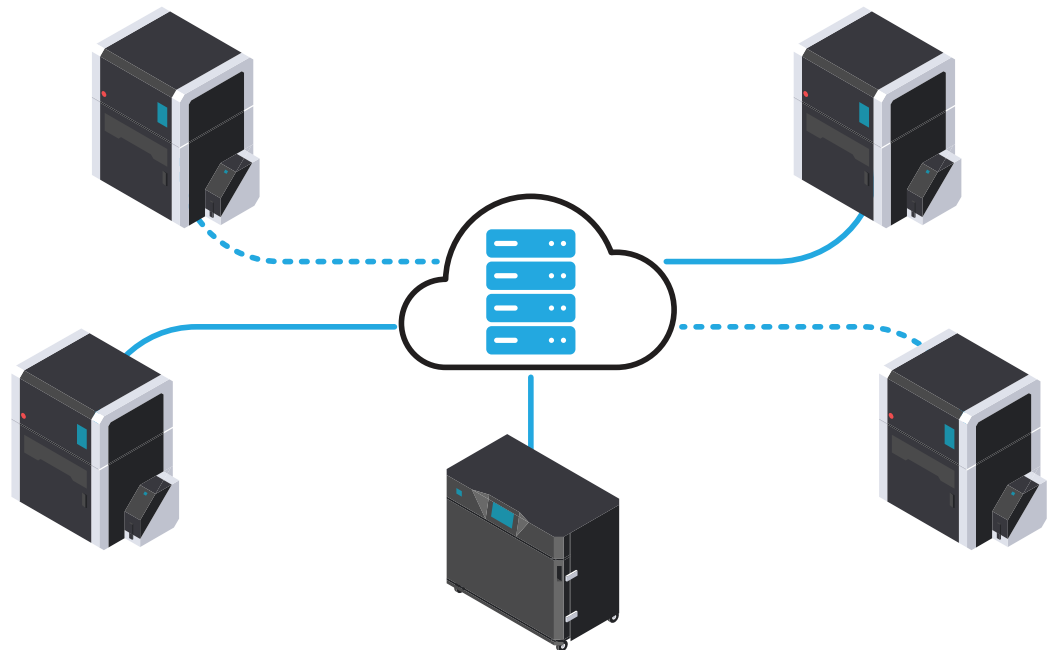
Smart3D LAN

The same **Smart3D Cloud** package can also be installed in an internal server if needed by security and/or connectivity requirements.

Features:

- Advanced online or offline slicing
- 3D view and analysis
- Detailed file information
- Cloud or local storage
- Remote monitoring and control
- Print job management
- Project management
- Real-time status tracking
- Advanced reporting

SMART3D **Serverless Module**

Decentralized connectivity

The Smart3D industrial line incorporates **IOT technology**. All printers in the Macro platform (Prototyping Units as well as Production Modules) can connect with all other Smart3D devices present in the network, creating a new network between them where information is exchanged. This serverless subnetwork gives the platform an important **redundancy** value, which avoids potential downtime caused by server failure.

Functionality

The Production Module has been especially conceived for the creation of **print farms** and for **scalability**. Each Macro PM is completely **autonomous** and has its own system for slicing and control. When multiple PM's are present in a network, the connection between them is **automatic** and they can be managed by an **advanced control system** for print job, device or user administration.
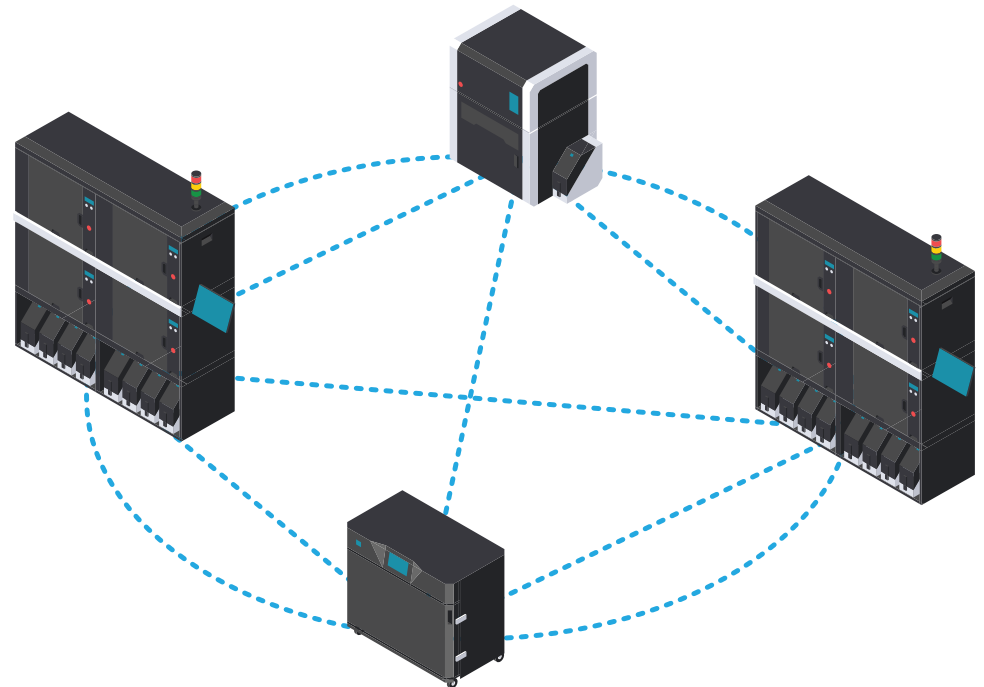
Security

Every network has the inherent risk of an outside or inside attack. A compromised network, in which the attacker has gained access to some level of control, may entail serious risks for a company's information. The connectivity between Macro systems is **encrypted**. This means that even in the worst-case scenario, an attack may only compromise one node (device), while the rest would **continue to be secure**. Without a central server controlling this interconnectivity, there is **no possible attack to a central node** that may compromise the whole network.

SMART3D **Factory Management Module**

This module consists of a set of optional packages that have been specifically **designed for Additive Manufacturing**. They provide additional features aimed at **managing the full workflow** in companies of any size. These packages may be added gradually as the company's AM needs grow, in a **scalable investment**.

The following **software packages** can connect to the company's ERP to enhance its functionalities:

- MES/QMS License: Quote to Invoice, Work Order Management, Integrated Quality, Notifications
- Tracking: Production Pathway, Schedule
- Specification Manager
- Restriction Conformance
- Advanced Quality: SPC, Risk Analysis, Sampling & Advanced Control Plans
- Maintenance Scheduling
- Charting Systems
- Inventory & Vendor PO Management
- Customer Self-Service Portal
- Shipping & Delivery Management
- Document Management
- Serial Number Tracking
- Digitally Linked NC Trail
- Part Build Operations Trackin