

Grandstream eGuide

Vertical Deployment Solutions Brochure

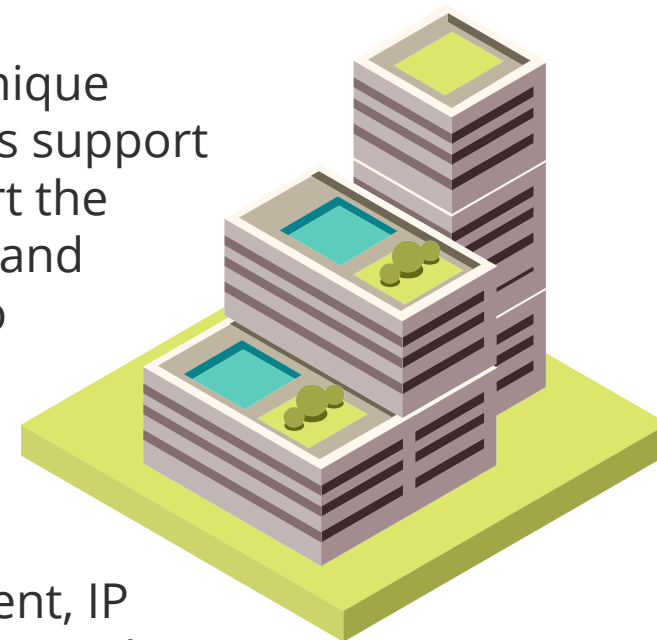


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Grandstream Solutions for Multi-Dwelling Units

Easily deploy and manage full-stack networks and building-wide communications

Multi-dwelling units, such as apartments, student housing, and condos, have unique networking and UC requirements. Unlike hotel deployments, MDU deployments support individuals and entire families living in the units. MDU solutions need to support the day-to-day lifestyles of their users and, as a result, offer a level of performance and features that empower how users work, relax, and live. Grandstream's portfolio offers a compelling end-to-end solution for MDU deployments by combining our full range of networking and unified communication products under a single, cohesive management platform, GDMS. A comprehensive Wi-Fi access point and managed switch backbone support the main architecture of an MDU deployment and its many IP endpoints. Our wide selection of facility management, IP PBX, and UC endpoint devices is a natural addition to this network backbone, depending on the deployment needs.



MDU Product Highlights

Immersive Wi-Fi environments with PPSK, VLAN separation

A multi-dwelling unit can contain hundreds of IP endpoints. Laptops, TVs, smartphones, smart appliances, and other IoT devices all rely on the wireless and Ethernet connections within the building. Without a high-performing and intelligent network, the performance of all other aspects of the deployment suffers. Grandstream's GWN Wi-Fi and switch portfolios, together with our free GDMS cloud management platform, deliver key advantages specifically for MDUs. GWN APs serve as the cornerstone of a positive resident-facing experience. Private Pre-Shared Key (PPSK) support allows all residents to connect to the same building-wide SSID, but each unit's traffic is siloed into its own VLAN. Residents share physical infrastructure but cannot see each other's devices or traffic. This eliminates the need for a per-unit router or separate SSID per apartment. Each specific PPSK can be mapped to different VLANs, as configured on GWN Layer 2 or Layer 3 switches, enhancing deployment security while improving access point performance through bandwidth rules, device limitations, captive portal settings, and more.

Learn how to configure PPSK on our GWN Wi-Fi access points by watching our video [here](#).

Aggregation and distribution layer switching solutions

Grandstream's managed switch portfolio contains Layer 2 Lite, Layer 2++, Layer 3, and Layer 3 Aggregation switches. Within an MDU, Grandstream's Layer 3 aggregation switches would exist at the distribution layer, connecting to access-level Layer 2 switches via 10G SFP+ ports, which then connect to IP endpoints and Wi-Fi access points. Compared to our Layer 2++ switches, GWN Layer 3 switches can perform full hardware-based inter-VLAN routing, support dynamic routing protocols, and act as the IP gateway for every VLAN segment in the building. GWN Layer 2 switches are suited for a per-floor access role within an MDU deployment. With models supporting up to 48 gigabit Ethernet ports, a single GWN layer 2 switch can connect 48 Wi-Fi access points across an entire floor. GWN7800 Pro layer 2++ switches support VLANs, IGMP/MLD snooping, ARP inspection, and DHCP snooping, which work together to create a secure network and optimize traffic across the many devices in an MDU deployment.

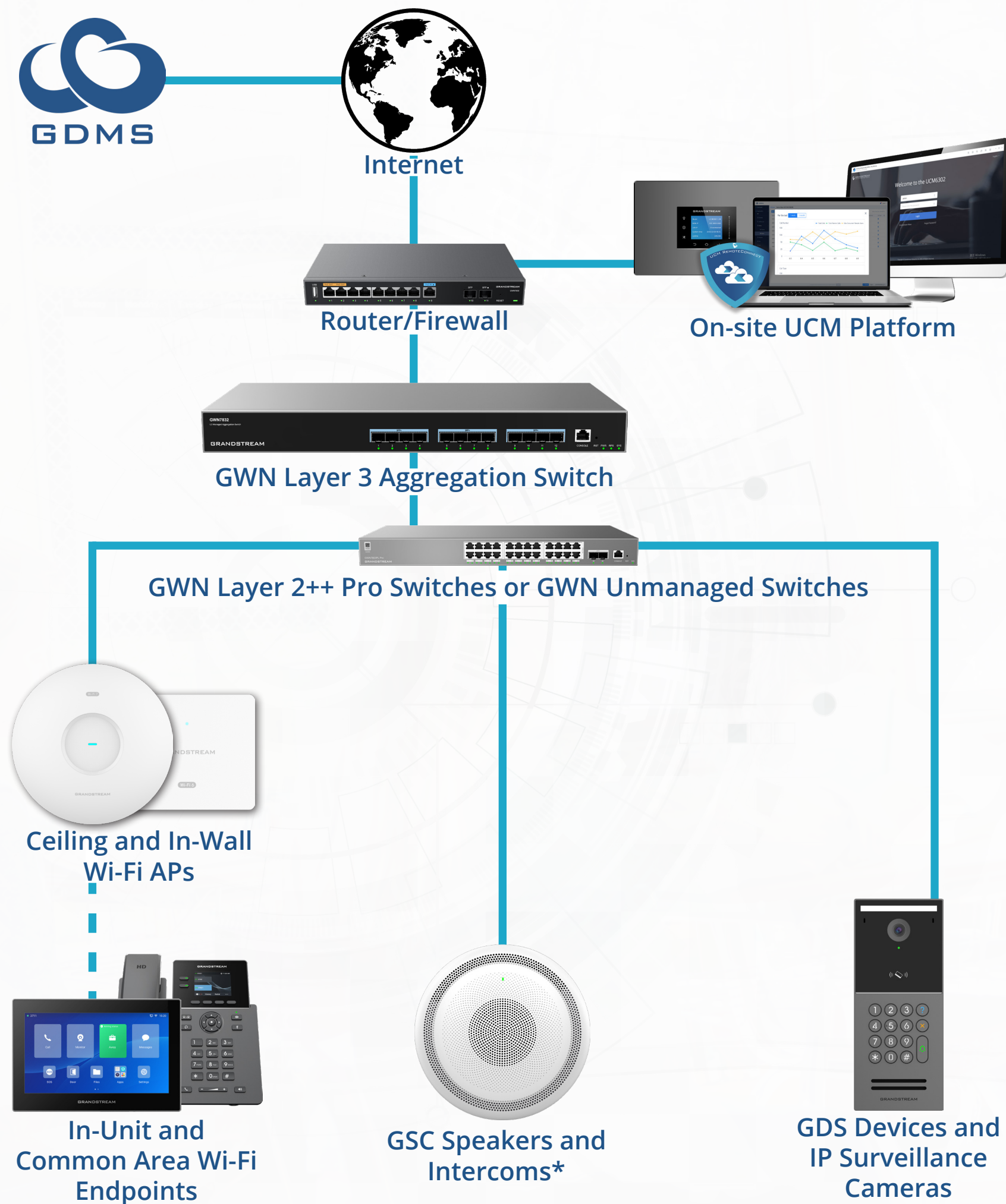
Facility management and unified communications based on deployment requirements

A UCM6300 IP PBX or SoftwareUCM PBX centralizes all of a building's communication and facility management onto one platform. The UCM acts as the backbone through which GDS facility access devices, in-unit IP phones, control stations, and GSC speakers/intercoms operate. Many Grandstream GRP/GHP IP phones and GSC facility control stations can connect to the LAN via Wi-Fi, reducing Ethernet cabling requirements during deployment. For building entry, GDS smart IP video door stations offer live video feeds, a wide range of door-opening methods, and direct calling to any desired IP endpoint within the MDU. GDS facility access devices pair with GSC facility control stations to perform a complete intercom and door control solution. A visitor, guest, or courier can use a front-door GDS to call a specific unit or a front-door receptionist, who they receives the call on a GSC device. The user can then use the GSC to view the front-door video feed, talk with the visitor, and trigger the door relay to provide access if needed.

The GDS3725/3726/3727 are Smart IP Video Door Stations that are ideal for MDU deployments. [Watch our overview video](#) to learn more.

Multi-Dwelling Units

Example Deployment



*For an alternative deployment scenario, GSC speakers/intercoms can be connected to the LAN via Wi-Fi from GWN APs or by an ethernet connection from the GWN AP's 2nd network port

User Benefits

Full Network Quality of Service Settings



- Traffic classification and prioritization, bandwidth enforcement policies, and radio resource management are major QoS capabilities supported by GWN Wi-Fi access points. Grandstream APs support the 802.11e Wi-Fi Multimedia standard, ensuring that high-priority packets, such as voice, video, and other applications, maintain quality. Bandwidth rules can also be enforced on a per-SSID or per-client basis, ensuring the performance of all devices within a particular residential unit or SSID cluster. Lastly, Airtime Fairness is an essential feature that ensures faster clients receive more airtime than slower, legacy Wi-Fi-standard client devices.
- Grandstream's Layer 2 and Layer 3 series switches include QoS features such as Port Priority, Priority Mapping, Queue Scheduling, Traffic Shaping, and Rate Limiting. For a network as client-heavy as an MDU, these features are essential to enable installers to create policies that determine how network traffic is handled and provide end-to-end service quality for all tenants and supporting equipment within the deployment. The QoS features for our switches directly complement the QoS capabilities of Grandstream's GWN Wi-Fi APs. Traffic enforcement and application priority are set at the port and VLAN level, before packets even reach the wireless level.

One Solution for Facility Management and Unified Communications



- Grandstream's UCM IP PBX platform is fundamental for creating a multi-tenant architecture that is isolated for each resident. This means each residential unit can have its own extension, voicemail, call history, and dedicated multi-purpose key functionality, while having no ability to dial into a neighbor's extension accidentally, utilize their devices for calls outside of the network, or use their IP endpoints in ways the property manager does not allow. For larger multi-building campuses, our UCM solutions can manage hundreds to thousands of common-area phones, IP intercoms, facility access devices, in-unit phones, facility control stations, staff Wi-Fi cordless IP phones, and more.
- The UCM's Multi-level Interactive Voice Response (IVR) allows guests placing calls from a door GDS to navigate an extension directory of residents or reach a resident by entering their known extension. Grandstream Wave, a softphone application available on iOS and Android, provides residents access to their unit's extension on their own smartphone. This allows them to answer front-door calls and provide building access without needing an extra in-unit device.
- Grandstream's GSC and UCM series integrates to create a comprehensive facility announcement system. Staff can page GSC speakers and intercoms individually, by floor, or throughout the building for important broadcasts.

GDMS Integration



- With Grandstream Device Management System (GDMS), Grandstream's free cloud management platform, the property manager or IT administrator can configure, update, and troubleshoot all Grandstream devices from a single portal. This is an essential feature for MDUs, which typically have hundreds of devices deployed.
- GDMS can be used to create custom device template configurations. With this capability, new devices can have their settings configured in batches, drastically reducing setup time.